



**Coal**  
Association of  
New Zealand

# Coal e-Newsletter

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## COAL NEWS

### New Zealand

#### **Carbon Capture and Storage (CCS) Seminar**

The Coal Association recently held a successful seminar in Wellington to provide an update on CCS technologies and issues from several international experts. It was attended by 60 participants including energy suppliers, users, officials and research providers.

John Topper (IEA Clean Coal Centre) provided an overview of coal issues worldwide and the IEA projection that world energy demand will expand by 45% by 2030 (one third to be supplied by coal) unless measures are taken to limit this growth. Trade in hard coal is projected to grow by 2% annually, driven partly by India building several coal powered stations on coastal sites to utilise imported coal. Under the IEA's 450 Policy Scenario, there would be dramatic changes in the power sector with 15% of all coal and gas fired stations assumed to be using CCS by 2030.

He highlighted the latest developments in clean coal technologies at various sites around the world.

John Gale (IEAGHG) reported on their programme that has coordinated about 150 studies associated with CCS and other clean coal technologies since 1991. Currently there are about 7M tonnes of CO<sub>2</sub> being stored annually around the world in five projects. There are plans under way so that the amount being stored could increase to an annual 24M tonnes by 2012. However, to achieve CO<sub>2</sub> stabilisation at 550 ppm (considered a moderate policy scenario), CCS would have to be achieving an annual 250M tonnes of storage by 2020. As the EU and other countries accelerate the deployment of CCS, such plans may become more realistic but he considered a portfolio approach, including energy efficiency improvements, will be necessary to achieve the major reductions required.



Neil Wildgust and Tim Dixon (also from IEAGHG) gave presentations on storage lessons and on international CCS regulations. David Brown (from Queensland power generator CS Energy) described the Callide Oxyfuel Project under way on a retrofitted 30MW coal fired unit. Nick Otter summarised the objectives of the newly established Global Carbon Capture and Storage Institute (GCCSI) based in Canberra.

Chris Baker (Coal Association) summarised the status of the NZ government/industry research partnership on CCS. Rob Funnell (GNS Science) gave an overview of CO<sub>2</sub> storage options in NZ, with several papers currently being published under their contract with CO2CRC. Kate Riddell (Ministry of Economic Development) summarised the government's strategy on CCS and the consultation process likely to be undertaken to develop regulations covering CCS issues.

The presentations are available on the Coal Association website [www.cleancoal.org.nz](http://www.cleancoal.org.nz).

### ***NZ government a founding member of the GCCSI***

Energy and Resources Minister Gerry Brownlee has announced the New Zealand government is becoming a founding member of the Global Carbon Capture and Storage Institute (GCCSI). This Australian initiative aims to accelerate the commercial deployment of carbon capture and storage (CCS) technology internationally.

The Minister said that New Zealand is in the early stages of investigating the potential of CCS for our unique energy mix and environment. He said that domestically, this support is designed to ensure maximum flexibility for New Zealand's energy future. "We have much work to do in order to establish whether CCS is a viable option for us." He added there is an important international aspect in that New Zealand supports CCS deployment, particularly in significant CO<sub>2</sub>-emitting economies, recognising that global uptake of CCS is likely to contribute to reducing global CO<sub>2</sub> emissions in the future.

The GCCSI has a number of governments and at least 30 industry participants as founding members. A meeting to discuss the Australian Government proposal for a GCCSI was held in London last November. Attended by more than 165 delegates, the meeting included representatives from 21 countries including China, India, Japan, the UK, Norway, Netherlands, the US and Canada, as well as multinational companies and a range of research organisations. The Australia based GCCSI will facilitate the G8 goal of delivering at least 20 commercial scale CCS plants around the world by 2020. It is intended that the Institute will work closely with and complement other forums such as the Carbon Sequestration Leadership Forum and the International Energy Agency Greenhouse Gas R&D Programme.

### ***New estimate of Maitua coalfield***

Recent drill exploration by Solid Energy in two of its large eastern Southland lignite fields at Maitua and Croydon has consolidated knowledge of the resource. The company's annual report estimated the entire resource at Maitua (New Zealand's largest single coalfield) to contain 3.03 billion tonnes of lignite, improving the quality of the estimates made in the 1970s and 1980s by the New Zealand Coal Resources Survey. Solid Energy owns or has access to only part of the Maitua field.

A programme of 14 drill holes (producing 2.9 km of core in Croydon) was used to better define the 10 seams within the deposit. The company plans to complete a mining concept study of the Croydon coalfield in 2009.

In the Maitua field 29 holes were drilled by Solid Energy producing 4.8 km of drill core. "The increased accuracy of our estimate comes from an improved understanding of lignite density, mineable seam thickness and improved resource modelling," the company said.

The lignite resources of Solid Energy in Otago and Southland now total 2.2 billion tonnes.

### ***Stockton long term investments confirmed***

Solid Energy confirmed in January it will invest \$100M in a new coal processing plant at Stockton Opencast Mine in the Buller. The company described this as the next major step in a substantial long term investment programme designed to secure a further 20-year life for the mine. The facility will begin operation in early 2010, separating high value coal from rock and other waste material, and washing and grading it. The plant has been designed to produce between 600,000 tonnes and 1M tonnes of coal a year.

Solid Energy also said that it has secured and confirmed orders from international customers for 10 shipments of Stockton export coal for the first three months of the year. However, it would cut coal production at the mine by 20% from 1 July this year in response to the worldwide reduction (up to 30%) in international demand for steel-making coal.



