

COAL NEWS

NEW ZEALAND

L&M plans full feasibility study on lignite to diesel project

L&M Lignite Ltd plans to start a full feasibility study next year on a proposed US\$3.7 billion coal-to-liquids (CTL) plant on large lignite fields in Southland, South Otago or Central Otago.

L&M said the plant would use the Fischer-Tropsch process to produce 50,000 barrels/day of diesel, and possibly other end products like gasoline, jet fuel, methanol or other petrochemicals. L&M plans to consume the electricity produced within the project although this may change during feasibility studies.

The L&M CTL plant would produce about 18M barrels of high quality diesel/year over a 25 year project life. Between 12 and 17 Mtonnes of lignite would need to be mined each year to supply this plant.

Currently, L&M is completing initial analysis on 3 of its 5 permitted lignite areas: Ashers-Waituna near Invercargill in Southland, Hawkdun in Central Otago and Benhar near Balclutha, South Otago. Pre-feasibility studies are expected to be completed by the end of the year.

L&M coal granted coal exploration permit

L&M Coal Ltd has been granted a coal exploration permit at the northern end of the Waikato coalfields about 50km south of Auckland.

L&M said the Whangamarino permit would require a lot of work because only five drill holes have previously been drilled in the area covered by the permit. There is sparse drilling in the rest of the coalfield which extends south to Te Kauwhata. The in-ground coal resource at the Whangamarino coalfield is estimated to be about 20 Mtonnes mostly in the Kupakupa seam at depths of 100 to 300m deep.

Eastern plans to open Timaru plant for marketing coal

Eastern Corporation plans to establish a blending and distribution plant in Timaru between its newly acquired Southland and West Coast coal mines. The South Canterbury port could be considered for export of the company's coal.

Eastern also announced that it has completed the acquisition of the western Southland coal mining operations of Straith Industries, consisting largely of sub-bituminous thermal coal. Eastern acquired the Cascade mine near Westport and is currently exploring the nearby Whareatea West prospect for high quality coking coal for mine development.

Eastern has also purchased the Somervilles Fuel Centre in Washdyke, Timaru, for NZ \$2.4M and will rename this as Eastern Coal Supplies Ltd. The plant will be used as a coal stockpiling, blending and distribution point.

Eastern looks for further coal projects

Eastern Corporation Ltd (Brisbane) said it has several other operating projects under consideration in New Zealand in addition to developing its Whareatea West exploration permit on the Buller coalfield and its prospecting permits near Ohai in Southland. The acquisition of a second mine underpins a strategy of becoming a self sufficient business unit in New Zealand by opening further supply opportunities across a greater area of the South Island.

Eastern's wholly-owned subsidiary Rochfort Coal Mining Ltd holds the Whareatea West exploration permit and completed an 8-hole exploration

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drilling programme in June. Preliminary assaying results are encouraging but it will be some months before a full analysis is completed. At that stage a decision will be made as to commencing a feasibility study on developing the prospect as an export coking coal mine.

Southland's biggest lignite mine purchase agreed by Solid Energy

(from Solid Energy's press release)

Solid Energy has reached a conditional agreement to buy 100% of the privately owned Southland lignite producer New Vale Coal Company Ltd. New Vale, a long established family owned business, operates the New Vale Mine which is located on the Waimumu lignite field in Eastern Southland. The mine produces more than 200,000 tonnes a year, supplying local industry including Fonterra's nearby Edendale dairy factory.

A statement issued by Solid Energy and New Vale, said Solid Energy plans to continue New Vale's mining operations and to retain the current workforce of 30 people. Both parties have briefed customers and other key stakeholders in the area.

The purchase is subject to Commerce Commission clearance. In a separate statement the commission said that it will determine whether the acquisition has the effect of substantially lessening market competition.

Solid Energy has recently bought land surrounding its lignite mine near Matura which has been shut since 2000 when Carter Holt closed its Matura paper mill. Solid Energy is investigating reopening the mine on a larger scale. The Matura lignite field is the largest in New Zealand with an estimated in ground resource of about 3 billion tonnes.

