

RTCA Climate Change Action Plan

2007 Review



Rio Tinto Coal Australia (RTCA) is committed to addressing climate change throughout our business. This document summarises RTCA's vision, objectives, programmes and commitments to integrate climate change considerations into the business as well as provide a brief report on the successes the action plan delivered in 2007 in the following key result areas:

- *Researching and promoting clean coal technologies*
- *Improving energy use*
- *Designing our projects to recognise climate change risks and opportunities*
- *Raising awareness amongst key stakeholders groups.*

This document was prepared to report internally on the progress against the RTCA climate change action plan. It is not intended to be a position statement nor a summary of all activities that the company is doing. Further information about the RTCA activities with respect to climate change and energy management can be found on http://www.riotintocoalaustralia.com.au/ourapproach/897_climate_change.asp

The RTCA climate change action plan

In 2006 the Rio Tinto Executive Committee endorsed a climate change plan, which includes the requirement for business units and product groups to have documented three year work programmes addressing risks and opportunities supporting each of the three climate change themes; Reducing emissions from operations; Understanding and developing low emissions product pathways; Engaging with governments.

The RTCA climate change action plan (the plan) is designed to develop a whole of business process that enables us to deliver an effective work programme. It integrates climate change into our business processes and identifies links and collaboration opportunities within the Energy product group and other Rio Tinto business programmes.

The commitments and programmes summarised in this review document are part of a dynamic process that position our business to continue to assess and adopt new information, technologies and policies as they evolve in the short and medium term.

The RTCA climate change work programme, which is derived from the plan, is aligned with Rio Tinto's value creation vision covering operational performance, innovation, discipline, organisation, systems, culture, reputation and collaboration. Our work programme is driven by the following vision:

Our people and operations contribute to the solution for the challenge of climate change

Our plan, supporting the vision, has been developed from priorities identified in the initial risk assessment with a focus on the following four key result areas:

- Researching and promoting clean coal technologies
- Improving energy use
- Designing our projects to recognise climate change risks and opportunities
- Raising awareness amongst key stakeholders groups.

This document is the first review of the progress of the work programme and outlines RTCA's commitments, actions and achievements in our approach to the four areas of our plan.

Highlights of 2007

Clean Coal

- RTCA managed operations contributed \$5.6million to the COAL 21 Fund which commenced operation in 2007. The Fund supports the demonstration of low emission coal technologies through the Australian Coal Association's COAL21 programme.

Energy Management

- The RTCA wide energy management programme reported avoided emissions of 18,000 tonnes of carbon dioxide equivalents in 2007 (a conservative assessment). The reported savings represents a reduction of 1.7% of total emissions from site fuel and electricity use (1,072,600 tCO₂-e).
- More than 70 projects were tracked within the RTCA project centre.
- The RTCA capital expenditure and disposals application (CEDA) process was modified to include a mandatory sustainable development and climate change issues assessment as well as explicit disclosure of the energy, greenhouse and water impacts of the proposal.

Designing for the Future

- Mount Thorley Warkworth initiated a coal bed methane abatement pilot programme. The data collection stage has been completed and currently RTCA is proposing a 4 well pilot flare programme to progress this work in 2008.
- A cost of carbon was applied to financial assessments of the RTCA life of mine models – this price was also applied to relevant project evaluations.

Raising Awareness

- The RTCA climate change action plan launch was presented throughout the business at all sites, capturing approximately 80% of all employees.
- 80% of employees surveyed at the end of 2007 indicated they had heard about climate change at work - 17% more than the previous survey
- 80% of respondents of the same survey considered that RTCA was doing something about climate change - 20% more than the previous survey

Objective

Actively researching and promoting technologies that reduce CO₂ emissions from the use of coal.

Programmes

Our programmes in low emissions coal technology centre around:

- Supporting research to identify new technologies
- Uptake of the technology to change the way coal is burned
- Supporting a policy environment to enable this change.

Programmes include our support of the **Rio Tinto Energy Technology Group, Hydrogen Energy** joint venture, the **CO₂CRC** and **COAL21**. These programmes are **collaborative** and **consensus-building** bringing together participants from state and federal governments, the coal industry and electricity generators and research organisations.

