

## COAL NEWS

### NEW ZEALAND

#### **Coal consumption continues to increase**

The Ministry of Economic Development's latest Energy Data File shows that coal consumption increased 13% to 90 petajoules or 4.1 Mtonnes (Mt) in the year ended September 2005 compared with the previous year. The main sector contributing to this increase was electricity generation using 50.4 PJ, which was 26% higher than 2004 consumption and 72% higher than 2003 when the 1000MW Huntly power station started to switch from gas to coal as the major feedstock fuel.

The industry sector recovered with an 8% increase to 34.5PJ after a 24% drop from 2003 to 2004. New Zealand Steel accounted for 20% of coal consumption and a further 18% was used for other industry, primarily meat, dairy and other food processing, cement, lime, wool and timber products. The commercial heating sector accounted for 4.1% of coal consumption, while the horticulture, transport and residential sectors used the remaining 1.9%.

Coal production reached 5.2 Mt, 3.5% more than 2004 output. Bituminous coal exports totalled 2.1Mt (9.2% higher than 2004) while coal imports (mainly Indonesian sub-bituminous) increased 21% to 1.0Mt.

#### **Eastern establishes foothold in Southland's Ohai coal fields**

Eastern Corporation, a Queensland-based coal mining company, has taken an option to purchase the coal mining operations of Straith Industries in the Ohai-Nightcaps area of western Southland. The acquisition will give Eastern a second coal mine in New Zealand and secure an operation in an area of the South Island where considerable market opportunities may exist in the coming years. Last year Eastern acquired the Cascade mine in the West Coast Buller coalfields. Eastern is also currently exploring 5 km north of Cascade at Whareatea West.

The Straith operations are located in three separate areas within the Ohai-Nightcaps region, where open cut and underground coal mining operations have been conducted for over 50 years. The Straith coal is predominantly a sub-bituminous thermal coal, with potential application for use by domestic and industrial coal customers throughout the South Island.

Eastern is pursuing a strategy of coal mine development and expansion in New Zealand as well as Australia. Eastern (through a wholly-owned subsidiary) will acquire the mining plant, equipment, permits and related assets and approvals associated with the Straith operations for a purchase price of NZ\$2M.

The purchase will be subject to completing due diligence investigations on the mine assets, existing coal resources, and available markets plus acquisition of all needed statutory and resource consents.

#### **Approval given to move snails for access to 5 Mt of coal on Stockton ridge**

Approval has been given to Solid Energy to move a rare snail population in a conservation measure that will allow access to about 5 Mt of coal on the ridgeline of its large Stockton coking coal export mine.

Solid Energy said it welcomed the decision by the Minister of Conservation and Associate Minister of Energy granting a wildlife permit for the Mt Augustus area of Stockton.

## What's news?

### COAL NEWS 1

#### NEW ZEALAND 1

*Coal consumption continues to increase 1*  
*Eastern establishes foothold in Southland's Ohai coal fields 1*  
*Approval given to move snails for access to 5 Mt of coal on Stockton ridge 1*

#### INTERNATIONAL NEWS 2

*Chinese coal industry encouraged to embrace sustainable development (China) 2*  
*Degasification strategy for Chinese coal mines (China) 2*  
*Shanxi to auction off 3 coal mines (China) 2*  
*World may turn to coal for gas and liquid fuels (China) 2*  
*Approval of coal-to-oil project (China) 3*  
*Japan eyes coal-to-liquid scheme (China) 3*  
*Utilities chiefs outline fears on energy supply security (Europe) 3*  
*Indian energy sector needs \$10 billion of private investment (India) 3*  
*Sarawak builds second coal-powered electricity plant (Malaysia) 3*  
*Focus on coal energy urged (Pakistan) 3*  
*GVM acquires coal deposit in Limpopo Province (South Africa) 4*  
*Power station heralds new start for coal (UK) 4*  
*Drilling programme for coal bed methane (USA) 4*  
*Peabody outlines plan with clean coal technologies (USA) 4*  
*Study of US power company emissions has good and bad news (USA) 4*

