

Presentation to South Dakota Climate Challenge Conference

September 29, 2007

Perspectives on Climate Change

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Director Environmental Policy & Partnerships

Rio Tinto Services, Inc.

Rio Tinto – a world leader in mining



Iron ore



Energy – Coal & Uranium



Industrial Minerals



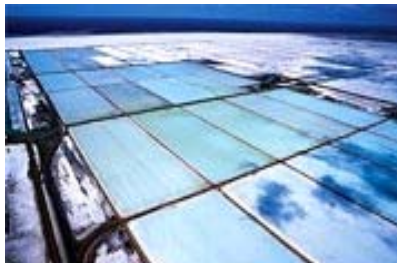
Aluminium



Copper



Diamonds



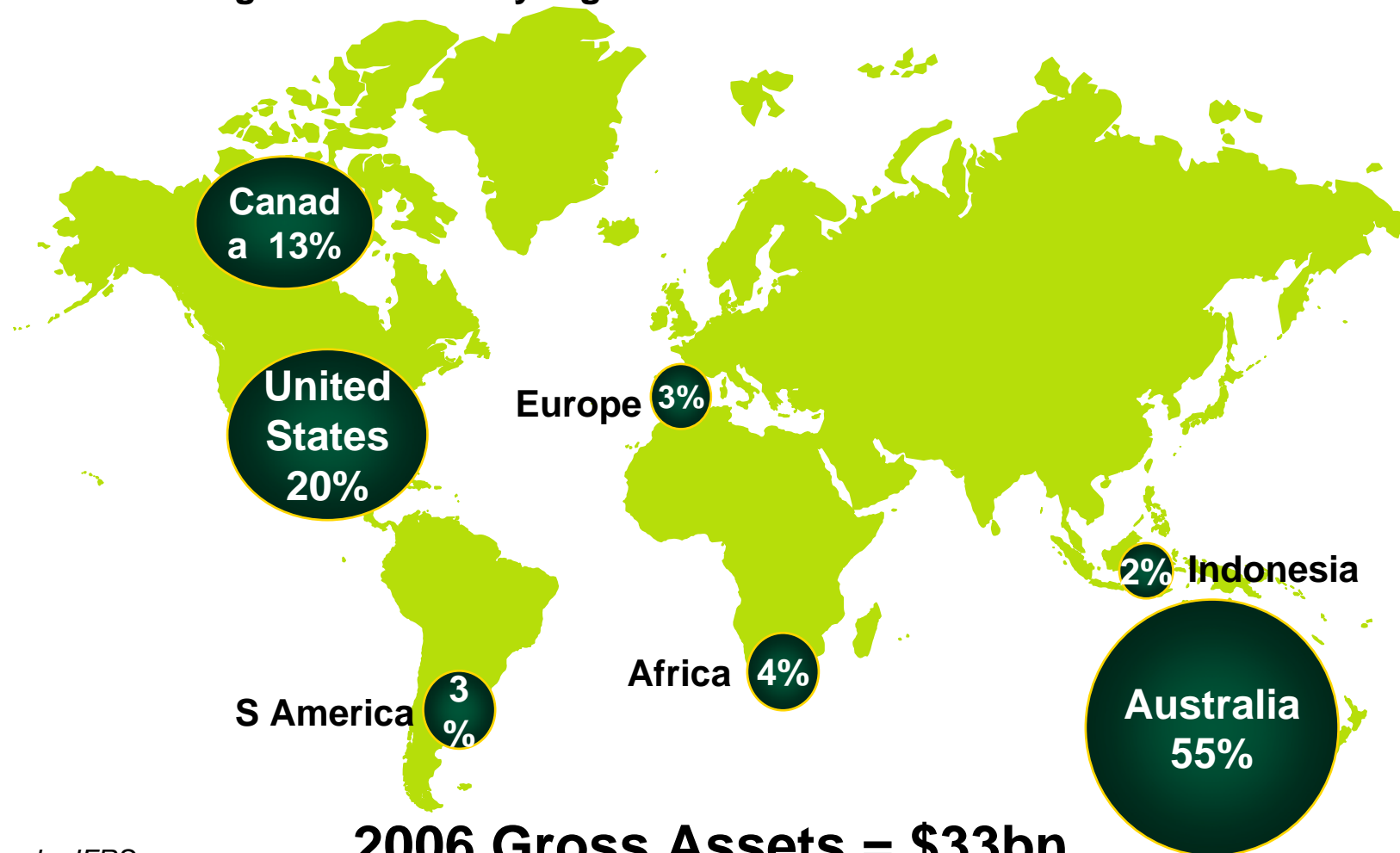
Technology



Exploration

88% of assets in Australia and North America

Rio Tinto 2006 gross assets - by region



Data under IFRS



Rio Tinto believes that emissions of greenhouse gases (GHGs) resulting from human activities are contributing to climate change. Avoiding human caused changes to the climate is an important international goal. In order to achieve this goal the world needs reductions in emissions of greenhouse gases. . . .

- 1. Build support for government action & engage with stakeholders to advocate policies that:**
 - Encourage leadership;
 - Set credible future emission limits;
 - Support technology development & deployment; &