2007 Key Outcomes

- RTCA managed operations contributed \$5.6million to the COAL21 Fund. The fund is to support the demonstration of low emission technologies for the use of coal. The contributions are a voluntary levy of 20 cents per tonne of product. 2007 was the first year of contributions to the fund with the commencement of the fund contributions commencing part way through the year.
- Rio Tinto joined with BP to create the Hydrogen Energy joint venture and announced the commencement of feasibility studies for the potential development of a A\$2billion (US\$1.5billion) coal-fired power generation project at Kwinana in Western Australia, designed to demonstrate fully integrated carbon capture and storage.
- RTCA hosted the Brisbane and Newcastle launch of Hydrogen Energy for employees, joint venture partners, community stakeholders and the media.
- CO₂CRC has moved the Otway carbon capture and storage project through many legal and policy requirements. RTCA is offering key technical and administrative support to the CO₂CRC Otway carbon capture and storage project.
- The Rio Tinto Climate Change Executive and Energy Technology Group have been active supporting broader energy issues while also maintaining communications and context with the RTCA climate change team.

Objective

Improve energy use at our operations, projects and supply chain, and embed the process into RTCA systems.

Programmes

Our energy management programme is designed to address, understand, prioritise and reduce our energy use. The first step involved undertaking **energy audits** at each RTCA operation. Each operation maintains a list of identified energy projects which have been consolidated into a **master list**, to enable group sharing and collaboration.

The business wide programme of **metering** for all equipment / facilities that use 10 per cent or more electricity or diesel will be developed. Common monitoring and reporting architecture will streamline **management prioritisation**. Other business systems, such as **capital expenditure and disposals applications** (CEDA), will be amended to capture energy savings in line with the various energy management philosophies.

The ongoing energy reduction programme is supported by a number of enabling programmes. These include **the utilisation of the Business Improvement Process** (BIP) and the annual planning process at site. The BIP **project centre system** will enable the capture and reporting of energy savings from all projects. **Metering, monitoring and reporting** will allow RTCA to better understand and therefore manage its energy use.

2007 Key Outcomes

- The RTCA wide energy management programme reported avoided emissions of 18,000 tonnes of carbon dioxide equivalents in 2007 (see project summaries on the next page). The reported abatement from the projects was a conservative evaluation, counting only verified savings from those projects that were tracked in project centre and would tend to under represent the actual savings achieved. As project centre is more fully implemented across the sites in 2008 we would expect to capture a greater proportion of energy saving projects
- All energy projects registered on the master list (and many other business improvement projects that include an energy or greenhouse gas component) were tracked using the RTCA project centre and reported using the improved energy report. More than 70 projects tracked were within the RTCA project centre. This is an important element of integrating energy projects into the business process.
- The electricity metering project was scoped, 'future-state' metering configuration for all RTCA sites and projects was agreed upon. The installation has been planned and reporting of retail metering points was engaged in various formats across the business.
- Hail Creek Mine has progressed a pilot for a fuel management system while the deployment of a fuel additive, a collaborative project with RTEA Jacob's Ranch, remains on hold.
- The CEDA process has been reviewed. It now includes the assessment of sustainable development criteria (including qualitative and quantitative water, energy management and greenhouse gas impacts or abatement opportunities) related to all projects with a capital application greater than \$A100,000.
- Energy metrics and efficiency drivers were investigated over the course of 2007 – the findings and identified gaps will be advanced in 2008.
- A multi-disciplinary energy champions community of practice that represents all operational sites, projects and key areas (business improvement, fuel management & environmental services) was developed. RTCA established a dedicated climate change team (Climate Change Specialist and Energy Management Advisor.) Together these functions have the task of facilitating the deployment of the energy management projects, a keystone of the plan.



Energy Management Projects

Energy & Greenhouse Savings Delivered by Site Projects

The RTCA wide energy management programme reported avoided emissions of 18,000 tonnes of carbon dioxide equivalents (tCO₂-e) in 2007 through the RTCA project centre.

The reported savings represents a reduction of 1.7% of total emissions from site fuel and electricity use (1,072,600 tCO₂-e reported through the S&E Survey).

These savings are reported as conservative, verified amounts – it is likely that actual savings from projects exceed the reported amounts. For additional information on the status of the energy management projects and the reported savings are located in the RTCA project centre.