#### TECHNOLOGY & OTHER NEWS 5

*Statoil and Shell set the world's biggest CO<sub>2</sub> seabed plan (Norway) 5*  
*Yantai IGCC Project – H<sub>2</sub> production and CO<sub>2</sub> removal and sequestration (UK) 5*  
*Completion of first phase of 'H<sub>2</sub> from Coal Programme' (USA) 5*  
*Twelve sites proposed for FutureGen plant (USA) 5*  
*Chemists find more efficient coal-to-diesel conversion (USA) 5*  
*Experiments examine H<sub>2</sub> production benefits of clean coal burning (USA) 6*  
*World Bank will still fund coal despite climate change concerns 6*  
*IEA-CCC Reports 6*  
*Financing clean coal technologies 6*  
*Life extension of coal fired power plants 6*  
*Coalbed methane emissions - capture and utilisation 7*  
*Other reports 7*

#### EVENTS 7

#### FEEDBACK 8

#### DISCLAIMER 8

The coal producer said this was a good outcome that both secures the future of the opencast mine and gives the best possible chance of survival for the Powellphanta snail population on the site.

Mining along the ridgeline, which covers a number of mining blocks including Mt Augustus, is planned to be carried out for up to five years and will secure the jobs of about 380 Solid Energy staff and contractors who work at Stockton. The coal at Mt. Augustus, valued at about \$400M, is needed to blend and raise the specifications of lower quality coal in other parts of the mine to meet customer orders.

## INTERNATIONAL NEWS

### **Chinese coal industry encouraged to embrace sustainable development (China)**

China has decided to explore new possibilities of sustainable development in coal-rich Shanxi Province in North China. At a meeting of the State Council presided over by the Chinese Premier, it was concluded that the coal industry is facing serious challenges in administrative policies, resource management, industrial safety and pollution control, and that it is vital to pursue more sustainable development.

The government will experiment with policies in Shanxi to strengthen its administration of the industry and improve the coordination between different regulators. The policies will try to improve the industry's notorious safety record. Strict enforcement of laws, better management of human resources and the use of more sophisticated equipment have been identified as major areas of improvement. Other aspects include the reform of coal mining enterprises, improving the management of coal resources by charging royalties and establishing a mechanism for environmental restoration of coal mines.

### **Degasification strategy for Chinese coal mines (China)**

At the recent Guizhou Pre-Mining Degasification Symposium in Guiyang, Guizhou Province, China, the Pacific Asia China Energy Inc.'s joint venture drilling partner, Mitchell Drilling Co., presented their proprietary Dymaxion Drilling System and expertise as an effective method of degasifying coal seams prior to mining.

China currently produces approximately 35% of the world's coal, but it also accounts for 80% of fatalities attributed to coalbed methane (CBM) explosions and other safety related issues. In an effort to improve safety and reduce waste emissions of methane, coal miners are seeking ways to help them accomplish the goal of degasification. About half of China's coal mines are rich in gas and over 1.3 billion cubic metres of gas is being emitted each year without getting effective use. China plans to increase its annual CBM utilisation to 10 billion cubic metres in 2010 and 40 billion in 2020.

China United Coalbed Methane Corporation Ltd. announced plans recently to build two pipelines for CBM transmission in the next five years. The first pipeline would link Shanxi Province to Henan Province and be connected to the great pipeline pumping natural gas from energy-rich West China to East China. The second one will transmit CBM gas from southwestern Chongqing Municipality to feed the energy demand of the city of Chongqing.

### **Shanxi to auction off 3 coal mines (China)**

Shanxi province is to sell 3 mines with combined reserves of up to 300Mt by June. Each of the mines has reserves of between 50-100Mt. Two of the mines are located in the counties of Lanxian and Xiangfen. The location of the third has not been disclosed.