 - Utilize broad-based market mechanisms.
- 2. Develop low GHG emission pathways to allow our products to continue to meet societies needs.**
- 3. Take a proactive stance at operations to reduce GHG emissions:**
 - Set & achieve progressive targets;
 - Undertake & encourage technology R&D;
 - Work with our customers & suppliers; &
 - Consider the physical impacts of a changing climate.

Why ?

“Climate change is a critical issue for our business. Not only do we produce energy resources, such as coal, but our mining and mineral processing operations use large quantities of energy. Combating climate change means finding new and better ways of producing, using and conserving energy,”

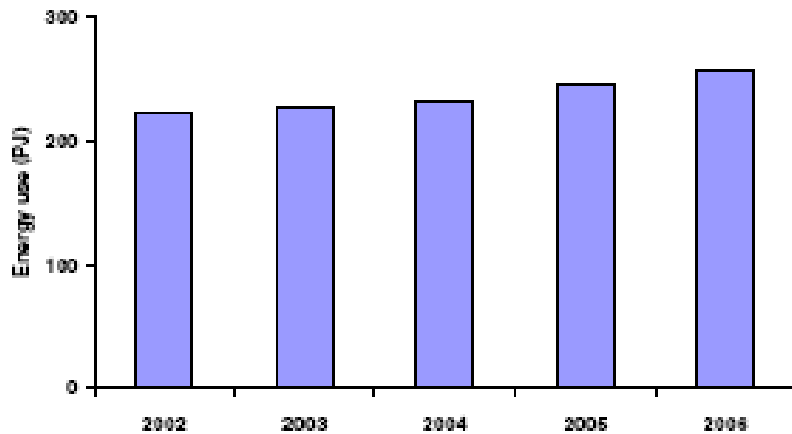
Tom Albanese, Rio Tinto’s chief executive

RIO TINTO

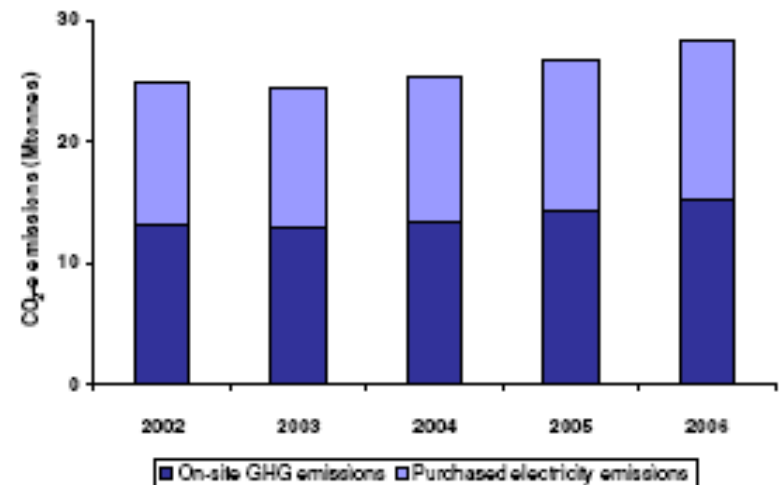
Energy use (2002 to 2006)

GHG (2002 to 2006)

Energy use (2002 to 2006)



Greenhouse gas emissions (2002 to 2006)



Over the past five years, there has been a 14 per cent increase in total emissions and a 17 per cent increase in on site emissions.