The company said that it is nevertheless accelerating a number of major long term capital projects, infrastructure improvements, and health and safety upgrades over the next year to 18 months. This would enable a return to full production when market demand increases with operations that are safer, more efficient and more productive.

In the 2008 financial year Stockton produced 1.825M tonnes. On current plans it will have produced 1.65 Mt when this year ends on 30 June, a drop of approximately 10%. Based on current international demand, Solid Energy is now planning for the mine to produce 1.35 Mt in the 2010 year.

### **Conservation Minister visits Pike River mine**

The Conservation Minister, Tim Groser, recently visited the Pike River coal mine in the Paparoa Ranges on the West Coast.

Mr Groser said the company has set a new environmental standard for mining, with a 'showcase' development. He also said that Pike River Coal has shown it is possible to undertake a full-on commercial activity with significant economic benefit to the West Coast and the country – and still safeguard the outstanding natural environment it is working in.

The underground mine, with a total surface footprint of just 13 hectares, has been developed on land managed by the Department of Conservation.

Mr Groser said not only is Pike River Coal meeting its commitments under the company's access agreement with the department, but it is also adding real value to the environment through conservation and predator eradication programmes.

### **Solid Energy exports Southland coal fines**

Solid Energy has exported 20,000 tonnes of coal fines from their Ohai Opencast Mine in western Southland through its Lyttelton coal terminal. A daily 20 wagon train carried about 850 tonnes up the South Island line from early January to early February, with the aim of moving up to 20,000 tonnes during the month. The Ohai stockpile contained about 60,000 tonnes of fines so more may be shipped later in the year.

Solid Energy said it could not find a local buyer for the fines, which are being moved so that rehabilitation can continue at the Ohai site in preparation for a June 2009 mine closure.

### **Solid Energy resource drilling in Cypress**

Solid Energy has begun a resource drilling programme at its proposed Cypress North pit on the Stockton Plateau in Buller. The 35-hole programme will gather core samples of the coal as well as other geological samples. Until the end of March, when the kiwi breeding season ends, a kiwi search team will check each drill site for signs of kiwi and their nests before rigs are flown in. If any kiwi chicks or eggs are found, they will be transported to Christchurch to the Willowbank Wildlife Reserve to be reared for later release. Other wildlife site searches target a species of land snail and several lizards. The two proposed Cypress pits are in the Upper Waimangaroa Valley immediately to the east of Solid Energy's current mining area at Stockton.

### **Partners sought for coal project**

Owners of one of the North Island's largest coal fields are in talks with Port Taranaki over potential development of a new export trade through New Plymouth.

Mokau South Resources (MSR) is owner of the Mokau field and holder of the mining licence for the field which extends from the Mokau River almost to Ohura. The field contains at least five coal seams up to 3m thick with potentially up to 15 Mtonnes of coal able to be accessed by open-cast mining.

MSR is 76% owned by former Taranaki men Ian and Murray Sampson and they confirmed talks were being held with Port Taranaki over exporting the coal, particularly to Australia, China and India.

Mr Sampson said his company had held talks with trucking firms over means of getting the coal to port. Port Taranaki Ltd business development manager Jon Hacon confirmed talks had been held with MSR.

### **Company merger will lead to coal seam gas developments**

The private Australian coal seam gas exploration company Chartwell Energy Pty Ltd involved in New Zealand exploration plans a merger with listed Brisbane CSG company Comet Ridge. Chartwell is a partner in the Macdonald-Chartwell CSG joint venture which holds the first CSG mining permit awarded in New Zealand near Greymouth and two exploration permits in Buller and Waikato-Thames Valley areas.



The Chartwell-Comet Ridge merged entity will be owned 55% by Chartwell shareholders and 45% by Comet Ridge and is to be known as Comet Ridge. It plans a high level of drilling activity in 2009 in New Zealand as well as Australia and the US.

Currently, Macdonald-Chartwell is drilling the Matata-1C well in South Auckland testing coal seams less than 400m deep. Another well is soon to be drilled in the JV's Buller permit area. In the Greymouth area mining permit, seismic data is being interpreted before more core holes and pilot wells are drilled.

## INTERNATIONAL NEWS

### Australia

#### *Coal's tale of two markets*

Recent sales figures from Macarthur Coal and Centennial Coal point to a divergence between the markets for coking coal and thermal coal. To the benefit of Centennial, demand for thermal coal for power plants has held up much more strongly than that for coking coal, which is used in steel production.

Centennial recently reported even stronger export sales for the December quarter. The miner has been trying to increase its proportion of export sales, which attract higher prices than domestic sales, even if the export price halves to about US\$ 75/tonne. In total, Centennial sold 3.9M tonnes in the December quarter. Of that, 1.1M tonnes were exports.

#### *Newcastle port takes over as largest coal exporter (Australia)*

Newcastle has out-traded Queensland's Hay Point to become the world's largest exporter of coal. Despite claims that NSW is already in recession, the Hunter region sea port has enjoyed record trade figures across a number of commodities in the first half of the financial year.

The strong growth has been led by a jump in the amount of coal exports. A total of 50M tonnes of trade was registered by the port for July-December 2008, which was 3M tonnes more than for the corresponding period the previous year. Coal exports were the major factor, with 47M tonnes being exported, including a record monthly total of 8.6M tonnes in December. Eighty per cent of coal exported from Newcastle is thermal coal.