Site Project Results Summary:

Mount Thorley Warkworth Projects

| | Plan | Actual | Actual vs Plan |
|------------------------------|--------|--------|----------------|
| GJ savings | 29,436 | 27,484 | -7% |
| t CO ₂ -e savings | 2,837 | 4,896 | 73% |

Hunter Valley Operations Projects

| | Plan | Actual | Actual vs Plan |
|------------------------------|--------|--------|----------------|
| GJ savings | 55,305 | 22,446 | -59% |
| t CO ₂ -e savings | 5,172 | 6,227 | 20% |

Bengalla Mine Projects

| | Plan | Actual | Actual vs Plan |
|------------------------------|--------|--------|----------------|
| GJ savings | 23,727 | 19,243 | -19% |
| t CO ₂ -e savings | 3,201 | 4,186 | 30% |

Blair Athol Mine Projects

| | Plan | Actual | Actual vs Plan |
|------------------------------|--------|--------|----------------|
| GJ savings | 28,603 | 35,297 | 23% |
| t CO ₂ -e savings | 2,130 | 2,735 | 28% |

“Plan” refers to the initial 2007 projection in the climate change action plan (attachment 11 “Tracking Performance”)

While Kestrel & Hail Creek mines progressed various elements of their energy projects master list the sites did not record energy project savings in the RTCA project centre in 2007.



Designing for the Future

Objective

Design our projects, recognising risks from a changing climate and opportunities in a changing policy environment.

Programmes

Projects: Capturing energy ideas from projects to share across the business including collaborating with Rio Tinto Procurement and the Projects group linking ideas and **leading practice** from across Rio Tinto.

- Updating our **weather risk** profile to include latest credible information for projects
- Investigating new options to capture **coal bed methane** from underground and open cut mines
- Include a **price on carbon** for economic assessments
- Enhance our **product delivery** approach to include energy and water consumption.

Policy: Continue participation in Rio Tinto **climate change policy** initiatives and apply the detail to our business.

- Review the **capital approval procedures** to explicitly include consideration of climate change impacts and energy efficiency
- Drive **purchasing behaviour** consistent with long term reduction of greenhouse gas emissions
- Adopt **leading energy efficiency practices** in building and process design as well as in overall mining operations.

Markets: Continue **research into clean coal** and **carbon capture and storage** technologies.

- See clean coal key result area and programmes.

2007 Key Outcomes

- The Rio Tinto project evaluation guidelines referring to including the cost of carbon in financial assessments was applied in net present valuations for projects and in life of mine evaluations.
- All new projects have been scoped for appropriate levels of energy metering and monitoring as outlined in the energy management section.
- The Mount Pleasant project team has used various sustainable development assessment tools to assist in the decision making process for a number of critical elements, the outcomes of which have resulted in projected gains in energy and greenhouse emissions and a reduced overall footprint of the proposed operation.
- The Clermont Mine in-pit crusher and conveyor (IPCC) as well as a significant integration with existing infrastructure at Blair Athol Mine has greatly contained the overall energy and greenhouse 'footprint' of the project.
- Kestrel mine extension has developed a specific sustainable development plan which will assist in the deployment of energy management initiatives across the site. The plan includes specifications relating to high efficiency for heavy mobile equipment (HME), fixed plant and building design
- Inclusion of a coal bed methane flare within the scope of the approved Kestrel mine extension is a significant step for project design of the future and also identifies the co-generation opportunities at this site.
- Mount Thorley Warkworth has initiated a coal bed methane (CBM) abatement programme. In July 2007, the RTCA Investment Committee gave in-principle approval to a \$5.9 million CBM programme to be delivered in two stages. The data collection stage has been completed and currently RTCA is proposing a four well pilot flare programme to progress this work in 2008.
- The likely impact of an Australian emissions trading scheme to our markets and business has been conducted and verified, this work has been complimented by similar work undertaken by the Rio Tinto.



Awareness Raising

Objective

Raising awareness with our employees, the communities where we operate, our customers, governments, suppliers and the industry that this is an issue that requires us to change how we all currently operate.

Programmes

We have designed a **communications programme** that provides **consistent messages** for all our employees, supports the **energy use reduction** programmes and provides context for the broader societal issue. Demonstrating our commitment and actions to **external audiences** and seeking opportunities to work with them is an important part of awareness raising.