Coal to cross conservation land

The Department of Conservation (DOC) has agreed in principle that a conveyor carrying coal to the Marsden B power station could cross a small part of the Ruakaka Conservation Area near Whangarei. Mighty River Power has been granted consent to re-fire Marsden B using coal carried on a conveyor belt from Marsden Point. The consent is being appealed through the Environment Court and is unlikely to be heard until next year.

The proposal to cross the land at two small points is now open to public submissions and DOC will hold a hearing. The Ruakaka Conservation Area has several pipelines on it already and is near the Whangarei District Council sewerage system.

Pike River Coal's new mine access tunnel to begin

New Zealand Oil & Gas said it is driving the access tunnel for its Pike River coking coal mine on the West Coast this year. NZOG's tunneling contractor, McConnell Dowell Constructors (NZ), has taken possession of the site and has erected scaffolding around the tunnel entrance to allow supports to be installed and the site to be prepared for the drill and blast operation.

Tunneling equipment is now onsite, including a purpose built twin boom jumbo drilling unit, together with offices, workshops and support equipment. The 4.5 m high x 5.5 m wide tunnel, to be constructed in hard rock using standard drill and blast techniques, is scheduled to intersect the first coal in the March 2007 quarter.

INTERNATIONAL NEWS

GVM to buy more coal assets (South Africa)

Australian-listed mining company GVM Metals said that it was in an advanced stage of talks to buy additional coal mines in the Limpopo province. In late August, GVM said it would acquire Motjoli Resources, its empowerment partner at the Holfontein joint venture in Witbank, giving it a 100% stake in the project and 50% in the Baobab project. It already has a 74% interest in the Limpopo coal project, whose inferred resource is 352 Mtonnes of both steam and metallurgical coal.

Coal boom fast-tracking rail upgrade (Australia)

The Australian Rail Track Corporation's (ARTC) plans to upgrade the northwest's rail system in time for the coal boom. The corporation's planning and development office detailed the plans, which include six possible alignment options over the Liverpool Range at a cost of between A\$167M and \$465M.

Though they have come up with the plan, ARTC made it clear the cost of the track upgrade and new alignment would be mostly funded by the coal industry. The list of upgrades on the Muswellbrook to Narrabri rail line includes plans to upgrade and extend loops to allow more trains of current and greater lengths.

'New frontier' may host up to 6 coal mines (Australia)

The Gunnedah coal basin has been labelled by industry experts as the NSW's "new coal frontier" due to a largely unexplored coal reserve of more than 1200 Mtonnes. These mines would employ up to 350 miners and the amount of coal being mined could double within 10 years.

An industry profile details 5 mine proposals, all at different levels of government approval, for areas near Gunnedah, Narrabri and Boggabri. The most recent mine to begin production in the Gunnedah Basin is the Tarrawonga mine, near Boggabri. Production at the mine is expected to hit about 250,000 tonnes of coal by the end of the year, and up to 1.5 Mtonnes by the end of 2007.

Asia's biggest coal gas project operational (China)

Central China's Henan Province has built Asia's biggest coal gas project amid efforts to provide cleaner energy and reduce pollution.

The second phase of the project started trial operation with daily gas output being 3 M m³. The first phase facilities had produced 850 M m³ of coal gas since starting operations in February 2001.

The project will have a positive impact on the environment as it will reduce annual SO₂ emissions by 76,250 tonnes and CO₂ discharges by 11,500 tonnes.

Coal exporters affected by reduction of VAT rebate (China)

China's Ministry of Finance announced that the value-added tax (VAT) rebate will be reduced (effective from mid-December). The move aims to readjust the export mix, thus easing the mounting trade surplus. Companies dealing in coal, steel, and textiles will be hit the hardest as tax on the exports of their goods is increased. Coal enjoyed an 8% VAT rebate, while the VAT rebate for steel, textiles, furniture, and non-ferrous metal products was between 2% and 6%.

Coal exporters are expected to be the most affected as VAT rebates for coal exports will be totally eliminated..

Surplus in coal supply (China)

The National Development and Reform Commission (NDRC) of China has warned of a surplus in coal supply if no measures are taken to check new investments.

By the end of last May, there were 2,743 coal-related investment projects being carried out in China, involving a total investment of US\$43 billion. These projects, when completed, will increase the country's coal production by 800 Mtonnes to over 2.1 billion tonnes. In 2005, the demand was 2.1 billion tonnes.