Most of the change is due to continuing expansions and new developments.

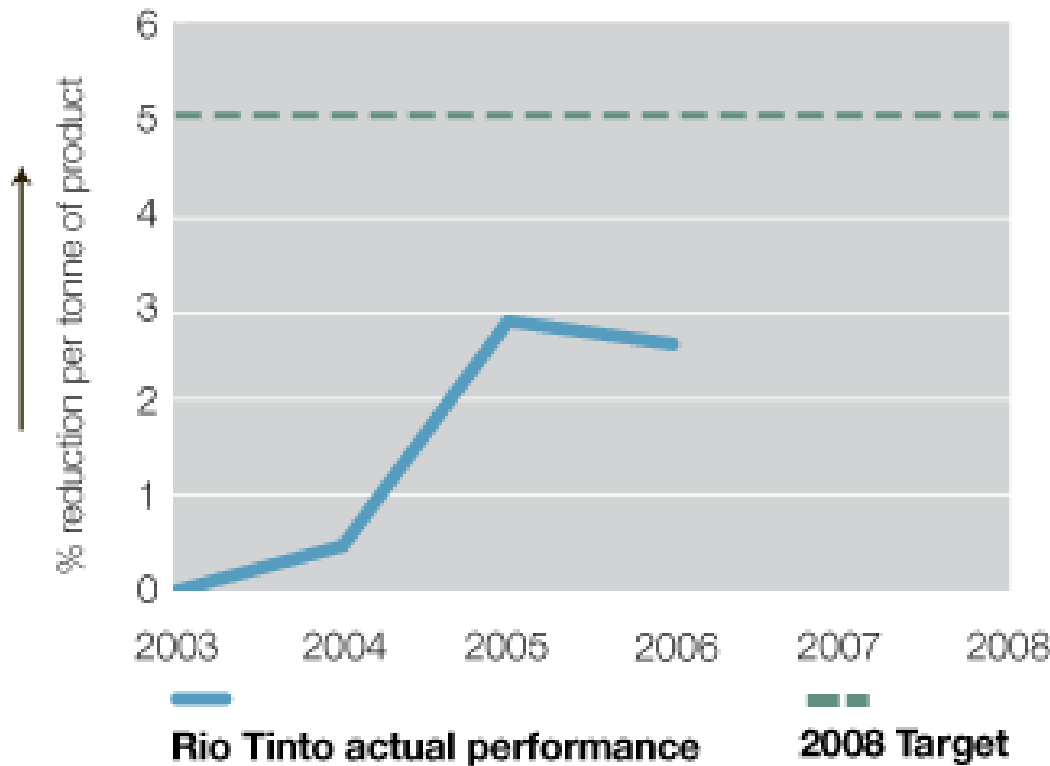
2006 GHG Emissions

Total 28,345,586.08 mtCO₂e

Onsite – 15,271,714.15 mtCO₂e

Rio Tinto 2006 Energy Efficiency Performance

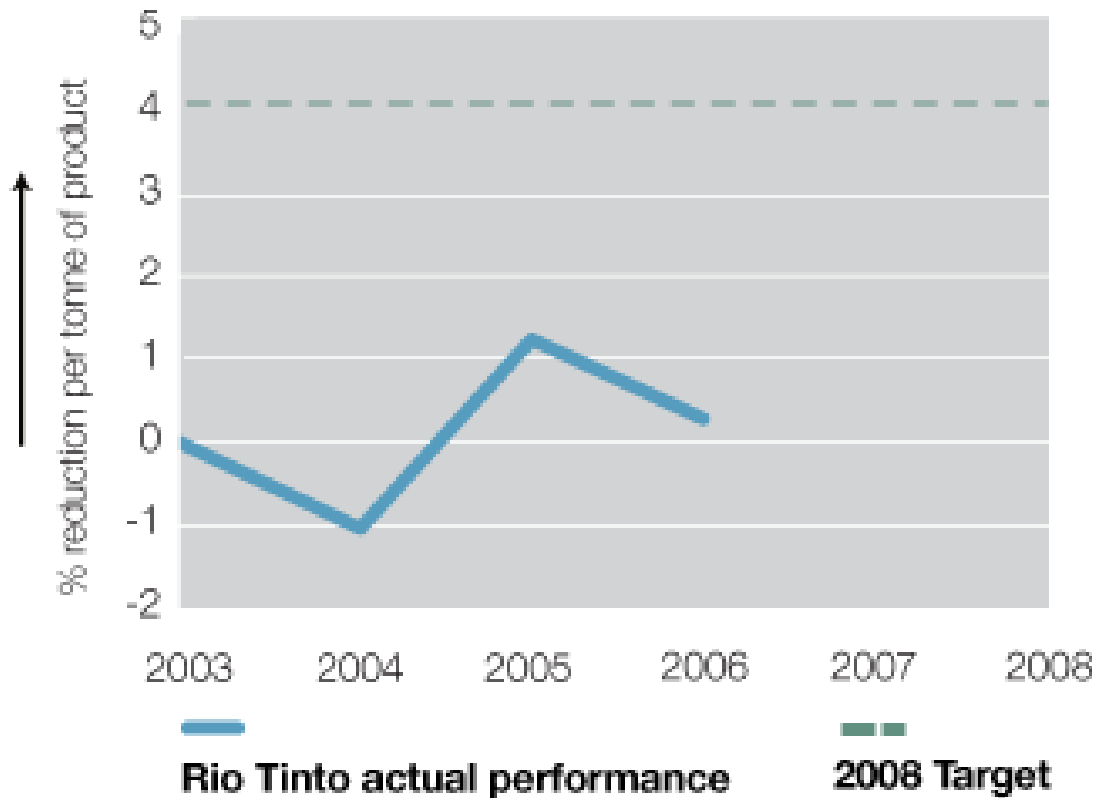
Energy use efficiency (relative to a 2003 baseline)