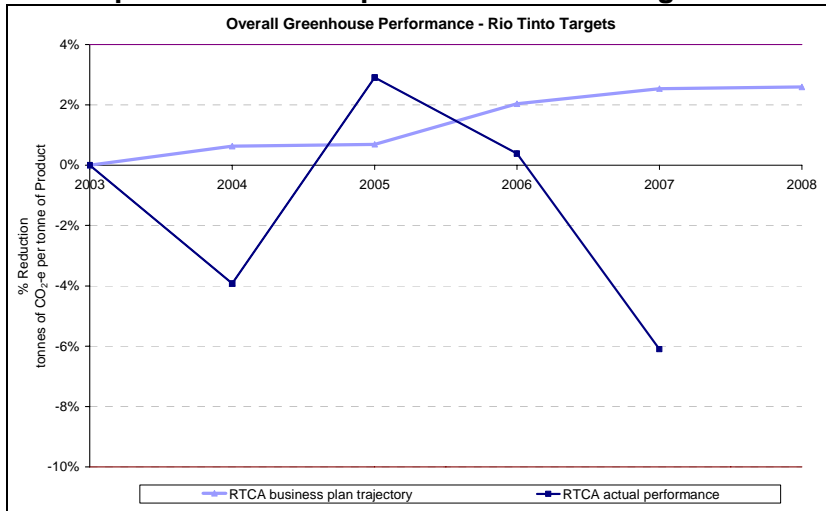
Examples of specific programmes include -

- Internal awareness raising presentations
- Internal communications programme including communications tools and regular features in *Mine Matters*
- Support Newcastle City Council's Together Today and *ClimateCam* programmes
- Consistent messaging at senior levels
- Participation in Rio Tinto communications task force
- Deliver 'what you can do/how to' information to employees and communities to reduce 'footprint'
- Engage with governments to develop an effective response to climate change
- Seek opportunities to raise awareness with industry associations and customers
- Support for COAL21 communications
- Ad hoc discussions with analysts, journalists, etc on 'what is clean coal' Develop external communication package of what RTCA is doing, including performance reporting and programmes.
- Energy/water efficiency included in the concept plans development for Lower Hunter Lands Project
- An annual report will be prepared to update on the progress of the plan
- Auditing will increase to help track our performance.

2007 Key Outcomes

- The RTCA climate change action plan launch was presented throughout the business at all sites capturing approximately 80 per cent of all employees.
- A brief climate change induction chapter has been prepared and communicated for inclusion in the site induction package.
- Key communication tools, such as the RTCA climate change leaders pack, a series of fact sheets and a DVD featuring the RTCA Managing Director, were developed to support the launch and implementation of the climate change action plan.
- Posters and *Mine Matters* stories encouraging employees to think about energy management and the choices they make to reduce greenhouse gas emissions were prepared by the communications team who have also been working with local newspapers to promote specific initiatives.
- A number of Community Consultative Committees were briefed on the overall RTCA climate change action plan and the efforts sites have taken to deliver results within the work programme.
- CSIRO and RTCA partnered to conduct a series of workshops in aid of establishing a baseline understanding of community perspectives to climate change and energy technologies within the Singleton and Muswellbrook communities.
- As part of the draft statement of commitments for Coal and Allied's Lower Hunter Lands' concept plans, a commitment to investigate sustainable alternatives for water provision and sewer treatment beyond *BASIX* requirements was explained. The *Beyond BASIX* approach to water use reduction will achieve an estimated annual water savings of 190.9 kilolitres per lot. In addition to this, the sustainable development plans include the following energy saving measures; 1kW photovoltaic grid interactive array, gas boosted solar water heating and gas oven and cook tops. Incorporating these measures are predicted, according to the *BASIX* Analysis tool, to reduce energy use by 60 per cent.
- An online survey was conducted to review 2007 awareness raising activities it received 590 responses, resulting in a 22 per cent response rate consistent with the previous survey. 80 per cent of respondents indicated they had heard about climate change at work - up 17 per cent on previous survey. 80 per cent of respondents said they thought RTCA was doing something about climate change - up 20 per cent.

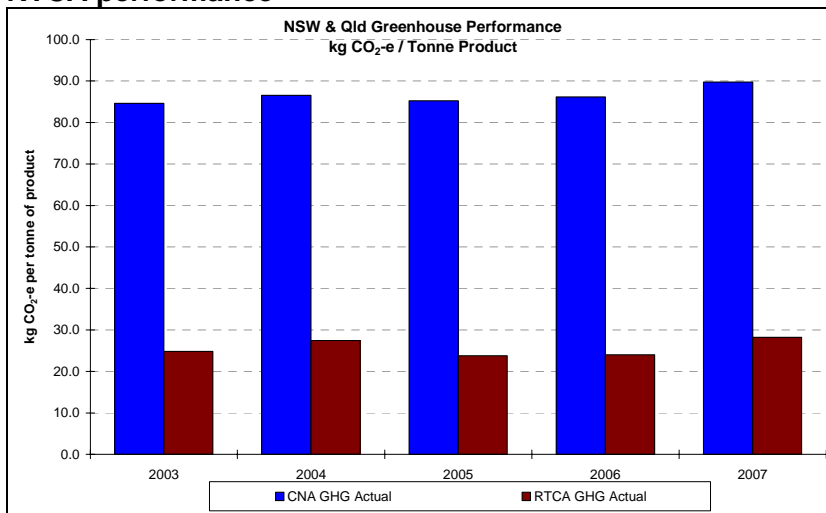
Greenhouse gas emissions - Saleable Product Basis Overall performance compared to Rio Tinto target