China seeks to cool coal-conversion industry (China)

The Chinese government will soon issue an industry policy to regulate the coal-chemicals sector, after a circular in August ordered local authorities to tighten their grip on the approval of new coal-to-petrochemicals projects in China.

Industry insiders familiar with the situation said the move aimed to ward off a potential investment spree as soaring global crude prices press China to turn to alternatives based on its abundant coal resources.

Investment in coal-chemicals projects in China has shown signs of overheating. Many proposed plants will face great risk in terms of both technical feasibility and capital investment if they don't put a brake on them. The upcoming policy aims to set the coal-chemicals industry on the right development track.

China Shenhua aims to become world's largest coal producer (China)

China Shenhua Energy Co. Ltd will increase its coal output by 15 Mtonnes annually within the next 5 years to make the company the world's biggest coal producer. By 2010, the company's annual coal output is expected to exceed 200 Mtonnes.

To reach the ambitious goal, Shenhua, the world's No. 2 coal producer, will spend about US\$2.5 to 3.1 billion between 2006 and 2008 on developing its core assets, including coal mines, railways, sea ports and power generators.

In the coming years, Shenhua will purchase from its parent company, the Shenhua Group, excellent assets in such sectors as coal mining and power generating, while seeking to acquire foreign companies in a "prudent and selective way".

Approval of construction of coal berths in Hebei (China)

The National Development and Reform Commission (NDRC) of China has approved construction of coal berths in north China's Hebei Province to make up the shortage of shipping capacity for 80 Mtonnes of coal in Qinhuangdao, Tianjin, Huanghua and Tangshan ports.

The coal berths will be built in Caofeidian, an island 80 km south of Tangshan in Beijing's neighboring province of Hebei, and in the Jingtang Port, which is about 95 km SE of Tangshan.

Coal power project redirected to fertiliser production (Ethiopia)

Prime Minister Meles Zenawi has taken the Yayu Coal Mine and Coal Fired Thermal Power Plant Complex Project away from the Ethiopian Electric Power Corporation (EEPCo) and reassigned it to its former overseeing office, the Coal Phosphate Fertiliser Complex Project (COFCOP).

The Prime Minister decided that COFCOP should immediately take over the Yayu Project from EEPCo and merge it with the fertiliser project that it has been overseeing since 2004.

In 2001, it was learned that Illu Ababora Zone in the Oromia Regional State, located 600km West of Addis Ababa had an abundance of coal resources. At the time, the government decided to open a project office under the Ministry of Trade and Industry (MoTI) so as to use this coal reserve for the production of urea fertiliser. The coal reserve was then handed over to EEPCo in 2005, so that it could use it as a power resource.

NEEPCO to put up coal-fired project (India)

North Eastern Electric Power Corporation is planning to set up a 4x120 MW greenfield coal-fired power project in Magherita, Tinsukia district of Assam. NEEPCO has started work on preparation of a detailed project report, and has applied for coal linkage from the local Makum coalfields. The proposed plant is estimated to require 1.7 Mtonnes/annum of coal.

The company has also initiated actions to secure various statutory clearances. The proposed plant will be just 45 km away from the company's existing plant at Kathalguri. The company plans to optimise the evacuation cost of power by linking the proposed transmission line for Magherita to the associated transmission system built by it for the Kathalguri plant.

Policy boost for coal sector (India)

The final recommendations for Integrated Energy Policy prepared by the Planning Commission are soon to be made public, keeping most of its controversial draft recommendations intact despite resistance from individual ministries.

The coal sector appears poised to both receive infrastructure status and be thrown open to market forces all within a year. A coal regulator is to be put in place to monitor coal prices (regulated for 80% of the coal), including coal sold by e-auctions and operation of captive coal blocks.

To fast track this, the Planning Commission is already preparing a white paper which is expected to culminate in the formation of a regulator within a 1-year timeframe. Slaughter mining, a rampant practice followed by captive coal miners, is seen to be in need of regulation as it leads to huge wastage. Competitive bidding of coal blocks after the amendment of Coal Mines (Nationalisation) Act 1973 is also recommended to increase the number and quality of players in mining.