The resource-rich province will sell the mining rights through a competitive bidding process. Industry regulations stipulate that coalmines with reserves of more than 100Mt have to receive national-level approval before they can be sold. Those with less than 100Mt can be sold with approval from the provincial government.

### **World may turn to coal for gas and liquid fuels (China)**

Governments are pouring money into potential solutions such as H<sub>2</sub> fuel cells or new generation nuclear plants to offset the risk for a future energy crisis, but it may be more realistic long-term to turn huge coal reserves into gas and then oil.

China's largest coal producer Shenhua Group and South Africa's Sasol Ltd. say their coal-to-liquids (CTL) technology is worthwhile if oil stays above US\$30-35 a barrel. High oil prices have also made clean renewable energies such as wind competitive, but these cannot deliver liquid fuel to power cars. Biofuels are booming but are likely to remain limited in volume, and a wide network of H<sub>2</sub> gas filling stations for fuel cell vehicles is not considered viable before 2020.

Shenhua is expected to start production at its first CTL plant at the end of 2007, with annual output of 1Mt of oil products including diesel, gasoline and naphtha for petrochemicals.

### **Approval of coal-to-oil project (China)**

China has approved Yankuang Group's plan to develop a coal-to-oil project in its Yanzhou Coal Mines in the northwestern province of Shaanxi. The project will have an initial capacity of 1Mt/year of oil products, which will eventually rise to 5Mt/year. Yankuang would participate mainly in the preliminary stage of the project and will later transfer development to Yanzhou Coal.

### **Japan eyes coal-to-liquid scheme (China)**

Japan plans to help Chinese companies liquefy coal in an effort to satisfy the soaring demand for energy in China. Japan's New Energy and Industrial Technology Development Organization (NEITDO) said it is more economical to try the technology in China than in Japan, which has fewer available mines.

The liquefaction experiments will start in Beijing this year. Chinese companies will eventually build plants near mines to turn coal into liquid fuels. Under the scheme, a Chinese power company will start operating a liquefaction plant in 2010 to process 3,000 tonnes/day of coal mined in the Inner Mongolia Autonomous Region.

Also in 2010, a Chinese coal company will develop a mine in the northwestern Uighur autonomous region of Xinjiang and start testing a plant to process 2,500-3,000 tonnes/day of coal. NEITDO said the project aims at meeting the demand for energy in China's inland areas.

### **Utilities chiefs outline fears on energy supply security (Europe)**

Security of gas and electricity supply has become the biggest concern for executives in the utilities industry, according to a global survey by PwC. Fear of supply disruptions was greatest in Europe, where almost half of the utilities executives surveyed said power cuts or interruptions in gas supply were more likely now than five years ago.

Political instability in countries that supply Europe's gas, together with the cost of compliance with environmental regulations, were the main reasons cited for the increased risk.

47% of respondents said coal would play a larger role in power generation and around 40% said they were actively considering investing in clean coal technology. RWE, E.on and Vattenfall are among the European utilities companies planning to build clean coal plants, possibly including carbon capture and disposal.

### **Indian energy sector needs \$10 billion of private investment (India)**

India will need US\$9-10 billion of private investment in the energy sector over the next five to six years to bridge the demand-supply gap, according to consulting firm KPMG. In order to attract and sustain private investment, the government will have to evolve an energy policy framework with clarity in matters such as energy pricing, market structure, cross-border investments and imports and exports of energy products.

KPMG estimates that since the country's energy requirements could jump four-fold over the next 25 years, the government should enter into partnerships with key nations to diversify its energy supply base and improve long term supply arrangements. The report said India's mineable coal reserves could be exhausted in about 40 years. The report favoured deregulating the coal sector and setting up an independent body to govern investments in the sector.

### **Sarawak builds second coal-powered electricity plant (Malaysia)**

Sarawak will have its second coal-powered electricity generation station following the plant in Sejingkat, Kuching. Sarawak Enterprise Corporation Berhad (SECB) has awarded the project to China National Machinery and Equipment Import and Export Corporation (CMEC).

