

**The future of coal
in a cleaner world.**



Climate change is a reality and requires a global response. Yet we cannot address climate change and meet the global demand for energy by simply excluding coal. Coal is, and will continue to be, an indispensable part of the global energy mix.

If we are to meet the increasing global energy demands fuelled by the rapid social and economic progress of both the developed and developing world, we will need all forms of power generation – coal, oil, gas, renewables and nuclear.

As the world's largest exporter of thermal coal, I believe Xstrata Coal has both a right and a responsibility to proactively engage with Government, industry, the scientific community and environmental groups to help find a sustainable and financially viable solution to the issue of climate change.

I also believe we can lead by example to both developed and developing nations by demonstrating what can be achieved through financial, scientific and political investment in the reduction of greenhouse gas emissions and the development of zero-emission technology.

Although action is already being taken, much more needs to be done to first stabilise and then reduce carbon dioxide emissions from the use of coal and other fossil fuels.

For this reason, Xstrata Coal is committing millions of dollars to various initiatives across the globe to realise the deep cuts in emissions that are not only required, but achievable. We must reduce our greenhouse footprint.

Personally, I am pleased to continue to serve as an advocate for change within co-operative initiatives such as the Prime Minister's Emissions Trading Task Group, which united Government and industry to consider the broad implications of a potential global carbon trading scheme, and encourage the testing and application of low-emission technologies, including carbon capture and storage.

The future of coal in a clean world requires further research, considered debate, co-operation between stakeholders, ambitious targets and most of all, action.

Right now we have an opportunity to make a difference and I am pleased to present the following information outlining the proactive role Xstrata Coal is taking individually as a company and as part of the international collaborative effort to address climate change.



Peter Coates
Chief Executive

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The role of coal

Coal is an essential part of the world's energy mix and will remain so for many years to come.

In any discussion about climate change, greenhouse emissions and the role of coal in a cleaner world, it should be recognised that global energy demand is expected to increase by at least 60% by 2030, according to the International Energy Outlook (IEO) for 2006.

With much of the global increase in demand generated by the rapid social and economic growth of the developing world, the IEO also shows that by 2030, fossil fuels will remain dominant. Even with the growth in renewables, oil, gas and coal together account for 88% of the growth in energy demand to 2030.

As global energy demand increases, it is estimated the world's consumption of coal will at least double. Projections to 2025 indicate coal will maintain a significant 23% share of world energy consumption.

One of the key reasons for such a significant increase in the use of coal is the continued development of emerging economies such as China and India which are in periods of rapid economic growth

and, in countries like the USA and UK which are looking once again to their indigenous coal reserves to meet their energy security and demand issues.

Almost 40% of the world's coal production is consumed in China where coal consumption has doubled over the past five years to around 2.25 billion tonnes, driven by thermal coal demand.

World Energy Reserves

Why is coal still the fuel of choice despite the greenhouse implications? Simply, there is no real competitor in terms of cost and security of supply.

The issue of global energy security is now dictating the choices countries are making regarding their source of energy supplies. While the majority of world reserves of oil and gas are concentrated in two regions: Russia and the Middle East, coal is being mined in more than 50 countries. The IEO 2006 Report estimates total recoverable reserves of coal around the world at 1,001 billion tonnes – enough to last approximately 180 years at current

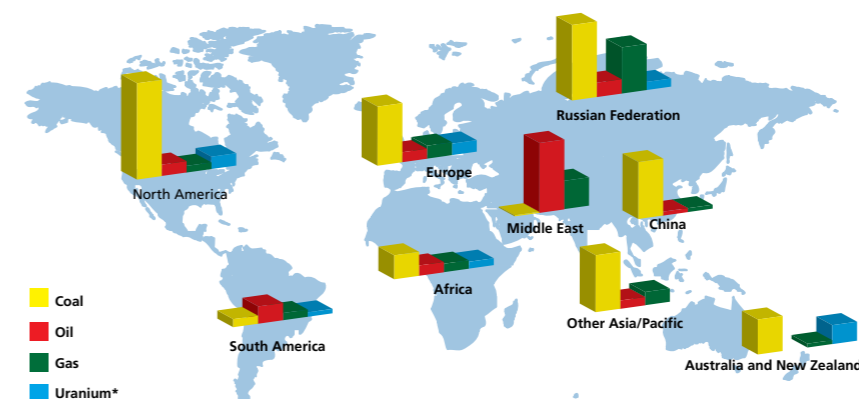
consumption levels. It is affordable and these reserves are located in regions generally free from political or civil unrest – such as North America, Europe, China and Indonesia.