Bumi Resources to sell coal mining units (Indonesia)

PT Bumi Resources will offer as much as a 20% stake at its coal mining units to potential investors after scrapping plans to sell them to an investment bank. Bumi will sell between 10% and 20% of coal units including PT Kaltim Prima Coal and PT Arutmin Indonesia.

Aquarian Gold agrees to acquisition of coal properties (Indonesia)

Aquarian Gold Corp. announced it has entered into an option agreement to have the right within 90 days to acquire Indonesian coal properties in the Riau coal basin of Sumatra covering 52,000 hectares.

The Board of Directors considers this an important strategic move by Aquarian into a growing and stable business sector. The three Sumatran coal basins have been significant producers of coal for over a century and contain the bulk of Indonesia's known coal resources. The growth of the Chinese economy, doubling in size each 6 to 7 years, is being reflected in increasing power demand, and Indonesian steam coals are playing an important role in meeting that increase in long-term demand.

Nine firms vie to set up coal-based power plant (Pakistan)

Nine major international companies are seriously competing to set up a 1,200 MW power plant near Karachi in response to the government's emergency efforts to overcome power shortages.

The nine companies have submitted their statements of qualifications to set up a 1,000-1,200 MW integrated imported coal-based power project near Karachi. The companies include Sumitomo of Japan, Siemens and Reinhaul of Germany, Al-Jumaih Group of Saudi Arabia, AES Corporation of the US and Malakoff of Malaysia.

The successful bidder will be required to carry out a detailed feasibility study and then negotiate the tariff. The government has officially conceded its failure in using indigenous coal reserves, although Pakistan has one of the world's largest coal reserves in Thar where efforts to generate electricity have not materialised yet. The PPIB said Pakistan was a coal-rich country with more than 185 billion tonnes of coal reserves, but the reserves had not been developed due to lack of infrastructure and other reasons.

GE to build coal power station (Poland)

US firm General Electric wants to build a gasified coal power station somewhere in Poland. The project plan for a 900 MW was announced during Polish Prime Minister Jaroslaw Kaczynski's visit to the United States. The power station would cost an estimated US\$1 billion and Poland was the ideal site for such an investment as it had a lot of coal and a growing need for electricity.

According to GE, gasified coal is made by heating coal until it turns into a gas, which is then more ecologically and economically efficient to burn for power generation than burning coal in conventional boilers. There are currently 62 gasified coal power plants in the world, using GE's technology.

Total to bring new coal unit on line (South Africa)

Total's South African coal unit would start production from a new mine east of Johannesburg by the end of November and was awaiting permission from the government to develop another operation. The new Forzando South mine is designed to yield 1.5 Mtonnes/year of coal. Total produces about 4 Mtonnes/year of coal from its South African mines.

Tender process under way for part in world's largest coal terminal (South Africa)

The tender process for the portion of the 9 Mtonnes/year capacity that will become available as a result of the phase five expansion project at the Richards Bay Coal Terminal (RBCT) is under way. RBCT said it has contracted Alexander Forbes as the independent adjudicator for the tender process and hopes to have completed the process by April next year.

Tunnel expansion spurs new coal project (South Africa)

Diversified miner Kumba Resources and Eyesizwe Coal said that the recent approval of the Richards Bay Coal Terminal Phase V expansion has paved the way for the construction of their 50:50 joint venture, Inyanda coal mine.

The companies said the construction of their Inyanda mine, which is situated near Witbank, in Mpumalanga, was expected to start in January 2007 and that the commissioning date was March 2008.

The Inyanda mine, a 1 Mtonne/year export facility, was approved 3 years ago by both the Kumba and Eyesizwe boards, but it was subject to the RBCT expansion's approval.

Developer buys stake in Australian coal company (South Korea)

South Korea's state-run resources developer said it has bought a 7.42% stake in Australia's largest coal mining company, Cockatoo Coal Ltd. The US\$3.48M deal is expected to help South Korea secure a safe supply of bituminous coal that is used to generate 40% of South Korea's electricity.

New coal plants to provide affordable energy (USA)

The National Organization for African Americans in Housing (NOAAH), a membership organisation of public housing officials and a leading advocate for affordable housing and home ownership, is writing to local and state leaders urging them to support construction of 11 coal-fired plants in Texas. NOAAH said the power plants would bring affordable, reliable energy to low-income residents.