The power plant, with two boiler turbines generating 135MW, will be completed in 30 months. It will be connected to the new grid along the Balingian-Sarikei coastlines beside the main grid supplying power to about 30 towns in Sarawak. The power plant would be the beginning of a change in the social economic development in areas around Mukah and create more job opportunities for the locals.

### **Focus on coal energy urged (Pakistan)**

The State Bank has suggested that the policymakers must concentrate on increasing the supply of energy from coal, which it said was the "most neglected source of energy" in India. In a special report on the energy sector in the SBP's second quarterly report, the central bank projected energy consumption in Pakistan would be about 150 million tonnes of oil equivalent (Mtoe) while net supply from indigenous sources would be 103Mtoe by the year 2020.

It is estimated that the country would face a shortage of 31% of energy in the foreseeable future which would seriously affect the balance of payments position and make it difficult for the economy to continue to move on the present growth trajectory.

### ***GVM acquires coal deposit in Limpopo Province (South Africa)***

GVM Metals Ltd announced that negotiations have now been completed to acquire a substantial open cut coal deposit in the Limpopo province of South Africa. Funds for the acquisition of a 74% interest in the permits will be raised by a share issue equivalent to a 67% increase in the number of GVM shares. The acquisition is subject to a number of conditions including the consent of the Minister of Mines to the transfer and shareholder approval.

### ***Power station heralds new start for coal (UK)***

Electricity generator RWE has announced plans for a pioneering clean coal power plant at Tilbury on the Thames estuary, heralding a new beginning for coal-fired generation. Electricity generators are turning to clean coal technologies both to wring greater efficiencies from their plants and to respond to tightening environmental regulation.

The project is aimed at reducing the firm's CO<sub>2</sub> emissions ahead of the forthcoming large combustion plant directive from the EU, which will restrict emission levels from heavy industrial sites. RWE believes that the plant could reduce CO<sub>2</sub> emissions by up to 90% compared to conventional coal-fired facilities. The project would be likely to cost around US\$1500 million and could be commissioned by 2016. RWE's study will also look into supercritical plant technology together with carbon capture and storage systems.

This willingness to reconsider coal power may have been helped by the soaring price of wholesale gas in recent months, while the big European players like RWE and E.ON continue to operate several coal-fired plants on the continent. Britain produces about 20Mt of the 50Mt of coal it consumes each year.

### ***Drilling programme for coal bed methane (USA)***

Canary Resources Inc. announced it has launched its drilling programme for coal bed methane (CBM) in the Eastern Forest City Basin of Kansas and Missouri. The company has nine wells, which are presently shut-in pending pipeline connection. Initial indications are positive: all of these wells have good gas shows and are expected to be commercially productive.

Canary Resources Inc. is an independent oil and natural gas company engaged in acquisition, exploitation, production and development of oil and natural gas properties. Canary has an active leasing programme and farm-out agreements covering acreage in four counties in Kansas and Missouri, for which it is the operator. It plans to drill numerous shallow CBM gas wells in these areas on 40 acre spacing or less, at depths of between 200 and 300m.

### ***Peabody outlines plan with clean coal technologies (USA)***

Peabody Energy outlined a plan to enhance US energy security, reduce reliance on foreign oil and natural gas, and lower energy costs. The coal producer said that doubling the amount of coal used annually for clean electricity, natural gas, transportation fuels, H<sub>2</sub> and ethanol over 20 years would drive down energy prices 33%, create 1.4M jobs by 2025 and provide a \$3 trillion net-present-value economic infusion.

The US Energy Information Administration (EIA) projects that energy consumption will increase 27% through 2030. Substantial coal reserves to meet these growing needs are available in more than 25 states, allowing for widespread coal production, liquefaction and gasification. As a result, the standard of living for all Americans will increase due to lower energy prices, a surge of industrial activity and creation of wealth. America has enough coal reserves to support this robust energy use for more than a century.