### Brazil

#### *Brazil Vale completes coal acquisition in Colombia*

Brazilian mining giant Vale said it had completed the acquisition from Cementos Argos of some coal assets in Colombia for US\$306M. The assets include a coal mine called El Hatillo, the Cerro Largo coal deposit, a minority stake in the Fenoco consortium that operates a railroad linking coal mines to a port, and the concession of the Rio Cordoba-SPRC port on Colombia's Caribbean coast.

Vale, which still gets most of its revenue from iron ore, is seeking to build a coal asset platform in Colombia, the world's third biggest exporter of high quality thermal coal. Vale already has coal operations in Australia and is involved in two joint ventures in China that own a coal mine and a coke plant. The Brazilian company is also developing a large coal project in Mozambique.

### Canada

#### *Weststar acquires Nunavut coal property*

Weststar Resources Corp announced the acquisition of a 100% interest in six Coal Exploration Licence applications, located on the Bache Peninsula, Ellesmere Island, Nunavut Territory.

The Exploration Licences cover an area of approximately 450 square kilometres with the final land package to be determined at the time of granting of the Exploration Licences. The company is in the process of creating a wholly-owned subsidiary which will hold and manage this and any subsequent Arctic coal acquisitions.

### China

#### *Applications deferred for coal prospecting rights*

China will continue suspending new applications for coal prospecting rights for another two years, the Ministry of Land and Resources said recently. The suspension, which will last until March 31 2011, aimed to prevent an oversupply of coal and keep coal production stable in the country, the ministry said. However, major coal exploration projects approved by the State Council, as well as surveys of coal resources with the support of special geological funds from the central and provincial governments, can continue.

China suspended applications for coal prospecting rights for the same reasons in February 2007 to last until the end of 2008.



The country's coal output reached 2.72 billion tonnes, up 7.5% year on year, according to the State Administration of Work Safety. China Coal Energy Company said its trade volume in 2008 was 88M tonnes, up 3% from the previous year. China Coal exported 15.7M tonnes of coal in 2008.

China's raw coal production reached 554.3M tonnes in the first quarter this year, growing 27.5M tonnes from the same period last year, representing a year on year growth of 5.22%, according to data released by the China Coal Association.

### ***China's top coal province to trim coal output***

China's top coal producing province, Shanxi, plans to produce 650M tonnes of raw coal in 2009, down 2% from the previous year, the official Xinhua News Agency said at the end of March. Shanxi's coal output has maintained double-digit rates of annual growth over the past few years, as China's appetite for electricity surged with the booming economy.

The Shanxi Province Coal Industry Administration has decided to control overheated investment in coal mining, according to the Xinhua report. The province also plans to cut the number of coal mines to 1,000 from 2,500 over the next two years. Thousands of small mines in China, most of them dangerous and inefficient, are blamed for China's poor mine safety record.

### ***Initial agreement reached on thermal coal price***

China's coal enterprises reached initial agreement in mid-April with Japanese representatives on the term price of thermal coal, said sources with China Coal Industry Association. The two parties had agreed to a price around US\$ 70/tonne, tumbling 46% from last year's US\$130/tonne.

The price is much lower than the spot price of 560 yuan/t for thermal coal, traded at Qinhuangdao, the benchmark for the domestic market. However, analysts said it would impose limited impact on domestic prices, as China's annual exports of some 40M tonnes is almost equivalent to imports, a marginal volume as compared to the 2.7 billion tonnes of coal sales in the domestic market.

### ***China Shenhua reaches domestic coal deals***

At the end of March, Chinese coal mining giant China Shenhua Energy Co announced long term contracts had been agreed with some unnamed Chinese power producers. Shenhua and China's other big coal miners have been struggling since the start of the year to agree 2009 prices with the big five power generators: Huaneng, Datang, Guodian, Huadian and China Power Investment Corporation.

The company did not elaborate and would not even say whether the 2009 price negotiation was effectively over. It simply commented that the signed contracts "are very satisfactory from our point of view... we are confident that our sales target will be met."

Some industry sources cautioned that a price settlement between Chinese suppliers and domestic utilities could also mark an end to China's recent binge on overseas coal, which could threaten Asian spot coal prices. "This will change market dynamics. Chinese utilities have been buying a lot of coal from Indonesian and Australian producers and that has offered some support to Asian prices.

During power shortages last year, many coal miners delayed or refused to deliver contracted amounts when spot coal prices shot up, and demanded power companies pay prices higher than contracted prices.

### ***China Coal to invest in Xinjiang***

China National Coal Group Corp said it plans to invest more than 100 billion yuan (US\$ 14.6 billion) in China's far northwestern Xinjiang region over the next five years. China Coal will invest in coal mining, coal fired power generation, coal chemical plants and the development of coal-bed methane. The total annual production value is expected to exceed 30 billion yuan.

China Coal Energy Co, the listed arm of China's No. 2 coal miner, has said it was suspending a 17 billion yuan project in Heilongjiang, which would have produced 10M tonnes of coal a year. The remote Xinjiang region holds about 40% of China's coal reserves, or about 2.2 trillion tonnes. It produced 60M tonnes of raw coal in 2008, and has attracted investment from large coal groups including China's top coal miner Shenhua.

The Xinjiang Bureau of Coal Geology recently announced the discovery of a 3 billion tonnes coal reserve at Aiding Lake. The coalfield has a perimeter of 16 by 10 kilometres and is estimated to be 10-22m deep. It suggested more coal exists in areas surrounding the lake, which could bring the total reserve in the region to 27 billion tonnes.



