Southdown Magnetite and Kemaman Pellet Project

An advanced Iron Ore Project for the Direct Reduction Pellet Market

AUSTRALIAN RESOURCES CONFERENCE

Dubai, 10 February 2008

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Project Location - Southdown
Rio Tinto’s aeromagnetic survey indicates that the Southdown deposit is closest to the surface within Grange’s mining leases.

After 3½ years of negotiations with Rio Tinto, Grange acquired the 6km eastern section. Rio Tinto took a stake in Grange (shares plus options, 19.9%) to keep an interest in the project. Grange expect to double the resource and increase the mine life from 22 years to 35 years.
Southdown Resource

- Grange now controls total deposit length of 12km
- Total Southdown resource target of 1 billion tonnes potentially sufficient for a project life of +35 years
Project Highlights

- Advanced Project – All approvals should be in place by 2008
- Growing Demand in Key Markets
- Feasibility Study Completed
- Infrastructure in Place
- Ability to produce High Quality (DR Grade) Pellets
- Pellet Plant – First for SE Asia means close to Key Markets
- Joint Venture with Sojitz – world pellet market leader
Project Overview

1. MINING AND CONCENTRATION OPERATIONS FOR 35 YEARS
2. 100KM SLURRY PIPELINE TO ALBANY PORT
3. CONCENTRATE SHIPPED IN CAPESIZE VESSELS
4. PELLET PLANT PRODUCING DIRECT REDUCTION AND BLAST FURNACE PELLETS

Dual Location

Southdown
- Open pit mine operation
- Magnetite concentrate production 6.6mtpa @ 69% Fe
- Slurry pipeline to existing port
- Shipping in Capesize vessels

Kemaman
- Pellet production ~7mtpa
- Deep water, capesize port
- Availability of gas, power, water
- Proximity to markets (first in South East Asia)
- Investment incentives
Slurry Pipeline
- Optimal transport method
- Finalising easements with landowners

Power
- Western Power Networks 220kv line from Muja (150MW capacity).
- EPA Assessed
- Interconnected to SWIS\(^1\)
- Transmission line easement progressing

\(^1\) South West Interconnected System (Western Australia)
## Project Infrastructure – Southdown & Albany

### All key infrastructure in place or well advanced

| **Water** | Pit dewatering, site water harvesting, retreating Albany town waste water & groundwater |
| **Power** | Base load power supply potentially augmented by renewable power |
| **Power Transmission** | 220kV transmission line approved by EPA |
| **Concentrate Transport** | Slurry Pipeline (easements on freehold rural land) |
| **Workforce** | Local communities means no need for Fly-in/Fly-out workforce |
| **Deep Water Port** | Existing Albany Port to be dredged to take 170,000 DWT (Capesize) vessels |
Albany Port

NEW BERTH LOCATION
Environmental Benefits of DR/EAF Steelmaking

- Global Steel industry accounts for 5% of worldwide CO₂ emissions

- Steel makers using natural gas and DR/EAF method (feed 80% DRI, 20% scrap) reduce CO₂ emissions by up to 46% of BF/BOF method

Carbon Emissions for Steelmaking Routes

Source: Midrex Inc
WATER RECYCLING

- Most of the project’s process water supply will come from recycled waste water from the city of Albany.

- At least 5,000kl of water per day will be used growing to 7,700kl (100% of total requirements) by 2018.

- This project will probably be the largest single industrial user water recycling project in Western Australia.

Existing Albany Waste Water Storage Dam
Environmental Benefits – Southdown Project

WIND POWER

• The Southdown Project will involve the construction of a new 220kV transmission line ~250km to the mine from the local power grid.

• 2 wind power companies are seeking to set up +100MW wind farms near the mine to supply renewable energy not only to the mine but also to other grid customers via the new line.

• These could be the largest wind farms in Western Australia.