and progress against 2008 target



Energy efficiency has improved by 2.6% since 2003 but has slipped slightly compared with performance in 2005

Rio Tinto 2006 GHG Emissions Target Performance

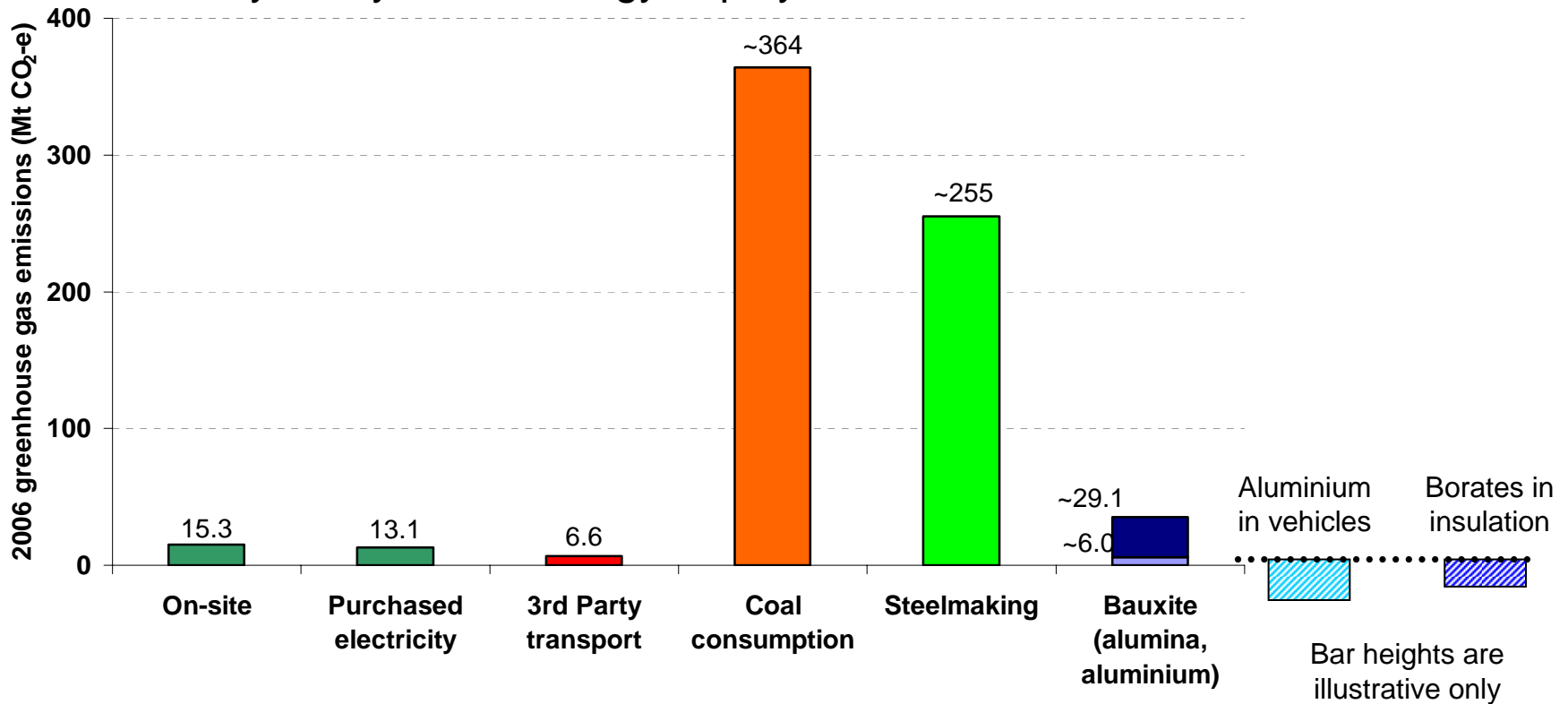
Greenhouse gas emissions efficiency (relative to a 2003 baseline) and progress against 2008 target