Construction has started in another Xinjiang coalfield covering 224 km<sup>2</sup> with a confirmed reserve of 15.8 billion tonnes. The trenching and exfoliation project of this surface coal mine requires an investment of 180M yuan. The initial plan is to reach an annual mining capacity of 30M tonnes by 2020.

## India

### *Rio Tinto agrees to slash coking coal prices*

Rio Tinto Group agreed to cut coking coal prices for India's JSW Steel Ltd. by 43% for the last three months of an annual contract after global demand slumped. Prices were slashed from US\$305/tonne to US\$175/tonne for the March quarter.

The reduction may set a precedent and encourage mills to press BHP Billiton, Rio Tinto and other miners for cuts in iron ore and coal prices before contracts expire. Steelmakers are trying to lower costs and output as demand and prices plunged because of the global recession.

### *EFPs may smooth credit for coal trade*

A new trading tool may help to unblock a growing spot coal market between India (and Pakistan) and major European traders and utilities. This trade has been hobbled by the freezing of credit lines across global markets. Exchanges For Physical (EFP) trades via trading platform globalCOAL have made trade between counterparties easier.

Producers said they have mostly found the credit problems too difficult to deal directly with buyers in the sub-continent, preferring to deal via traders. Indian and Pakistani traders who account for the bulk of spot import buying have been struggling to open letters of credit. Some have even resorted to using their personal cash accounts to pay for cargoes.

India will import over 35M tonnes of coal in 2009 and Pakistan around 3.5M tonnes as part of worldwide coal trade of around 650M tonnes.

### *Ministerial group on CTL projects picks companies*

The inter-ministerial group on coal-to-liquid projects recently short-listed companies that will be allotted three coal blocks for undertaking such projects and submitted recommendations to the government. These include companies from a list of 21 entities who had submitted their applications for manufacturing petrol and diesel from coal.

Three coal blocks were on offer and companies would be required to undertake investments of US\$6-8 billion in each block for annual outputs of 3.5M tonnes of oil and oil products.

### *Coal India, NTPC to sign deal*

Coal India Limited (CIL) and NTPC Ltd have decided to sign an agreement to always maintain 75% fuel supply for the power entity. The trigger level for the level of supply will be at 75% and under the accord CIL would not allow the supply to fall below 75%. If the CIL failed in this, it would have to pay the NTPC a penalty.

NTPC Ltd earlier asked for a trigger level of 90% of the total committed coal supply to power utilities. NTPC said its requirement of coal for the year ending March 2009 was around 125M tonnes, of which close to 8M tonnes was imported.

## Indonesia

### *Sumatra plans coal railway project*

Indonesia's South Sumatra province plans to invest US\$1 billion in new railroads so that its huge coal reserves can be moved from the mines to the ports more efficiently.

South Sumatra has 47 billion tonnes of coal resources or half of Indonesia's total of 93.4 billion, according to data from the energy and mines ministry, but its coal production averages just 12M tonnes a year due to poor transportation.

The province said there are plans to build 270 km of railway, which will have the capacity to transport 50M tonnes of coal mined each year. It will hold a tender for the project this year and has already received interest from investors.

State coal miner PT Tambang Batubara Bukit Asam Tbk, which has coal mines in South Sumatra, is one of the firms that could benefit from the project. Bukit Asam has already said it would form a joint venture with state train operator PT Kereta Api Indonesia to upgrade an existing railway linking its coal mines to a port on the southern tip of Sumatra.



### ***Bumi to purchase stake in coal mine***

Bumi Resources will buy a controlling stake in Pendopo Energi Batubara. Bumi will pay US\$ 119M, for an 84% interest in the coal mining company and plans to complete the purchase in two years.

Bumi had already agreed to buy a controlling stake in Fajar Bumi Sakti and said it would also purchase a 44% stake in Darma Henwa, a mining contractor, for US\$ 218M.

### **Japan**

#### ***TEPCO sees higher oil, coal use***

Tokyo Electric Power Co (TEPCO) has forecast higher consumption of oil and coal in the next business year, saying it was assuming there would not be a restart of its quake-hit nuclear plant. TEPCO expects to boost coal consumption by 21% to 3.9M tonnes in the year to March 2010. It also projected less consumption of LNG. Asia's biggest utility also expects its electricity sales to fall for a second straight year, down 0.3%, led by weak demand from the industrial sector amid a deepening recession.

#### ***Historical benchmark in thermal coal contract prices***

By mid-March, miners Xstrata and Rio Tinto Ltd had inked thermal coal contracts with Japan's Chubu Electric for fiscal year 2009/10 at prices as much as 44% lower than a year earlier, according to coal traders familiar with the negotiations.

The first major price deal between big Australian coal miners and the Japanese utilities that are their main customers normally sets the tone for further negotiations for contracts that cover the April to March Japanese fiscal year, affecting power plant costs and miners' revenues for the year.

Historical thermal coal contract prices had grown considerably from US\$26.80/tonne in FY03/04 to US\$61.85/tonne in FY06/07 and US\$125/tonne in FY 08/09.

#### ***Steelmakers seek iron, coal price cuts***

Nippon Steel Corp and other Japanese steelmakers will press for cuts of 40% in iron ore prices and 60-70% in coal prices for the next business year due to falling costs of natural resources and weakening steel demand.

The cuts would bring iron ore and coal prices in line with 2007/08 levels and save the industry around US\$33.8 billion. Japan's steel industry is set to slash output by at least 30% in January-March, and hopes to offset the impact of lower capacity utilisation by asking for sharp raw material price cuts.