The recognition that coal satisfies a number of important requirements for a reliable source of energy for the world, together with the requirement to reduce greenhouse gas emissions from power generation, has intensified research into and the development of clean coal technologies in recent years.

The development and implementation of breakthrough technologies across all energy sources offers the very real potential to reduce greenhouse gas emissions and improve energy efficiency, while providing a baseload of energy to support social development and economic stability across the globe.

The pathway to a near zero-emissions future is dependent upon all pillars of the mix, including wind, solar, biomass, coal, oil, gas and nuclear.

World energy reserves 2005



* Sources: BP Statistical Review 2005; WEC Survey of Energy Resources 2001; Reasonably Assured Sources plus inferred resources to US\$80/kg U 1/1/03 from OECD NEA & IAEA Uranium 2003; Resources, Production & Demand updated 2005; *energy equivalence of uranium assumed to be ~20,000 times that of coal.

Left
Collinsville open cut operation,
located in Queensland.



The pathway to a low-emissions future

The coal industry is actively involved in the global collaborative effort and long-term commitment towards achieving low or near zero greenhouse gas emissions from the use of coal in electricity generation.

We are now in a transition period from business as usual to a low or near zero-emissions future. The transition entails embracing new technologies in coal-fired power stations to reduce emissions significantly. These include integrated coal gasification combined cycle (IGCC), which turns coal into a gas and removes impurities before the gas is combusted, and oxy-firing, which enables the efficient capture and storage of carbon from burning coal. Ultimately, as the diagram below shows, coal can become an essential element in the production of hydrogen, as a near-zero emission power source.

The coal and power generation industries have a proven track record of developing technology pathways which have successfully addressed improved efficiency and environmental performance, in particular in substantially reducing emissions of sulphur dioxide (SO₂) and nitrous oxide (NO_x).

For example, the World Energy Council reports that in the 1950s in Europe 700g of coal were needed to produce one kWh of electricity. Today that figure is 300g.

Replacing old lower efficiency coal-fired generation with new state of the art IGCC, super critical and ultra super critical plants is making and will continue to make a similar and significant impact on greenhouse gas reductions.

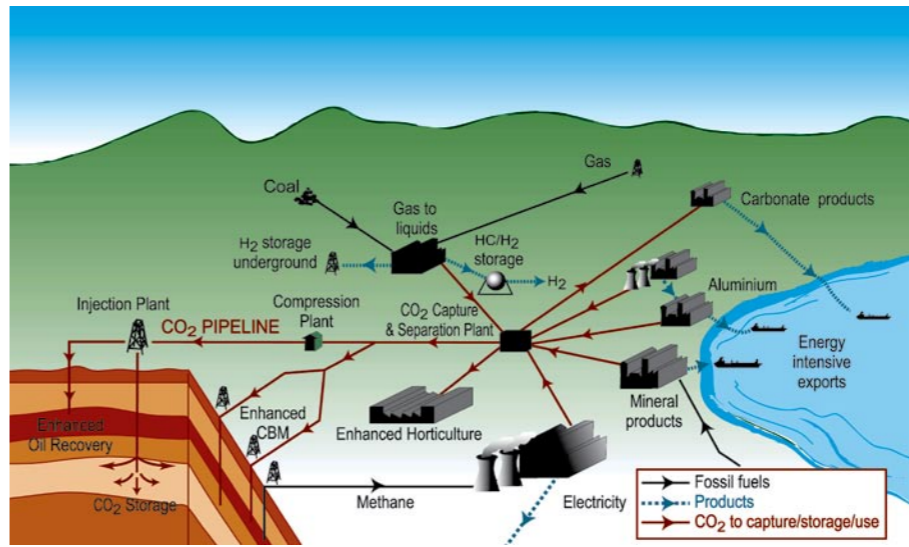
Improved thermal efficiencies and more efficient plants delivering incremental improvements in coal combustion play an important part in reducing emissions. Even more advanced technologies are emerging and more is being done in the area of carbon capture and storage, identifying sites for storage and lowering the cost associated with geosequestration.