Greenhouse gas efficiency has improved 0.3% since 2003 but has slipped compared with performance in 2005

Our Emissions Profile – 2006

- Product related emissions exceed those at Rio Tinto’s operations
- Technology is key to cost-effective emissions reductions
- Industry is key to technology deployment



To reduce emissions we must work across the product chain

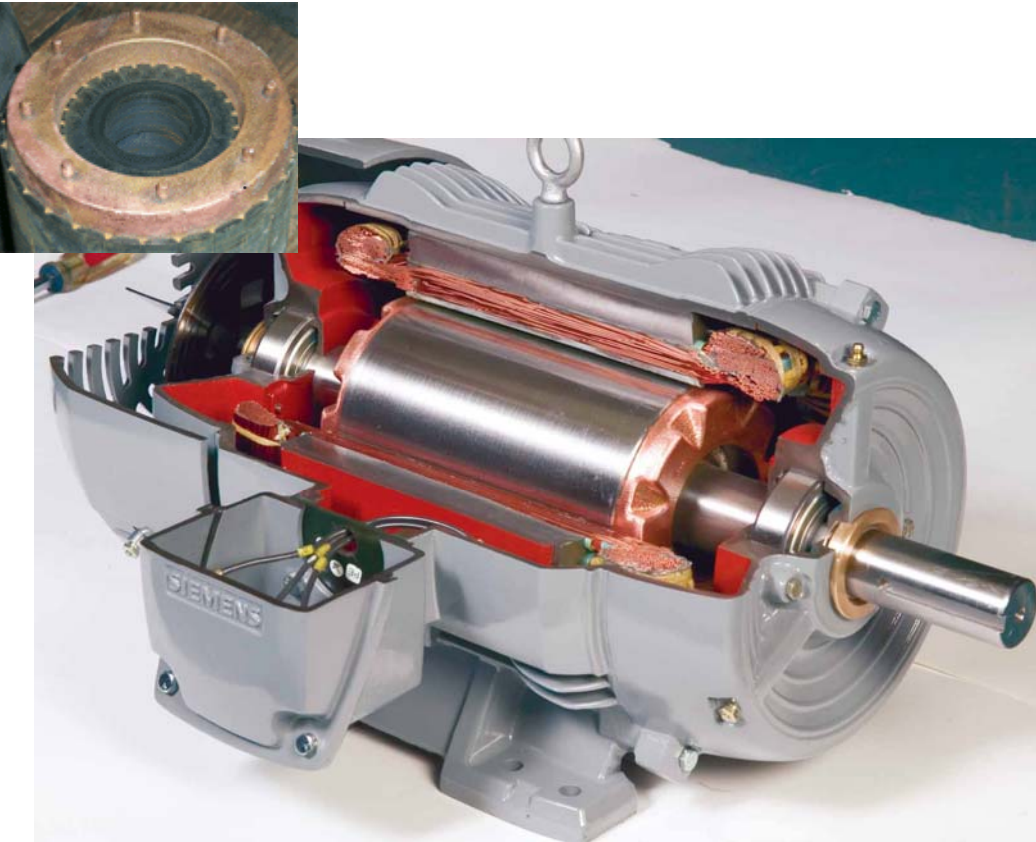
What is Rio Tinto Doing ?