### ***Study of US power company emissions has good and bad news (USA)***

A new report evaluating air pollution trends among the 100 largest US power producers (generating 88% of the nation's electricity) shows that emissions of SO<sub>2</sub> and NO<sub>x</sub> have fallen markedly (by 44% and 36% respectively) between 1990 and 2004, largely as a result of stricter pollution control standards enacted in the 1990 Clean Air Act amendments.

However, CO<sub>2</sub> emissions increased (by 27%) over the same period and the report predicts a bigger CO<sub>2</sub> increase in the years ahead due to an unprecedented surge of new US coal plant proposals. There are currently more than 130 new coal plants proposed across the US and the Energy Information Administration (EIA) projects a 66% increase in coal based power production and a 43% increase in CO<sub>2</sub> emissions by 2030. The EIA projection assumes no controls on CO<sub>2</sub> emissions at the power plants.

In the absence of federal regulations, business uncertainty is growing as more US states and regions move to enact their own limits on CO<sub>2</sub> emissions from power plants. The US government has opted for voluntary controls on CO<sub>2</sub>, but last year the US Senate adopted a resolution calling for mandatory emission limits.

## TECHNOLOGY & OTHER NEWS

### ***Statoil and Shell set the world's biggest CO<sub>2</sub> seabed plan (Norway)***

Energy groups Statoil and Shell have announced a plan for the world's biggest scheme to bury industrial combustion gases beneath the seabed in a US\$1.2-1.5 billion project off Norway. Under the scheme, due to start in 2010-12, Statoil would capture CO<sub>2</sub> from a 860MW gas fired power plant to be built in mid-Norway. The CO<sub>2</sub> would then be piped to Shell's Draugen field off Norway – and later also to Statoil's Heidrun field – and injected into subsea reservoirs to force oil to the surface.

### ***Yantai IGCC Project – H<sub>2</sub> production and CO<sub>2</sub> removal and sequestration (UK)***

IEA Environmental Projects Ltd has entered into a contract with the State Grid Xin Yuan Company Ltd to implement a World Bank funded study designed to assist in enhancing take-up of IGCC. The major objectives of the study are: a) to analyse and assess the potential for gasifier/IGCC systems, including the cost and cost-effectiveness of each likely conceptual scheme; b) to assess technology readiness for H<sub>2</sub> production, CO<sub>2</sub> removal and sequestration from (H<sub>2</sub> based) syngas, and c) to identify and define a small scale pilot test facility for producing H<sub>2</sub> from an O<sub>2</sub> blown coal gasifier slip stream at the Yantai IGCC plant, extracting CO<sub>2</sub> from the resulting H<sub>2</sub>-rich syngas, and sequestering the extracted CO<sub>2</sub>.

### ***Completion of first phase of 'H<sub>2</sub> from Coal Programme' (USA)***

Startech Environmental Corporation recently announced that it has successfully completed Phase One of the two-phase programme for the US Department of Energy (DOE) focusing on the production of Plasma Converted Gas (PCG) from processing coal and municipal solid waste for the production of H<sub>2</sub>. Phase Two, now in progress, is focused on the separation of H<sub>2</sub> from the PCG synthesis gas mixture using the company's StarCell system.

H<sub>2</sub> produced from coal and wastes using Startech's system can be used to produce electricity while minimising emissions of pollutants and greenhouse gases.

### ***Twelve sites proposed for FutureGen plant (USA)***

Twelve sites in seven states (Illinois, Kentucky, North Dakota, Ohio, Texas, West Virginia, Wyoming) were named in early May as candidates to host the US\$1 billion FutureGen power plant, a revolutionary public-private venture that could usher in a new era of nearly pollution-free energy from coal. It will use the emerging technology of integrated coal gasification combined cycle to generate 275MW. The H<sub>2</sub> it produces would be used in power generating turbines or fuel cells, or potentially in the future as a clean fuel for a new generation of vehicles. Trapping and permanently storing CO<sub>2</sub> emissions deep underground will be a key feature of the FutureGen plant, along with other cutting-edge techniques that could virtually eliminate other emissions from the plant.