Existing Albany Wind Farm (12 x 1.8MW turbines)  
Image courtesy of Verve Energy
Deep Water Port
Existing Wharf at Kemaman (West Wharf)
Suitable for Capesize vessels

Transport
Conveyor corridor between Port and pellet plant

Power, Gas & Water
Power – TNB (substation immediately next to site)
Gas – Petronas, Water – mains supply

Workforce
Local population – skilled and unskilled

Investment Incentives
15 Year Tax Holiday – granted by Malaysian Govt
Various other concessions granted

Markets
Excellent proximity to key DR and BF markets
(One DR Plant, Perwaja on adjacent land)
Project Infrastructure – Kemaman Port

KEMAMAN PORT

CONVEYOR ROUTE

WEST WHARF -18.0m CD

FUTURE WHARF

DREDGING COMPLETED 2006
Project Infrastructure – Kemaman Site
Demand for DR Pellets

DR pellet demand is projected to increase significantly in SE Asia and the Gulf Region. Demand in this market is growing much faster than the China iron ore market.

Drivers of increasing DR Pellet Demand
- Capital cost of traditional integrated steel plants – availability / cost of coking coal
- Environmental issues of sinter plants – intensifying over time
- Abundant and cheap natural gas availability in SE Asia and Gulf Region
- Flexible steel production
- Compatibility with increased steel scrap recycling
- Proximity of steel plants to fast growing markets in SE Asia and Middle East

<table>
<thead>
<tr>
<th>SE Asia</th>
<th>Gulf</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perwaja Steel</td>
<td>Hadeed</td>
</tr>
<tr>
<td>Amsteel</td>
<td>Qasco</td>
</tr>
<tr>
<td>Krakatau Steel</td>
<td>Shadeed</td>
</tr>
<tr>
<td>Lion Group Banting</td>
<td>Al-Tuwairqi</td>
</tr>
<tr>
<td>Maegma Steel</td>
<td>Others</td>
</tr>
</tbody>
</table>

Bar chart showing DR pellet demand in SE Asia and Gulf from 2005 to 2017.
Iron Ore Pellet Market Outlook

• Brazilian producer SAMARCO, of which CVRD owns 50% is building their 3rd pellet plant in Brazil.

• SAMARCO says that all the supply from their new pellet plant (planned to be in operation in March 2008, which has the same investment cost as Grange’s project), is already 100% sold. Total production of the pellet plant is between 7 to 8 mtpa.

• The company states that they expect to reach a turnover of US$ 3 billion in 2020, against US$ 1.2 billion in 2006

• Samarco expects that the pellet market to remain tight at least until 2015. By then the company expects seaborne pellet demand will have doubled to just under 200 m tonnes.

• CVRD and SAMARCO dominate the pellet market to an even greater extent than the Big 3* dominate iron ore, giving them tremendous market power

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* CVRD, BHPP and Rio Tinto, which together account for 75% of seaborne iron ore trade; in pellets, CVRD alone represents 90% of seaborne trade
Kemaman Pellet Plant – Strategic Position

Kemaman Freight Advantage

Kemaman has distinct freight advantages over South American pellet producers

- Close to key markets hence much lower shipping costs
- Current spot market freight Brazil to China is >US$100/tonne
- Grange shipping costs will be <US$15/tonne
Centre of the Market
Kemaman Pellet Plant – Strategic Position
Proximity to Customers

DR PELLET
CONSUMERS
1. Perwaja Steel
2. Amsteel
3. Maegma Steel
4. Lion Group Banting
5. Krakatau Steel
6. Quasco
7. Hadeed
8. Various
9. Various

BF PELLET
CONSUMERS
A. China Steel Corp.
B. Bluescope Steel Ltd
C. Posco
D. Japanese Steel Mills
E. Chinese Steel Mills

COUNTRY
Malaysia
Malaysia
Malaysia
Indonesia
Qatar
Saudi Arabia
UAE
India
Taiwan
Australia
Sth Korea
Japan
China
Kemaman Pellets – Strong Returns

<table>
<thead>
<tr>
<th>Capital Costs</th>
<th>US$ million</th>
</tr>
</thead>
<tbody>
<tr>
<td>Southdown</td>
<td>839</td>
</tr>
<tr>
<td>Kemaman</td>
<td>534</td>
</tr>
<tr>
<td><strong>Total Capital Cost</strong></td>
<td><strong>1,373</strong></td>
</tr>
</tbody>
</table>

Potential Gross Margins (Pre-Capex) : >US$500m per year
Partners - Sojitz

- Sojitz to become a 30% partner in the project.