- **Emissions Intensity and Energy Efficiency Targets**
 - Increasing focus on energy efficiency
- **Low Emissions Pathways for our Products, e.g.,**
 - Copper – electrification advancement
 - Aluminum – light-weighting
 - Borates – Insulation
- **Piloting Carbon Bio-sequestration & Certification of Abatement**
- **Advancing Technology, e.g.**
 - Advanced Coal, Carbon Dioxide Capture & Storage
- **Adaptation and Risk Management**
- **Reporting**
 - Carbon Disclosure Project
 - Sustainability Reporting - Global Reporting Initiative-3
- **Policy Development – Engagement**
 - US Climate Action Partnership
 - Pew Center for Global Climate Change – Business & Environment Leadership Council

Bio-Sequestration – Avoided Deforestation Pilot Minding the Carbon Store -

- Rio Tinto Aluminium (RTA) partnered with The Carbon Pool Pty Ltd. – Queensland, Australia
- Abate approximately 1 million tonnes of CO₂e emissions through avoided deforestation
- Payments to landowners to forego permits to clear native vegetation, avoiding the release of greenhouse gas emissions over a period of 120 years from land clearing of approximately 12,000 hectares of native vegetation
- Verified and approved under the Australian government's Greenhouse Gas Friendly initiative
- Useful model that adds experience to the broader discussion on avoided deforestation and carbon offset credits

Copper Development Association – Copper Motor Rotor Project



- 15% to 20% reduction in motor losses (1.5 to 2 % increase in efficiency)
- **Electric Motors in the US**
 - ~ Two-thirds of all industrial electricity
 - ~ 680 Billion kW-Hr per year
- 1% improved in motor efficiency would save:
 - 6.8 Billion kW-Hr per year
 - \$US 500 Million at 7 cents per kW-Hr
 - Equivalent to 13 Million barrels of oil

- Hismelt addresses existing blast furnace issues
 - Blast furnaces require high quality iron ore and coal and have environmental emissions including GHGs
- Kwinana plant demonstrates a revolutionary iron making method
 - Smelts directly using iron ore fines and non coking coal. It has other benefits e.g., SO_x, NO_x, PAHs and recycling savings
- **Energy Efficiency**
 - Projected to achieve a 15-20 percent improvement in energy efficient and GHG reductions.
- **GHGs performance equal to the best blast furnaces**
 - Future development will provide step GHG improvement (investigating Circofer® technology)

Hismelt Technology®



Addressing Carbon Dioxide Emissions From Fossil Fuels

“The challenge for this century is to reduce CO2 emissions from fossil fuels such as coal.” In the past we have effectively applied technology to reduce emissions from coal burning, but the key to unlocking an environmentally friendly future for all fossil fuels is carbon dioxide capture and storage (CCS). The ultimate success of CCS will depend on its widespread application, public acceptance and rapid commercialization of the technology.”