### **Mongolia**

#### ***Peabody secures option to join Polo Resources mining venture***

Peabody Energy Corp announced it has secured an option to buy up to 50% in a joint venture with Polo Resource Ltd's coal and mining interests in Mongolia.

Polo's mining rights in Mongolia provide access to an estimated one billion tonnes of coal in the South Gobi, close to key Russian and Chinese export markets.

### **Mozambique**

#### ***JSW Steel scouts for coal block***

JSW Steel has signed an MoU with a local player in Mozambique to conduct due diligence on a 6,900-hectare site that could be later mined for coal. Based on the study's findings, the company has the option to carry out detailed exploration studies and prepare mining plans. The move is part of JSW's plan to meet raw materials needs as it expands its capacity to 7M tonnes per annum by 2009 from 3.5M tonnes.

Apart from Mozambique, the company is exploring similar opportunities in Canada, Australia and Indonesia. It prefers the African country as costs of developing coal mines there are comparatively lower than in Australia. While the coal mines will mostly feed the company's steel plants, they may be also used to fuel its upcoming captive power plants of 600 MW.

#### ***Vale launches coal project***

Brazilian mining company Vale has launched the construction of a US\$1.3 billion coal project in northern Mozambique, with a capacity to produce 11M tonnes of coal per year (8.5 Mt of metallurgical and 2.5 Mt of thermal coal). The plant will be located in Moatize in the Tete province, and the coal produced would be exported to Brazil, Asia, the Middle East and Europe.

South Africa holds most of Africa's coal reserves, but experts say Mozambique is expected to become the second ranked coal producer in the continent with the development of the Moatize project by Vale, formerly known as



CVRD, the world's largest iron ore producer. Mozambique, one of Africa's poorest countries and still largely dependent on agriculture, has become popular with foreign companies and investors interested in staking a claim to Africa's vast mineral and energy resources.

### Philippines

#### *DOE awards contract to Lima Coal*

The Department of Energy (DOE) is set to award a coal-operating contract (COC) in Gubat, Sorsogon to local mining firm Lima Coal Development Corp. Energy Undersecretary Ramon Oca said that the area up for coal exploration and development covers 3,000 hectares in the said province.

The area is said to contain untapped resources of coal, limestone, pumice, sulphur and white clay but reserve estimates have yet to be made for these resources. "The company has a work commitment of P15.20 M for two years exploration," Oca said.

Lima Coal currently has an existing COC for development and production in Calanaga in San Ramon, Batan Island, Rapu-Rapu, Albay.

DOE is currently pushing for the development of the coal industry to fill in the country's short-term power needs since it may take a while for renewable energy sources to make a big dent in electricity supply. The department is also set to offer four areas for bidding under the Philippine Energy Contracting Round slated for this year. Last year, DOE awarded four COCs to IL Rey's Coal Mining and Exploration Corp. in Danao City, Cebu, Guidance Management Corp. in Negros Oriental and PNOC-Exploration Corp. and Agusan Petroleum and Mining Corp. in Siay, Zamboanga Sibugay.

### Thailand

#### *Banpu sees higher average coal price*

Banpu PCL said it expected an average coal price of US\$75-80/tonne this year, up slightly from US\$72/tonne in 2008. Banpu maintained its sales growth forecast of 10% this year. The company has made forward contracts for more than 50% of 2009's sales at a price of almost US\$80/tonne.

### South Africa

#### *Eskom to burn less coal*

Eskom Holdings Ltd will burn less coal next fiscal year as economic growth slows and consumption of electricity weakens. The company expects to burn 130M tonnes of coal this fiscal year.

The company does not expect power demand to grow for the next two years. South Africa's economy grew at an annualised rate of 0.2% in the third quarter, the slowest pace in a decade and Eskom is not seeing demand growth.

#### *Richards Bay Coal Terminal exports rose*

Richards Bay Coal Terminal, the world's largest coal export facility, shipped 4.85M tonnes in March, 5% more than the same month a year earlier. The terminal on South Africa's northeast coast is owned by South Africa's largest coal exporters, including Anglo American Plc, BHP Billiton Ltd. and Xstrata Plc. While it is the world's biggest coal export terminal, Australia's Newcastle port ships more of the fuel from two terminals.

Fifty eight ships were loaded during the month and 811 trains arrived at the facility. Coal shipped from the terminal traded at an average of US\$62/tonne in the first week of April.

### USA

#### *Fitch release on US coal outlook for 2009*

Fitch Ratings said its US Coal Outlook for 2009 will include a weaker demand than 2008 but resilient cash flows will sustain the industry's stable outlook.

According to the report, coal producers are scaling back production due to the sharp economic contraction that has resulted in lower prices for natural gas, expectations for lower power demand, and sharply lower global demand for metallurgical coal.

While spot prices are trending down, most of 2009's and a significant portion of 2010's steam volume has been priced in the favourable environment of late 2007/early 2008. Fitch says regulatory uncertainty about carbon emissions has stalled plans for many new coal plant builds, which will cap domestic demand in the medium term.

#### *Coal region worried about EPA mine permit reviews*

The Obama administration's decision to hold coal mining permits to a high environmental standard has struck a note of economic fear in Appalachia, where mining has been a shield against hard times afflicting the rest of the



nation. The Environmental Protection Agency announced it will take a closer look at 150 to 200 coal mine permit applications under review by the US Army Corps of Engineers. EPA singled out two proposed surface mines in West Virginia and one in Kentucky as a start.