Overall, the RTCA actual GHG performance delivered a 38.48% increase versus the Rio Tinto target reduction of 1.74% relative to 2003.

The key drivers of our greenhouse gas emissions are the amount of coal exposed, which influences the coal bed methane figure (65% of RTCA emissions), and the amount of material moved which drives emissions related to electricity and diesel use. Significant changes in the business plan from 2003 to 2008 mask any energy reduction.

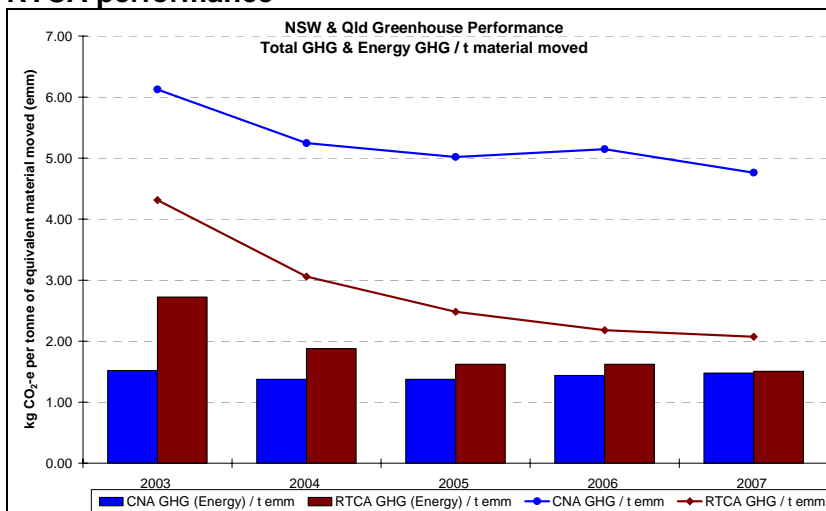
Greenhouse gas emissions - Saleable Product Basis RTCA performance



The greater understanding of drivers and potential improvement programmes will be used in the development of targets to integrate with business behaviour in the future.

The middle graph on this page shows the CO₂-e emissions per tonne of product. The main difference between Queensland operations and the higher values in NSW is due to the different emission factors we are required to use for the different states. We do not have enough data to know whether the factors are accurate and this is a current area of work.

GHG emissions associated with total emissions and energy (electricity and diesel) use - equivalent material moved basis RTCA performance



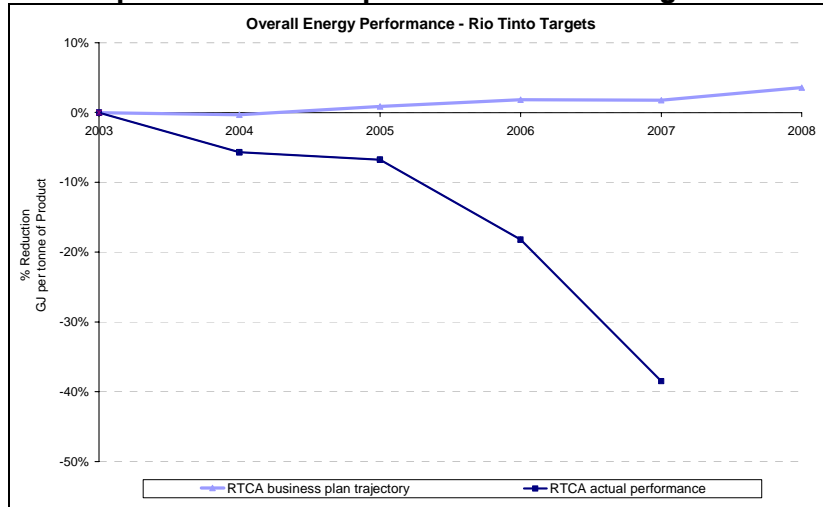
The third graph on this page shows the total emissions per tonne of material moved as a line series - This shows an improvement in performance over the past 5yrs. Energy emissions (electricity and diesel) are the major area where the operations can focus their improvement projects. The columns series show the performance associated with energy emissions on a tonne of material moved basis, this illustrates a decrease in the Queensland operations and constant performance at the CNA operations.