*Preston Chiaro, chief executive
of Rio Tinto’s Energy division*

FutureGen Project Concept

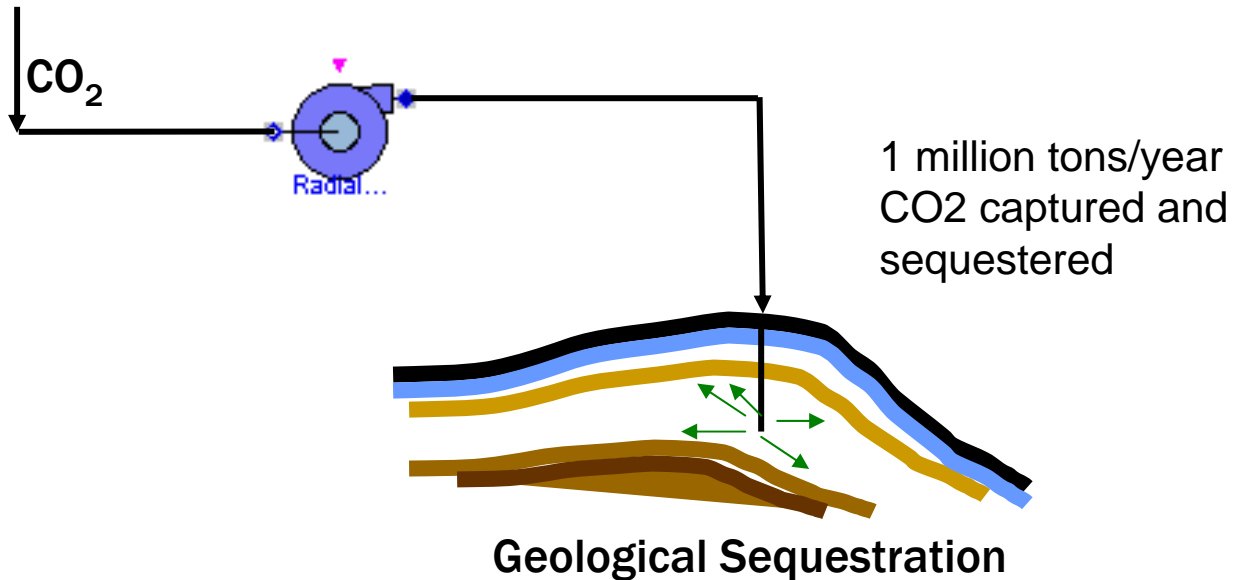
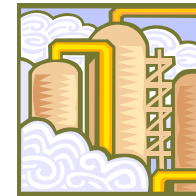
Commercial-scale
275-MWe Plant



Electricity



Hydrogen



“Living laboratory” to test
and validate cutting-edge
technologies

Public-private partnership



A joint venture between Rio Tinto and BP to develop decarbonized energy projects around the world.

The venture is initially focused on hydrogen-fueled power generation,

- using fossil fuels and carbon capture and storage technology to produce new large-scale supplies of clean electricity.
- <http://www.hydrogenenergy.com/>



**RIO
TINTO**

A joint venture between
BP Alternative Energy and Rio Tinto

Carbon Capture & Storage - Challenges & Issues

- While different components of CO₂ capture and sequestration have been tested or demonstrated at varying scales, it is important to recognize that substantive and necessary R&D is still on-going
- There is still a **very significant integration challenge** at commercial scale
- **CO₂capture and sequestration is a cost, and will require an external signal to be deployed**
- While technologies are evolving rapidly, they need an appropriate framework in order to be deployed successfully

Carbon Capture & Storage - Challenges & Issues

- Technology Pathway – Storage Pathway
 - Demonstration Programs – important
- Adequate Funding Mechanisms
- Legal Issues and Policy Barriers must be addressed
 - Consistent regulatory requirements for injection, monitoring and closure
 - Regulatory
 - Access – Eminent Domain
 - Federal Subsurface
 - Storage, Pipelines, Monitoring/Measuring Locations
 - Trans-boundary Issues
- Liability Issues Must be Addressed
 - Insurance (at a reasonable cost) needs actuarial database to quantify risk.
 - CCS time frame is very long
 - Risk/reward and regulatory elements generally not the same as for EOR
 - Government umbrella or other reasonable liability relief essential

- Taking action now to progress advanced coal technologies with carbon dioxide capture and storage is critical to achieving the long-term stabilization goals.