NOAAH says as a percentage of income, energy costs are four times greater for low-income citizens than for other Americans and almost 4M citizens have trouble paying their monthly electric bills. Low-income residents in Texas, especially those relying on government-funded housing, are desperate for affordable, reliable energy.

The organisation is getting involved because of what happened during the California energy crisis several years ago. Rolling blackouts and skyrocketing utility costs led to much suffering among the poor and it was the "perfect storm of

rising energy demand, corporate greed and government neglect". It also maintained that coal is the most proven, realistic, and practical solution to ensure adequate energy capacity is delivered to Texas as soon as possible.

KFx Inc. signs with Bechtel for coal plant designs (USA)

Clean coal manufacturer KFx Inc. said it has signed an agreement with engineering power house Bechtel Power Corp. to draw up standardised plans for the company's "K-fuel" manufacturing plants. KFx has a single prototype plant in Wyoming that began producing K-fuel for shipment this year. The agreement calls for creating standardised plans for manufacturing plants that can be replicated at various sites around the country.

The company hopes to have five to 10 new K-fuel plants operating in five years. KFx uses heat and pressure to change western coals, known for their comparatively high moisture and low heat content, into a "K-fuel", a more energy efficient fuel that emits smaller amounts of mercury, sulfur dioxide and nitrogen oxide when burned.

Coal-rich Zimbabwe faces shortages, imports coal (Zimbabwe)

Drastic coal shortages despite massive natural deposits have had a ripple effect throughout Zimbabwe's economy and ruined a deal to renovate the country's biggest steelworks. The energy crisis adds to the economic woes of Zimbabwe, which is already suffering from acute shortages of fuel and many basic commodities.

Zimbabwe has estimated reserves of 30,000 Mtonnes of coal, enough to last the nation 6,000 years at self-sufficient 1995 consumption of 5 Mtonnes a year, according to geological studies. The deposits are the biggest in quality coal in southern Africa. Daily power outages in homes and industries have been worsened by the closure of coal-fired generators across the country. Zimbabwe imports 40% of its power from its neighbours.

TECHNOLOGY & OTHER NEWS

Research and development needs for clean coal deployment

IEA Clean Coal Centre is seeking bids from interested parties wishing to undertake a study on behalf of the Clean Coal Centre on Research and Development Needs for Clean Coal Deployment.

The study will develop detailed supply chain descriptions (from fuel source to CO₂ sink) for each applicable plant configuration to identify the key elements required for the technology, where research data are available on these or are currently being developed, and where there are gaps that need to be addressed. The study will also include a rigorous analysis of the carbon reduction potential for each technology and the timescales associated with on-going developments and their ultimate full deployment.

A detailed analysis will be undertaken of the high level science and engineering skills required to support the development and deployment of clean coal technologies, with an associated assessment of where gaps in the supply of these skills are likely to arise and how these will be addressed.

U.S. Air Force to test coal-based jet fuel

The Air Force is soon to test a new jet fuel made from coal instead of oil. A B-52 bomber at Edwards Air Force Base in California is expected to take off with two of its eight jet engines burning a 50-50 blend of synthetic and oil-based fuel.

Research on the fuel project has been conducted at Wright-Patterson Air Force Base in Dayton. The goal is to develop, test and pave the way to commercialise the fuel. The research is focused on the Fischer-Tropsch process for producing synthetic kerosene from coal. The military wants a fuel that works with engines, fuel systems and supply infrastructure already in the field.

The Air Force said it burned 12 billion litres of jet fuel last year, some 57% of the Defense Department's total consumption.

Mercury monitor for testing at coal-fired power plant

Cemtrex, Inc. announced that its SM4 Mercury Monitoring system had been approved for testing at a coal-fired power plant in Tremble County, KY. The boiler exhaust flue gas has low temperature and high moisture, thus creating a wet stack condition.

Cemtrex's SM4 is being tested at this site and results will be published soon. Cemtrex has set up an advanced assembly line facility in Farmingdale, New York, and is planning to produce 200 Mercury Monitoring systems in 2007 thru 2009, as all coal-fired boilers have to come under compliance effective 1 January 2009.

Seismic surveys to determine viability of rock formations for CO₂ storage

Tapping into rock formations at sites thousands of feet deep, a government-industry team is using seismic testing to help determine whether those sites can serve as reservoirs to safely store CO₂.