The 12 sites were submitted in response to a public Request for Proposals issued by the FutureGen Alliance, a group of coal companies and electric utilities partnering with the US Department of Energy to design and build the plant. The Alliance plans to deliver a list of finalist sites to DOE following a rigorous evaluation based on criteria developed jointly by the Alliance and DOE. The Alliance's selection of a final site is scheduled for around September 2007 and plant start-up is planned for 2012.

### ***Chemists find more efficient coal-to-diesel conversion (USA)***

US scientists say they have found a way to boost the efficiency of a 90-year-old method of converting coal into synthetic diesel fuel. The two-step chemical process, developed by chemists at Rutgers University in New Jersey and the University of North Carolina, converts some of the waste product from the original process into usable diesel.

The researchers said their work could reduce US dependence on oil imports for its energy reserves. They added, however, that their research is still in the early stages, and improvements to their methods are needed before they can be put into practice. The new process, described in the journal *Science*, uses two catalysts to convert medium-weight hydrocarbons into useful products. The first catalyst removes H<sub>2</sub> from the molecules, converting them into olefins, highly reactive chemicals with carbon-carbon double bonds.

The second catalyst "scrambles" the carbon bonds through a process called olefin metathesis, causing the molecules to rearrange themselves. The discoverers of this reaction, a group of American and French chemists, received the Nobel Prize for chemistry in 2005. The first catalyst then replaces the H<sub>2</sub> atoms, converting the olefins back into usable

hydrocarbons. The researchers say the reactions involved in their new process are selective and create usable molecules from the medium-weight hydrocarbons that used to be considered byproducts of coal conversion.

### **Experiments examine H<sub>2</sub> production benefits of clean coal burning (USA)**

Sandia National Laboratories researchers are studying the burning characteristics of coal to prepare the way for the coming of a H<sub>2</sub> economy. Coal is considered as the leading contender to provide a H<sub>2</sub> source in the near term.

Sandia is involved in a number of experiments for the DOE to optimise the combustion of coal to produce the most energy and the least possible pollution. While traditional coal combustion can produce emissions, modern plants can meet environmental regulations for burning coal cleanly. As the costs of competing fuels (particularly natural gas) climb, burning clean coal becomes cost competitive.

When the possible benefits of separating and storing CO<sub>2</sub> emissions from the power plant stacks are taken into account, coal looks very promising for generating both electricity and H<sub>2</sub> to provide a bridge to future technologies.

This 6-month project is being undertaken in association with the Electric Power Research Institute in the USA. The contract will be administered by IEA Clean Coal Centre.

### **World Bank will still fund coal despite climate change concerns**

Coal power plant projects in the developing world will continue to receive significant funding from the World Bank, in spite of concerns over climate change.

At its next meeting, the World Bank will discuss an investment framework for low-carbon energy, pledged under the Gleneagles plan of action for climate change agreed in July 2005 by the Group of Eight leading industrialised nations. The draft framework is intended to "accelerate investment so that developing countries can meet energy demands for growth and poverty alleviation in an environmentally sustainable way".

Clean coal technologies such as supercritical boilers in power stations, the gasification of coal, and the capture and storage of CO<sub>2</sub>, would reduce environmental impacts.

## **IEA-CCC Reports**

### **Financing clean coal technologies**

This report addresses the difficulty in obtaining financing as one of the key impediments to the deployment of advanced clean coal technologies (CCT). This is primarily due to the high initial capital costs of these projects relative to more conventional technologies or other feedstocks. Several CCT are near commercialisation, but do not yet form a significant share of new power generation projects. Contractors lack significant experience with CCT at commercial scale and few will guarantee performance. In developing countries, such as India and China, additional concerns about off-taker credit quality, stability of regulatory environment and enforceability of contracts further reduces the flow of capital to CCT projects. The global banking industry reduced its overall appetite for power finance in the early 2000s, due to poor performance of loans to the merchant power producers and the deteriorated credit quality of many investor owned utilities.