In a break from Bush administration policies, EPA is asserting its authority under the federal Clean Water Act to scrutinise plans to dump mine waste into streams and wetlands. The National Mining Association estimates EPA's reviews could threaten 77,500 coal mining jobs and 385M tonnes of annual production in southern West Virginia, eastern Kentucky, southwest Virginia, Ohio and the Illinois Basin.

#### ***Radar releases RFP***

Radar Acquisitions Corp announced that they are looking for a qualified partner to respond to a Request For Proposals for base load power (clean coal technology) published by Xcel Energy.

Radar's Buick Coal Property, located 150 km south east of Denver, Colorado, holds a significant resource that is ideally suited for the development of additional power generation capacity.

#### ***NV Energy confirms interest in Valmy***

NV Energy Inc. is interested in building another coal fired power plant similar in size to the 1,500 MW power plant at Ely, Nevada. The Public Utilities Commission directed NV Energy to update information on the possibility of building another coal fired plant at Valmy Generating Station, 200 km northwest of Reno.

As the holding company for electric utilities in Nevada, NV Energy sees a third unit at Valmy as an additional plant rather than an alternative to the Ely facility.

### **TECHNOLOGY & OTHER NEWS**

#### ***New Initiatives in CCS (UK)***

The UK government has announced measures to promote CCS deployment in Britain as part of its 2009 Budget. It outlined plans for the introduction of a mechanism to deliver up to four CCS demonstration projects, including both pre- and post-combustion coal projects. Funding will be raised in the form of a levy on consumers' electricity bills. The current competition to build the UK's first CCS demonstration plant by 2014 will remain in place, with £90M being allocated to companies to fund preparatory studies for CCS.

The government also announced that no new coal plants will be permitted in the UK "from day one" without demonstration of CCS. He also outlined a requirement for all coal plants to be fully retrofitted with CCS within five years of the technology being judged technically and commercially viable.

Overall, the government believes that development of CCS could sustain around 50,000 jobs by 2030, including the rejuvenation of North Sea industry. The new measures are designed to put the UK at the forefront of global CCS deployment.

#### ***Global CCS Institute head appointed***

In January 2009, Australian Prime Minister Kevin Rudd appointed a British engineering executive to head his A\$100M a year Global Carbon Capture and Storage Institute aimed at saving coal as a power generation fuel. Nick Otter, previously director of technology and external affairs at Alstom Power UK, the global power generation equipment supplier, has taken on the task of making Australia a lead player in CCS technology, opening up lucrative Chinese and Indian markets.

#### ***CO2CRC website a wealth of CCS information***

The Cooperative Research Centre for Greenhouse Gas Technologies (CO2CRC) website ([www.co2crc.com.au](http://www.co2crc.com.au)) has a number of useful resources on CO<sub>2</sub> Capture and Storage (CCS), including CO<sub>2</sub> Futures, its monthly newsletter. It has recently added its Annual Report 07/08 and a large number of research papers covering a wide range of CCS issues. The NZ Government, Solid Energy, Genesis Energy and GNS Science are among the organisations funding the CO2CRC.

The Annual Report outlines that the centre's mission is: to undertake outstanding research into new CO<sub>2</sub> sequestration technologies demonstrating that CCS is economically and environmentally sustainable; to enable Australia to decrease its CO<sub>2</sub> emissions to the atmosphere, while maintaining the competitiveness of its industries and exports and develop new commercial (including hydrogen based) opportunities; to contribute to the resolution of a significant global environmental problem through participation in international programmes such as the Climate Action Partnership; and to offer outstanding education and training in greenhouse gas technologies.

Among the research papers are:



1. Thirteen CCS projects in Australia, among them CO2CRC Otway, CSIRO Loy Yang PCC Pilot Project, Munmorah, Hazelwood, CO2CRC H3, Mulgrave, Loy Yang), Callide Oxyfuel, Otway), ZeroGen, Coolimba), Gorgon LNG Project and the Monash (coal to liquids) Project.
2. The CO2CRC Otway Project: Overcoming Challenges from Planning to Execution of Australia's first CCS project.
3. The Latrobe Valley Post Combustion Capture Project
4. A study examining least cost solutions for CCS technologies in Central Queensland, where over 40.5M tonnes of CO<sub>2</sub> are emitted from fixed sources every year.
5. Process integration analysis of a brown coal-fired power station with CO<sub>2</sub> capture and storage and lignite drying.
6. Techno-Economic Modelling of the Energy Systems: Development of Australian Conditions for Technology Assessment.
7. Recent developments in solvent absorption technologies at the CO2CRC in Australia.
8. CO<sub>2</sub> storage in saline aquifers II – experience from existing storage operations.

### ***New Zealand CO<sub>2</sub> storage potential***

CO2CRC research programmes contribute to regional studies, which assess a range of geological sites that have the potential to be suitable for long term storage of CO<sub>2</sub>. These studies incorporate geological conditions, storage reservoir characteristics, proximity to stationary CO<sub>2</sub> sources, economic issues and regional strategies for CO<sub>2</sub> mitigation. New Zealand is the subject of one such regional study, in partnership with GNS Science. The study is identifying storage options and providing storage capacity estimates for seven regions, covering most of New Zealand.

The Taranaki Basin is better characterised geologically than other basins through a long history of petroleum exploration and production, with storage potential in depleted oil and gas fields and deep saline formations. The focus in other basins throughout New Zealand is on assessing storage capacity in deep saline formations although coal seam storage is likely to contribute to storage capacity in the Waikato and West Coast regions. While the emphasis is on storage options and capacities, the study includes an initial consideration of broad social and cultural acceptance issues.