The vision
Carbon Capture and Storage (CCS) is the key to a low-emissions future. Regarded by many as just a fringe idea only five or six years ago, CCS is now recognised as vital to making a real difference and providing the deep cuts required to emissions.

The Intergovernmental Panel on Climate Change special report of 2005 states carbon capture and storage has the potential for 2,000 Gigatonnes of CO₂ to be sequestered and CCS technologies will allow fossil fuels to be used with up to 90% less CO₂ emissions.

CCS is available now and is being applied on a commercial scale, for example, in Norway, Canada and the United Kingdom. According to the International Energy Agency, the deployment of CCS, along with more renewables, nuclear energy, and more efficient use of gas and coal, could significantly decarbonise the global electricity generation sector within 45 years.

The Vision



Left
Teralba electricity generation plant, New South Wales, fuelled by the capture and conversion of fugitive methane emissions.

Diagram provided by CO2CRC.

Our response

At Xstrata Coal, we acknowledge that climate change is a reality – a global issue requiring global solutions. We also believe more needs to be done to accelerate the arrival of low-emission technologies within the power generation sector.

We believe that action needs to be taken to first stabilise and then reduce CO² emissions from the use of coal and other fossil fuels to generate electricity. We also believe that if we are to meet the increasing demand for energy globally, there is a need and a role for all forms of power generation – coal, oil, gas, renewables and nuclear.

The issues associated with climate change are large and complex. No single person, company, government or country can make the significant cuts in emissions that are required. But by working together, reducing our energy intensities, conserving energy, increasing the use of renewables and by changing the way we use coal for power generation, we can all make a difference.

Already we are seeing increased global collaboration in the development, demonstration and commercialisation of low-emission technologies for the power sector and there is clear evidence this will continue. By pooling the financial, scientific, technology and engineering resources around the world, there will be substantial reductions in CO² emissions globally.

That is why we are playing our part to help fund the research, development and deployment of low-emission technologies. We are also striving to reduce our greenhouse footprint within our mining operations through the capture and use of coal seam methane to generate electricity and improving energy efficiencies.

Within Australia, Xstrata Coal and other coal producers have agreed to voluntarily levy their coal production, to raise up to \$300 million over the next five years to work with the electricity generation industry and the scientific community to develop technologies for reducing greenhouse gas emissions from coal-fired power stations.

The establishment of the COAL 21 Fund, as it is known, is a world first whole-of-industry approach to greenhouse gas abatement. The Australian Prime Minister has described the COAL 21 Fund as “a significant investment and a world leading initiative demonstrating the Australian coal industry’s leadership and commitment to reducing greenhouse emissions while maintaining a secure, reliable and affordable energy supply.”

This allocation of industry money is being matched by the state of Queensland where the Government is also providing \$300 million of public funds to advance clean coal technologies. A further \$80 million has been set aside in Victoria and on top of that, the Federal Government is providing \$500 million.

So within Australia, more than \$1 billion has been allocated to the research, development and demonstration of new technologies designed to reduce greenhouse emissions in the power sector.

Left
Forest plantation at the Bulga complex in the Hunter Valley, New South Wales.

Our key initiatives

Clean coal and greenhouse gas abatement technologies are rapidly being developed, tested and implemented within Australia and internationally.

Xstrata Coal is actively contributing financially to some of these ground-breaking initiatives.

FutureGen

Xstrata Coal is a member of the FutureGen Alliance in the United States, an initiative to build the world's first integrated near zero-emission coal-fuelled power plant. The company will contribute US\$25 million over the next 10 year towards the cost of this US\$1 billion project. When operational, FutureGen will be the cleanest fossil fuel fired power plant in the world.