The US-DOE's National Energy Technology Laboratory is sponsoring the tests in a programme to develop carbon sequestration technology as part of the President's Global Climate Change Initiative. The initiative is aimed at reducing greenhouse gas intensity (the ratio of greenhouse gas emissions to economic output) by 18% by 2012.

The seismic testing in the Appalachian Basin helps to transfer carbon sequestration technology from the laboratory to the field. It was recently conducted by the DOE sponsored Midwest Regional Carbon Sequestration Partnership at FirstEnergy Corp's R.E. Burger plant in Shadyside, Ohio, and in nearby areas.

New projects on alternate hydrogen production and utilisation

The US-DOE announced the selection of 6 cost-shared research and development projects that will aid in alternate hydrogen production and greater hydrogen utilisation.

The selections help to fulfill President Bush's Hydrogen Fuel Initiative which describes a hydrogen economy that minimises America's dependence on foreign oil, reduces greenhouse gas emissions, and provides funding for hydrogen research and development.

The 6 new projects are listed below.

1. Louisiana State University - In this project, researchers will develop a coal-based process for the conversion of syngas to ethanol and higher alcohols using rhodium-based catalysts. Clean coal-derived syngas will be produced using Conoco-Phillips' EGAS technology. The final step is the selective catalytic conversion to ethanol.
2. Abengoa Bioenergy R&D, Inc. (Missouri) - This project seeks to improve the catalytic conversion of coal-derived syngas into ethanol and investigate ethanol reformability to hydrogen. The goal is to design new catalysts for higher alcohol synthesis, with the research aimed at accelerating the crucial steps that limit the selective conversion of synthesis gas to alcohols, especially ethanol.
3. Energy Conversion Devices, Inc. (Michigan) – Will develop a low-cost method to convert small (less than 25 horsepower) gasoline internal combustion engines to run on hydrogen fuel, while maintaining performance and durability equivalent to the unmodified gasoline engine. There is a huge potential worldwide market for reliable, low-cost small engines with near-zero emissions in stationary and mobile applications including two- and three-wheeled vehicles, lawn and garden care equipment, and small back-up generator sets.
4. Electric Transportation Engineering Corporation (Arizona) – It will partner with Roush Industries (Michigan), Argonne National Laboratory (Illinois), and Sacré-Davey Innovations (British Columbia), to evaluate the durability of a proven hydrogen internal combustion engine design using both accelerated aging tests under laboratory conditions (maximum power and torque for 300 hours) and field tests in diverse fleets (24,000 miles and 1,100 hours of operation per vehicle). Results of the durability evaluation will be compared to current gasoline internal combustion engine standards, and recommendations to reduce durability risk factors will be developed.
5. Hythane Company, LLC (Colorado) - Three organisations, Hythane Company LLC and Hydrogen Components Inc. and the Engines and Energy Conversion Laboratory at Colorado State University will collaborate on this project aimed at acquiring three identical heavy-duty, spark-ignited natural gas engines and subjecting them to stationary testing. Two of the engines will be modified, one for operation on Hythane® (a hydrogen and natural gas mixture) and one for pure hydrogen operation. The modified engines will be optimised for emissions, efficiency, and power relative to the natural gas baseline, using the experience and intellectual property of the project team. All three engines will undergo durability testing to demonstrate their long-term performance.
6. Iowa State University - This project will develop a process that will convert syngas from coal into ethanol and then transform the ethanol into hydrogen. Investigators will first synthesise, characterise, and evaluate mesoporous manganese silicate mixed oxide materials supports for rhodium nanocatalysts. They will then construct and demonstrate two reactor systems: one for producing synthetic liquid fuel from a simulated syngas stream and one for evaluating ethanol reformability. The data gathered will be used to analyse the process and provide a preliminary economic evaluation.

Promotion of coal-based power generation technologies

Legislation designed to advance cleaner coal-based power generation and gasification technologies has received a strong response from the coal community, according to the US-DOE's Office of Fossil Energy. The expected result is increased energy security and improved environmental performance from the nation's most abundant energy resource.

The response flows from the Energy Policy Act of 2005 (EPAct), the first overhaul of America's energy policy since 1992. The Act focuses on clean energy, efficient energy use, energy conservation, and advanced technologies.