The project is running in parallel with more detailed assessments of the Waikato and Taranaki regions, made under the Foundation for Research, Science and Technology and industry sponsored CCS Programme. A second report has been produced from this project, providing important planning information to NZ government and industry.

### ***Australian energy research needs investments***

Australia needs to invest some A\$6 billion on RD&D on new power generation technologies by 2020 to meet the challenge of achieving projected CO<sub>2</sub> reductions. This investment, by government and industry will require follow-up expenditure on technology deployment and no single new technology for stationary energy production will achieve the projected CO<sub>2</sub> reductions. These are key findings of a study by the Australian Academy of Technological Sciences and Engineering (ATSE) titled Energy Technology for Climate Change – Accelerating the Technology Response.

ATSE calls for the establishment of a new national Energy Research Council to fund the necessary RD&D proposals and recommends relentless application of cost effective energy efficiency and conservation strategies so that stationary energy demand growth is less than 1% a year, over a sustained period. ATSE also recommends continued support of existing Australian programmes (including the Renewable Energy Fund, the Energy Innovation Fund, the creation of an Australian Solar Institute), the National Low Emissions Coal Initiative and the Global Carbon Capture and Storage Institute.

ATSE's report says that while much emphasis is currently being given to a Carbon Pollution Reduction Scheme trading scheme (CPRS) to reduce greenhouse gases, a CPRS is a necessary, but not sufficient, condition for timely new technology deployment. New low emission technologies for electricity generation must be deployed on a massive scale to achieve the proposed reductions and this has major implications for RD&D.

The ATSE study will identify those technologies that can most efficiently and effectively reduce carbon emissions for stationary power generation in both technical and financial terms. In addition to qualitative descriptions of low carbon energy generating technologies, results are presented using a probabilistic, computational approach to investment costs and carbon reduction for a range of hypothetical technology scenarios in the future.

The report notes there are major issues related to public perception and government policy, technical and environmental uncertainty regarding CO<sub>2</sub> storage sites, high investment cost to replace carbon or other environmental issues.



### **EU Recovery Plan approves CCS, others**

As part of the European Economic Recovery Plan (EER), the European Council recently provided financing to a range of infrastructure projects, including strategic energy and CCS projects. The proposal will now head to the European Parliament for approval, which could occur as early as May. While the Green Party is opposed to public sector funding of CCS projects and will oppose the package, it is understood that the other political parties are broadly supportive of the package and the Commission is therefore hopeful that the proposal will be successfully passed.

Thirteen CCS projects in 7 different countries have been earmarked for financing, but only one from each country will ultimately be eligible to receive funds. These projects are comprised of 12 coal fired power stations and a steel production plant. The coal fired projects are all set to be on an industrial scale, ranging in size from 450 to 3390 MW. In total, the EER has allocated €1.05 billion in funding towards CCS projects from an overall energy project budget of €4 billion. The projects must have the ability to capture and store at least 85% of their CO<sub>2</sub> emissions and must have an electrical output of at least 300 MW in order to qualify for funding.

### **World's first CCS retrofitted power plant in France**

The world's first retrofit of a power plant with CCS technology will soon begin operating in the south of France. At a power plant at Lacq, energy company Total has upgraded an existing gas fired boiler with CCS technology. The €60M Lacq project will transport and store 60,000 tonnes of CO<sub>2</sub> every year in the nearby depleted gas field at Rousse – once the biggest onshore natural gas field in Europe, but which is now almost empty. It is the first to link together all parts of the carbon capture chain from burning natural gas to isolating CO<sub>2</sub> from flue gases and burying it underground. Total has fitted one of the plant's 30 MW gas fired boilers with oxyfuel technology, where the fossil fuel is burned in an atmosphere enriched with oxygen. The resulting exhaust gas is then composed almost entirely of CO<sub>2</sub> and water vapour, which can be easily separated and stored.

Experts welcomed Total's achievement but added that it highlighted how Britain was being left behind in the development of an important technology to head off climate change. Stuart Haszeldine, professor of geology and an expert in CCS at the University of Edinburgh, reacted to the announcement with some scathing criticism: "The UK has been first to stoke up interest in CCS, in the 1990s. But since then, CCS has not received any significant government support to make any real projects happen. We have to completely clean up CO<sub>2</sub> emissions from gas as well as coal by 2030, if the UK is to meet the legally binding decreases set by the climate change committee. Projects like Lacq will help to make cleanup cheaper and bring that reality closer."

In 2008, the Schwarze Pumpe power station in north Germany became the first demonstration experiment to build a 12 MW fossil fuel fired boiler from scratch with full CCS – it will bury 100,000 tonnes of CO<sub>2</sub> a year 3,000m below the surface of the depleted Altmark gas field.

The UK government wants to fund a single demonstration plant using post-combustion capture technology and is running a competition to decide which new power station will get the go-ahead. Ministers are soon expected to announce proposals on how to fund further CCS projects in the UK beyond the competition. However, the British government's procrastination has forced many CCS projects planned in the past decade to be abandoned or moved abroad. These include BP's plans to build a carbon capture plant at Peterhead and Centrica's Eston Grange project.

### **Stimulus money puts US clean coal projects on a faster track**

The allocation of US\$3.4 billion in the federal stimulus bill for CCS has allowed Duke Energy and other companies to consider mounting full scale projects. The Duke proposal is to capture within five years about 18% of the CO<sub>2</sub> emissions from a US\$2.35 billion coal fired power plant currently under construction in Indiana and an additional 40% a few years after that. Two other such gasification plants already operate, in Florida and Indiana. An independent coal expert believes this may be the first commercial carbon sequestration site in the US. Duke is currently conducting a US\$17M study and has asked permission from its regulators to study a second step, to capture an additional 40% or so of the CO<sub>2</sub> produced at a later stage.