- Sojitz will pay a royalty to Grange of up to 3.5% on their 30% of production.

- Sojitz is a recognised leader in the iron ore pellet sector and is the No 1 trading firm in Japan for pellets and pellet feed.

- Sojitz has expert knowledge in management of pellet plants and has been the manager of the Nibrasco JV in Brazil between CVRD and the Japanese steel mills since 1974.

- Sojitz has excellent long term relationships with pellet consumers in Asia and the Middle East.

- Sojitz heavy machinery department have experience in delivering turnkey heavy plant and equipment solutions for numerous projects in the iron ore and steel sector in Asia and the Middle East.

- Grange and Sojitz are now working together to complete pre-commitment development activities and complete project funding and ownership arrangements.
## Project Status

The Southdown & Kemaman projects are well advanced with feasibility complete, most infrastructure in place and approvals in progress.

<table>
<thead>
<tr>
<th>Item</th>
<th>Status</th>
<th>Expected Timing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feasibility Study</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Kemaman Environmental Approval</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Kemaman Investment Incentives</td>
<td>✔️</td>
<td></td>
</tr>
<tr>
<td>Southdown Environmental Approval</td>
<td>In progress</td>
<td>▪ Full Ministerial Approval expected Q2 2008 (mine &amp; pipeline) &amp; Q3 2008 (port)</td>
</tr>
<tr>
<td>Project Structure / Finance</td>
<td>In progress</td>
<td>▪ Negotiations underway</td>
</tr>
<tr>
<td>Commence Construction</td>
<td></td>
<td>▪ Late 2008</td>
</tr>
<tr>
<td>First Production Year</td>
<td></td>
<td>▪ Late 2010</td>
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Grange Overview

**Board of Directors**

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
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</thead>
<tbody>
<tr>
<td>Anthony Bohnenn</td>
<td>Non Executive Chairman</td>
</tr>
<tr>
<td>Russell Clark</td>
<td>Managing Director</td>
</tr>
<tr>
<td>Alex Nutter</td>
<td>Technical Director</td>
</tr>
<tr>
<td>Richard Krasnoff</td>
<td>Non Executive Director</td>
</tr>
<tr>
<td>David Macoboy</td>
<td>Non Executive Director</td>
</tr>
<tr>
<td>Douglas Stewart</td>
<td>Non Executive Director</td>
</tr>
</tbody>
</table>

**Shares**

- **ASX Code:** GRR
- **Current shares on Issue:** 115,201,099
- **Unlisted Options on Issue to Rio Tinto:** 17,500,000
- **Share price (29th January 2008):** A$2.00
- **Market Capitalisation (29th January 2008):** A$230.0 m

**Major Shareholders**

- **Management:** 12.5%
- **Rio Tinto Ltd:** 7.9%
- **Top 10 Shareholders:** 81.1%
- **After Exercise of Options:**
  - **Rio Tinto Ltd:** 19.9%

**Share Price**

Graph showing share price and volume trends from July 2006 to January 2008.
WHY AUSTRALIA? – THE SOUTHDOWN MINE

• Large DR grade quality magnetite ore body in Australia
• Australia is one of the safest places in the world and a reliable business environment
• Solid political situation
• Very good infrastructure, mine only 100km from existing port
• No labour shortage, already 350 unsolicited job applicants
• No future port congestion or port delays
• Very environmentally friendly operation incl. recycled waste water and future wind energy
WHY MALAYSIA ? – THE KEMAMAN PELLET PLANT

- Kemaman Port: Deep water port with existing infrastructure
- Grange has secured the rights for +50 years to use the port and the West Wharf
- Possibility to build a second pellet plant, 60 ha. Land available
- 15 years tax holiday granted by the Malaysian Government
- Close proximity to major clients in Malaysia and Indonesia and close to India and the Gulf Region
- Low inventory holding costs for nearby consumers
SOUTHDOWN – summary…

• Poised for iron ore pellet production for 35 years.

• Niche Market, premium quality, high value product.

• Supply/Demand relationship very favourable.

• The market in starved for our product – sellers’ market.
Thank you...

Also look at our website [www.grangeresources.com.au](http://www.grangeresources.com.au)

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