The Coal and Allied 2008 targets for the new metric are:

1.40 kg(energy)CO₂-e / t emm



Energy - Saleable Product Basis Overall performance compared to Rio Tinto target

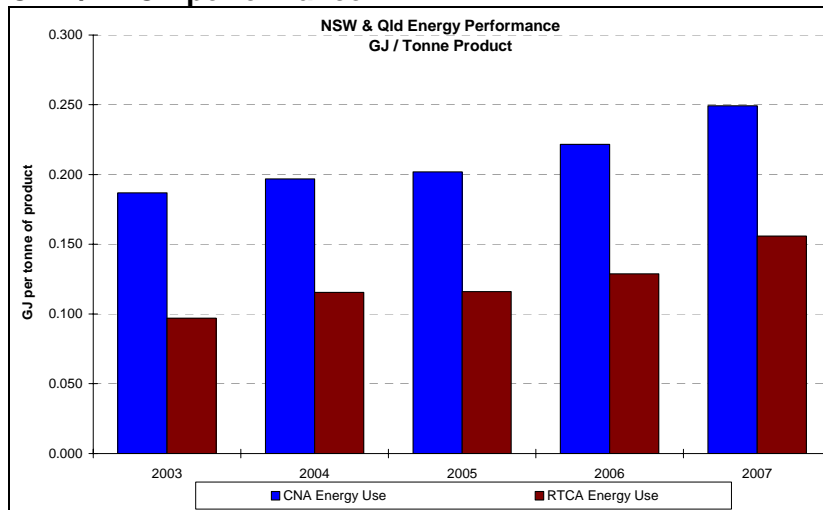


Overall, the RTCA actual GHG performance delivered a 38.48% increase versus the Rio Tinto target reduction of 1.74% relative to 2003.

The key driver for energy use, mainly electricity and diesel, is the amount of material moved.

While a number of operations reduced their total energy use in 2007 compared to 2006 energy use per tonne of product increased overall.

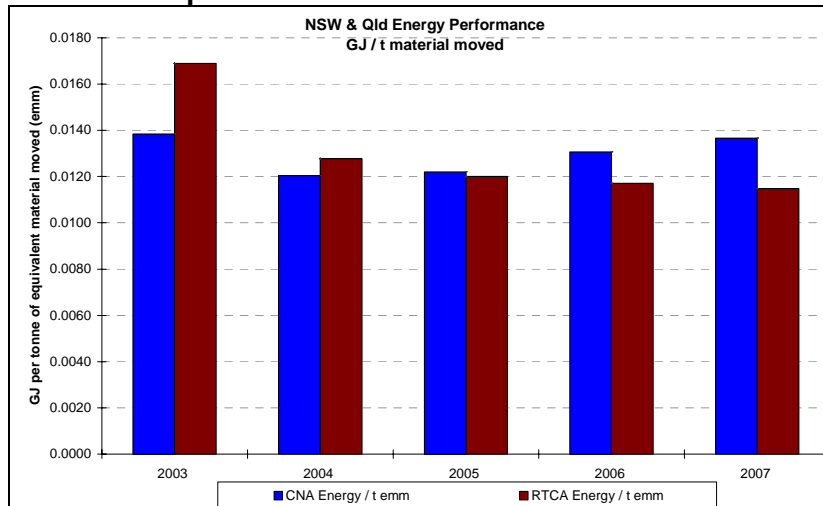
Energy - Saleable Product Basis CNA / RTCA performance



The middle graph on this page shows the gigajoules of energy use per tonne of product. The higher strip ratio of the CNA mines is one of the factors that influences the higher energy use per tonne of product.

The third graph on this page shows the energy use per tonne of material moved. This shows that there is little difference between the states on rate of energy used for a tonne of material moved. Queensland has also had an improvement in performance over the past five years but originally had a much higher rate.

Energy - Equivalent Material Moved Basis CNA / RTCA performance



Understanding the key drivers for energy use and greenhouse gas production is an important step in being able to drive performance improvement. In moving forward into future target setting periods RTCA is using a range of learnings from the current target period to identify greater integration of energy and GHG considerations in mine planning, business improvement programmes and site communication activities. The objective is to have an integrated approach to improving energy efficiency and improving greenhouse gas emission reductions.