The prototype plant will establish the technical and economic feasibility of producing electricity and hydrogen from coal, while capturing and sequestering the carbon dioxide generated in the process. The initiative is a government/industry partnership formed to pursue an innovative 'showcase' project focused on the design, construction and operation of a technically cutting-edge power plant that is intended to eliminate environmental concerns associated with coal utilisation. The project will employ coal gasification technology integrated with combined cycle electricity generation and the sequestration of carbon dioxide emissions. The project is led by an industrial consortium representing the coal and power industries.

Energy Efficiency

Xstrata Coal is actively involved in the Federal Government's Energy Efficiency Opportunities programme, implementing plans and measures to reduce the use of all forms of energy, not just electricity.

Working with the Government to help develop the initial program, Xstrata Coal continues to take a leading role in the testing and application of energy efficiency initiatives, providing cost savings and benefits for individual sites and the business overall.

The program addresses all energy use including stationary energy use (electricity, LPG, fuel oil etc) and transport energy use (diesel, petrol etc).

Oxy-fuel combustion

Oxy-fuel combustion is a clean coal technology which involves feeding pure oxygen into existing coal-fired power generators, to increase efficiency through recycling a proportion of the flue gases through the combustion chamber, and to produce a purer carbon dioxide gas, enabling effective collection and storage.

Xstrata Coal was a partner in a two year, \$2 million feasibility study into this technology at CS Energy's Callide plant in Queensland. We remain closely involved in this project which has now progressed to the demonstration phase and is already attracting international attention given its potential to reduce greenhouse gas emissions associated with the use of coal in power generation globally. One of the key benefits of this technology is its potential to be retrofitted to existing coal-fired power stations enabling the capture and ultimate storage of CO₂.

CCSD & CO2CRC

We are also financially supporting the work of both the Cooperative Research Centre for Coal in Sustainable Development (CCSD) and the CRC for Greenhouse Gas Technologies (CO2CRC). This is one of the world's leading collaborative research organisations focused on carbon dioxide capture and geological storage (geosequestration). Xstrata Coal is also directly involved in Australia's first carbon storage demonstration project, now underway in the Otway Basin of Victoria.

Left
Ulan coal stockpile, located in New South Wales.

Moving forward

We are committed to the abatement of greenhouse gases from our operations and to the development and implementation of action plans for energy conservation and increased energy efficiencies within those operations.

This is why Xstrata Coal is:

- A participant in the Australian Government's Greenhouse Challenge Plus programme. One of the planks of Xstrata Coal's greenhouse gas abatement strategy and Greenhouse Challenge Plus cooperative agreement is the capture and utilisation of methane in mine ventilation air and fugitive emissions from its operations;
- Capturing methane from old workings at our Teralba underground mine in NSW to an Envirogen power station on the site, generating electricity which is fed into the national grid;
- Working again with Envirogen at our Oaky Creek mine in Queensland with a 12MW onsite, gas-fired power station using methane extracted from the mine to generate electricity for supply into the national grid. The Oaky Creek power station was commissioned in 2006 and is expected to save around 341 000 CO₂ equivalent per annum, which is the equivalent of removing 78,000 medium sized petrol driven motor cars from the road each year;
- Investing \$15 million to conduct methane drainage trials at its underground operations at the Bulga Complex in NSW. These trials are designed to provide a safe working environment and identify technologies and processes required to help maximise the recovery and beneficial use of coal seam methane from that site;
- A benchmark participant in the NSW Government's Greenhouse Gas Abatement Scheme;
- Extracting and flaring methane gas from our United underground mine in NSW, reducing the amount of gas which would otherwise be detrimentally emitted into the atmosphere;
- Investigating technologies to oxidise methane in underground mine ventilation air; and
- Investigating the viability of native forestation projects on sites.



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Rehabilitation at the Rolleston coal site, Queensland.



12MW gas-fired power station using methane extracted from the Oaky Creek Mine, Queensland.

We appreciate your feedback.

For further information or to
share your views, please contact:

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