In signing the Act, the President said it "launches an energy strategy for the 21st century" and "will allow America to make cleaner and more productive use of our domestic energy resources, including coal, and nuclear power, and oil and natural gas. By using these reliable sources to supply more of our energy, we'll reduce our reliance on energy from foreign countries".

In February 2006, the Treasury Department and the Internal Revenue Service (IRS) issued guidance for tax credit programs under two separate IRS notices: Qualifying Advanced Coal Project Program and Qualifying Gasification Project Program. DOE's National Energy Technology Laboratory (NETL) is partnering with the IRS to evaluate proposed projects for technical and economic feasibility and for consistency with energy policy goals. Once NETL's review is complete, successful projects will be certified and recommended to the IRS. The IRS will then select projects for receipt of tax credits.

MOU signed on oxy-fuel demonstration project

CO₂CRC, along with other Australian clean coal research organisations and industry, recently signed a memorandum of understanding with CS Energy as a supporting research collaborator in the Callide A oxy-fuel demonstration project. Oxy-fuel combustion has the potential to allow for the capture of CO₂ from pulverised coal fired power stations. The technology involves burning coal in a mixture of pure oxygen and recycled flue gas, rather than air. This modification both reduces the overall volume of waste gas and increases the concentration of CO₂, making it easier and cheaper to capture and store this greenhouse gas.

Other advantages of oxy-fuel technology include: the potential to retro-fit it to existing coal fired power stations; significant reductions in other emissions such as oxides of nitrogen and sulphur; and significant reductions in the capital and operating cost of flue gas cleaning equipment for new coal fired power stations.

During the demonstration project around 90,000 tonnes of CO₂ will be injected and stored over a test period of three to four years. The area targeted for the geosequestration demonstration is the Northern Denison Trough gas field located approximately 300 km southwest of Callide in southeast Queensland.

Geosequestration regulatory framework in Australia

The first step toward the adoption of appropriate regulatory regimes for geosequestration in Australia has occurred with the Ministerial Council on Minerals and Petroleum Resources (MCMPR) endorsing a set of regulatory guiding principles. According to the Department of Industry, Tourism and Resources (DITR), the principles will provide industry with an investment climate conducive to the uptake of geosequestration or CO₂ capture and geological storage (CCS) and enhance community confidence in the technology to ensure integrity of abatement through long term storage of CO₂.

It is not intended that MCMPR endorsement of the principles requires jurisdictions to implement legislation. The principles are to be used as a guide in the event jurisdictions adopt CCS. To progress the implementation of the principles the MCMPR Contact Officers Group held a workshop in Adelaide last April to discuss the proposed regulatory framework. The workshop was attended by Commonwealth, Victoria, Western Australia, South Australia and Queensland government representatives and sought to discuss experiences with CCS legislative issues across jurisdictions, identify key issues associated with adopting an appropriate regulatory regime and agree to a framework model for Commonwealth legislation.

As an outcome of the workshop, the Group is working closely to develop discussion papers describing legislation relating to CCS in their jurisdiction. In keeping with expected timeframes, it was anticipated that amendments to legislation will soon be introduced to Parliament with associated regulations and guidelines developed by the end of 2007.

Australian-based scientists advise FutureGen

Two Australian scientists, CO₂CRC chief Dr Peter Cook and the Chief Executive Officer of the Centre for Low Emission Technology (cLET), Dr Kelly Thambimuthu, have been invited to advise the FutureGen Alliance and provide independent peer review on key issues. Dr Cook will advise on geosequestration and site characterisation while Dr Thambimuthu will advise on the design of the coal based, zero emission precombustion capture of CO₂ (Integrated

Gasification Combined Cycle) power plant for electricity and hydrogen production. The FutureGen project in the USA is the world's first zero emissions power plant that will produce electricity and hydrogen from coal while capturing and storing CO₂.

Both scientists attended expert group workshops in the USA this year. Dr Cook was part of the Subsurface Technical Experts Group, which reviewed and critiqued the siting process and the siting criteria for the facility. Dr Thambimuthu attended meetings of the power plant Technical Experts Group and reviewed the power plant design goals; the status of technologies offered by leading technology vendors; and developed potential power plant process configurations for further techno-economic evaluation.