Other companies around the country also are exploring CCS projects. According to a recent report by consultants Emerging Energy Research, Illinois has passed legislation that could require its utilities to buy electricity from plants that sequester their carbon. Six other states are considering legislation to help pay for CCS.

A professor of environmental engineering stated there was a need to build some full scale projects to demonstrate this technology at scale, but the price tag per project is US\$800M to US\$1 billion. The Duke venture might prove a little cheaper. The first step, capturing the CO<sub>2</sub> created when coal is turned into a fuel gas, would add 5 to 15% to the initial US\$2.35 billion cost, according to Duke Energy. However, the cost of the second stage is more uncertain and probably higher than the cost for the first step.



Until the beginning of 2008, DOE had backed a more ambitious effort, the FutureGen gasification plant in Illinois, that would have sequestered 90% of its CO<sub>2</sub>. Companies from the US, Britain, China and Australia were to contribute.

In January 2008, the Bush administration decided that the price for FutureGen had grown too high and withdrew financing, proposing instead to finance add-ons. However, a recent report by the federal Government Accountability Office found that because of a mathematical error, the DOE had greatly overestimated the cost increase for FutureGen.

### **Clean coal power initiative project ends in success**

A project selected in 2003 under the initial round of the US DOE's Clean Coal Power Initiative (CCPI) has drawn to a successful close, having met all of its performance and cost goals. The optimization software development and demonstration project reduced emissions, increased efficiency, lowered costs, and improved reliability at an 1800 MW coal fired power plant.

The report concluded the suite of four integrated optimisers commercialised as part of this project is expected to yield well under a one year payback for average sized units across all unit types and fuel categories comprising the US fossil fuelled power industry.

### **Multi-pollutant control system exceeds goals**

A US DOE project has successfully demonstrated the cost effective removal of multiple pollutants from the emissions of an older 100 MW coal fired power plant at AES Greenidge's facilities in Dresden, New York. The successful retrofit means the unit can meet increasingly stringent emissions regulations while continuing operations another 20–30 years.

The Greenidge Multi-Pollutant Control Project was successful in showing that the multi-pollutant control system could substantially reduce emissions of nitrogen and sulphur oxides, hydrochloric acid and mercury, while affording lower capital and maintenance costs and smaller space requirements than leading conventional technologies.

### **First 'clean coal' power station gets go-ahead**

An ambitious plan to build the world's largest "clean coal" power station at an old colliery in Yorkshire moved a step closer after the government gave a green light to the first stage of the project. Powerfuel, a company owned by a mining entrepreneur, was granted approval to build a 900 MW power station at Hatfield in Yorkshire.

The company has proposed to build the plant in two phases, starting with a conventional gas fired station which could then be converted to the use of coal gasification technology, in which coal from the colliery would be turned into gas with the CO<sub>2</sub> emissions stripped out for safe storage underground.

The UK Energy Minister granted approval for the first stage of the project although the government said further evidence would be needed to guarantee that the CO<sub>2</sub> could be stored safely before the second stage could be approved. The first stage is expected to cost around £900M with the second costing up to £1 billion.

If completed, the Hatfield plant would be largest plant in the world equipped with CCS technology.

### **Canada funding for CCS**

In its latest budget the Canadian federal government has promised major spending to support efforts by oil companies and coal dependent utilities to reduce greenhouse gas emissions. The government has set aside US\$ 2 billion over five years for clean energy and efficiency projects, much of it earmarked for large projects to demonstrate the viability of CCS technology.

There has also been a recent announcement of the successful projects among 40 proposals that tendered for a total of US\$130M budgeted in the current financial year. Ottawa will spend between US\$3M and US\$30M on each of eight projects in Alberta, British Columbia and Saskatchewan aimed at developing CCS technologies. The Alberta government has already said it will spend US\$2 billion to develop a CCS system for the oil sands.

### **Norway to test full scale CCS**

Norwegian state funding has been authorised to cover the costs of establishing a CCS facility at Kaarstoe. The project will capture and store CO<sub>2</sub> emitted by the power plant, Naturkraft, with the aim of testing full scale carbon capture using current technology and contribute to the global deployment of such technologies at affordable prices. The state funding will cover investment and operating costs for 10 years.



### EPRI to study CCS

The US based Electric Power Research Institute (EPRI) will be conducting five studies over 2009 into retrofitting advanced amine based post-combustion CO<sub>2</sub> capture technology to five existing coal fired power plants in the US and Canada. The variety of data from the five studies will provide the participants with valuable information applicable to their own individual power generating assets.

### Abu Dhabi to build CCS project

Abu Dhabi Future Energy Company has awarded the contract for front end engineering and design services for its CCS programme to US company Mustang Engineering, a subsidiary of international energy services company, John Wood Group. The US\$3.3 billion project is the first of a series of schemes designed to capture CO<sub>2</sub> emissions produced by power and industrial plants in Abu Dhabi and is expected to come online in 2013. The captured gas will be transported through pipelines and injected into oil fields for enhanced oil recovery. Every tonne of CO<sub>2</sub> injected could lead to an extra 2.5 to 3 barrels of oil. A total of 5M tonnes a year of CO<sub>2</sub> is planned to be captured under the first phase of the programme.

## EVENTS

**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

**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.*

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