Another key impediment to deployment of advanced energy technologies is the lack of R&D spending in the sector. Government spending on energy R&D for ten of the largest developed countries dropped from US\$16 billion in 1985 to less than US\$10 billion in 1995 (1995 \$). More recent data show a continued decline in this spending level. Even when including the private sector, energy is the lowest industry sector in R&D spending relative to overall sales, with the energy sector spending less than 1% of net sales on R&D, in contrast to other industry sectors spending in the 6–11% range.

The next decade represents a critical period for moving forward with more advanced CCT. The report concludes that both governments and private firms have an important role to play in encouraging investment in CCTs. Governments can provide tax incentives, loans and guarantees, grants, and rate/price supports to encourage investment. Regulations and environmental controls are also needed to achieve national and global environmental policy objectives. The private sector must focus attention on making the newer technologies perform up to standards to ensure success of the next stages of commercialisation.

### **Life extension of coal fired power plants**

Large coal fired generating units are usually designed to operate with a minimum of modification for at least 25 years. Yet, units exceeding 25 years operational service today account for more than 45% of coal fired power generating capacity. It is standard procedure to extend the life of a power plant to 40 years, and some units have operated for

more than 50 years. This is achieved by refurbishing boiler parts, upgrading the turbines, and adding flue gas cleaning to meet new emission regulations. For many older and smaller units, life extension would be disproportionately costly and the practice is more commonly applied to larger units.

The factors affecting strategic decisions about plant life extension will be weighed differently depending on local legislation and market competition, and also depending on the availability of existing and cheaper plant with higher efficiency and possible alternative fuels.

Improving the efficiency of use of fossil fuels is one of the primary targets to achieve CO<sub>2</sub> emission reduction. Coal fired power stations based on pulverised coal combustion account for about 38% of global power generation. It is estimated that the worldwide average net efficiency of coal power stations is below 32%, while new units using supercritical steam conditions can reach thermal efficiencies greater than 46%.

### **Coalbed methane emissions - capture and utilisation**

Methane can be obtained from coal seams in a concentrated form, for example from virgin coal beds (VCBM), from well-sealed abandoned mines (AMM) or from undisturbed mines prior to mining (CMM). It may also arise in a more dilute form from working mines and mine ventilation air (VAM). The more concentrated the methane, the more valuable it is as a fuel and so mining activities are now being altered to enhance the recovery of methane before, during and after mining of the coal. Drilling and capture techniques are evolving to maximise methane capture. The possibility of replacing the methane in coal seams with CO<sub>2</sub> is also being evaluated as a capture and storage option with huge significance and future Kyoto Protocol investment possibilities.

Despite the obvious advantages to using methane from coal seams to produce energy, relatively few projects have been established. In some cases, the barrier to new projects is simply a lack of available knowledge and experience in CBM/CMM capture and utilisation. In other situations it is a problem with the legal ownership of the gas which halts new projects. Taxes and royalty fees can also be prohibitive in some situations. However, many countries are now waiving such fees, clarifying and even changing legal and ownership rights to promote CBM/CMM projects.

Various international partnerships aim to disseminate information and match CBM/CMM projects with developers and financial investors. This new IEA-CCC report reviews the different project types and their potential for use in different countries around the world. It also reviews the different market mechanisms which may help promote the use of this valuable energy source.

### **Other reports**

A new report examines the role of coal chlorine on the speciation of mercury in coal and biomass combustion flue gas. Another is a review of coal Research, Development and Demonstration in Australia. Yet another outlines the use of forestry offsets for CO<sub>2</sub> emissions from the coal industry. The website ([www.iea-coal.co.uk](http://www.iea-coal.co.uk)) also has links to a conference covering the latest developments in emissions monitoring equipment and techniques. Future IEA-CCC reports will cover recent developments in fluidised bed combustion, assessing public attitudes to coal and a review of coal resources for power generation in China.