Dr Cook said "Being part of the FutureGen project is very important to understanding the cost, the technology and the decision-making process involved in such project. This experience could be relevant to the CO₂CRC in participating in future Low Emission Technology Development Fund projects in which we are involved."

Dr Thambimuthu said that the building and operation of a state-of-the-art zero emissions, coal gasification based power plant with electricity and hydrogen production would be a significant step forward. "The planned FutureGen facility will make an important contribution for the implementation of more energy and cost efficient zero emission plants of the future. Important lessons are to be derived that will complement the efforts underway here in Australia by cLET, CO₂CRC and others on R&D and the demonstration and deployment of low emission technologies."

Denmark tests carbon capture

The world's largest pilot plant, for the capture of CO₂ from a conventional power plant, was opened in Denmark recently. It is the first plant in the world to capture CO₂ in the flue gases of a coal fired power station. The plant, located at the Elsam Power Station near Esbjerg will demonstrate new carbon capture technology, as well as storing the CO₂ emissions underground. The two-year project is part of the CASTOR (CO₂ from Capture to Storage) pilot project, a European initiative, involving industry partners, research institutes and 11 European universities, researching geosequestration. According to one industry observer: "The cost of conventional processes for CO₂ capture in the flue gases of large industrial facilities, already operational in Japan, is estimated at between €50 and €60 per tonne of CO₂. The Elsam industrial plant is expected to halve the cost per tonne, to between €20 and €30."

EVENTS

13-14 Nov 2006, 3rd session meeting of the United Nations Economic Commission for Europe Ad Hoc Group of Experts on Coal Mine Methane, Geneva, Switzerland, , Catherine Pierre, Industrial Restructuring, Energy and Enterprise Development Division, Palais des Nations, CH-1211 Geneva 10, Switzerland, Tel: +41 22 917 4140, Fax: +41 22 917 0038, Email: catherine.pierre@unece.org

15-16 Nov 2006, 9th session meeting of the United Nations Economic Commission for Europe Ad Hoc Group of Experts on Coal in Sustainable Development, Geneva, Switzerland, Catherine Pierre, Industrial Restructuring, Energy and Enterprise Development Division, Palais des Nations, CH-1211 Geneva 10, Switzerland, Tel: +41 22 917 4140, Fax: +41 22 917 0038, Email: Catherine.pierre@unece.org

13-14 Dec 2006, 2006 Coal trading conference, New York City, NY, USA, Teresa Coffey, 2890 E. Northern Avenue, Suite B4, Phoenix, AZ 85028, USA, Tel: +1 602 485 4737, Fax: +1 602 485 4847, Email: info@americancoalcoalouncil.org, Internet: www.americancoalcoalouncil.org/events/event120606.htm

15-17 May 2007, 3rd international conference on clean coal technologies for our future, Cagliari, Sardinia, Italy, Consulcongress Srl, Via San Benedetto, 88-09129 Cagliari, Italy, Tel: +39 070 499242, Fax: +39 070 485402, Email: info@cct2007.it , Internet: www.cct2007.it,

28-31 Aug 2007, International conference on coal science and technology: ICCS&T, Nottingham, UK, Prof. Colin E. Snape, Nottingham Fuel & Energy Centre, University of Nottingham, University Park, Nottingham NG7 2RD, UK, Tel: +44 115 951 4166, Fax: +44 115 951 4115, Email: Colin.snape@nottingham.ac.uk

10-14 September 2007, Call for papers – 24th Annual International Pittsburgh Coal Conference will be held in Johannesburg, South Africa. For a paper to qualify for acceptance, please submit a one-page abstract before 1st March 2007 to pitt2007@sasol.com or Coal processing abstracts to www.sacoalprep.co.za

9-15 Nov 2007, World energy congress, Rome, Italy, , 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

16-20 Nov 2008, 9th international conference on greenhouse gas control technologies, Washington, DC, USA, John Gale, IEA Greenhouse Gas R&D Programme, Orchard Business Centre, Stoke Orchard, CheltenhamGL52 7RZ, UK, Tel: +44 1242 680753, Fax: +44 1242 680758, Email: johng@ieaghg.org, Internet: mit.edu/ghgt9

FEEDBACK

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