## **EVENTS**

The 8<sup>th</sup> Annual New Zealand Energy summit, Duxton Hotel Wellington, 17-19 July 2006. Tel: 09 912 3616 Fax: 09 912 3617 Email: [register@conferenz.co.nz](mailto:register@conferenz.co.nz) Internet: [www.Conferenz.co.nz](http://www.Conferenz.co.nz)

GHGT-8 International Conference on Greenhouse Gas Control Technologies, Trondheim, Norway, 19-22 June 2006. GHGT-8 Secretariat, Mrs. Mari Saetebakk, NTNU videre, PAVILION A, Dragvoll, 7491 Trondheim, Norway. Tel: +47 73 59 52 65 Fax: +47 73 59 51 50 Email: [info@ghgt-8.no](mailto:info@ghgt-8.no) Internet: [www.ghgt-8.no](http://www.ghgt-8.no)

China power conference Shanghai, China, 4-6 Jul 2006 Aaron Anstey, PennWell Publishing (UK), Warlies Park House, Horseshoe Hill, Upshire, Essex EN9 3SR, UK Tel: +44 1992 656 614 Fax: +44 1992 656 704 Email: [attendingchina@pennwell.com](mailto:attendingchina@pennwell.com) Internet: [www.powerinchina.com](http://www.powerinchina.com)

Power-Gen Asia 2006 conference, Hong Kong, China, 5-7 Sep 2006, Vanesa Martinez, PennWell Publishing (UK), Warlies Park House, Horseshoe Hill, Upshire, Essex EN9 3SR, UK, Tel: +44 1992 656 614, Fax: +44 1992 656 700, Email: [paperspga@pennwell.com](mailto:paperspga@pennwell.com) , Internet: [www.powergenasia.com](http://www.powergenasia.com)

Conference on clean coal - securing the future, London, UK, 18-19 Sep 2006, Allison Lindsay, Coaltrans Conferences, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8186, Fax: +44 20 7779 8946, Email: alindsay@euromoneyplc.com, Internet: [www.coaltrans.com/](http://www.coaltrans.com/)

2nd Coaltrans Japan, Tokyo, Japan, 20-21 Sep 2006, Allison Lindsay, Coaltrans Conferences, Nestor House, Playhouse Yard, London EC4V 5EX, UK, Tel: +44 20 7779 8791, Fax: +44 20 7779 8946, Email: alindsay@euromoneyplc.com , Internet: [www.coaltrans.com](http://www.coaltrans.com)

23rd annual international Pittsburgh coal conference, Pittsburgh, PA, USA, 25-28 Sep 2006, Crystal M. Jones, Conference Secretary, International Pittsburgh Coal Conference, University of Pittsburgh, 1249 Benedum Hall, Pittsburgh, PA 15261, USA, Tel: +1 412 624 7440, Fax: +1 412 624 1480, Email: pcc@engr.pitt.edu, Internet: [www.engr.pitt.edu/pcc](http://www.engr.pitt.edu/pcc)

COAL21 conference 2006, Gold Coast, Qld., Australia, 10-11 Oct 2006, The Meetings Manager, Level 12, 179 Elizabeth Street, Sydney, NSW, Australia, Tel: +61 2 9264 1677, Fax: +61 2 9264 1666, Email: meetings@tmm.com.au , Internet: [www.tmm.com.au](http://www.tmm.com.au)

World energy congress Rome, Italy, 9-15 Nov 2007 Mike Treacher, PennWell UK Office, PennWell House, Horseshoe Hill, Upshire Essex EN9 3SR, UK Tel: +44 1992 656 636 Fax: +44 1992 656 700 Email: miket@pennwell.com Internet: [www.rome2007.it](http://www.rome2007.it)

#### **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.*