

10 May 2011

ASX: GRR



Grange Resources Limited  
ABN 80 009 132 405  
Level 11, 200 St Georges Terrace  
Perth Western Australia 6000  
PO Box 7025, Cloisters Square  
Perth Western Australia 6850  
T +61 8 9327 7901  
F +61 8 9327 7932  
info@grangeresources.com.au  
www.grangeresources.com.au

## Grange Resources Limited

*Australia's leading magnetite producer*

### Successful Completion of Southdown Project PFS

Grange Resources Limited ("Grange" or the "Company") is pleased to announce the successful completion of the Southdown Magnetite Project pre-feasibility study.

Prefeasibility modelling indicates that the project will cost A\$2.57 billion to complete the mine site preparation, the concentrator facility and associated infrastructure required to load and ship approximately 10 million tonnes per annum of high grade magnetite concentrate containing 69% iron. Operating costs per tonne of concentrate produced and loaded are estimated to be less than A\$60 per tonne.

The strong iron ore price outlook and positive NPV and favourable returns generated at this stage have provided the Grange Board with the confidence to progress the project to the next stage, the DFS, which is scheduled for completion in the first quarter of 2012.

### HIGHLIGHTS

- Capital expenditure for mine and concentrator equipment, supporting facilities, desalination plant, EPCM, owners' costs and contingencies, of A\$2.57 billion;
- Operating costs per tonne of concentrate produced and loaded of less than A\$60 per tonne;
- Positive NPV with favourable IRR;
- Mine life of 19 years, with potential to extend to 40 years, at an annual production rate of 10 million tonnes of concentrate;
- Advanced state of PFS will allow Definitive Feasibility Study ("DFS") to be completed in 1<sup>st</sup> quarter of 2012;
- Grange's extensive operating experience and existing in-house intellectual property at Savage River dramatically reduces the execution risk, and will allow for a smooth start up to operations;

- The project is well advanced. Major permits for the mine and port are in place, land tenure is largely secure, metallurgical test work is well advanced, power line easements are established and permitted;
- Initial production is forecast for 2014;
- Over 80% of production has been committed to blue chip customers;
- Pellet plant capital expenditure (includes port and pellet plant infrastructure) of A\$941 million;
- Total operating costs for pellet production of less than A\$75 per tonne (excluding shipping from Australia to Malaysia).

Capital expenditure (“Capex”) includes construction of the following:

- Mine fleet,
- Concentrator plant and first fill,
- Camp facilities,
- Power line,
- Desalination plant,
- Concentrate and water pipelines,
- Filtration plant,
- Wharf, storage shed, ship loader and associated port expansion.

This milestone completion of the PFS is the culmination of work undertaken on the project over the last five years, and as a result, the project is in an advanced state with major permits in place and much of the development work already completed.

The Capex figure is comparable to other Australian projects currently under construction and replaces a 2008 estimate which was based on a mine with a significantly lower capacity and a production rate of only 6.8 million tonnes per annum.

During the next 12 months Grange plans to continue to build and develop the Southdown project, securing long lead items, engineering and tender packages and proceeding with other key actions critical to maintaining the target commissioning date of 2014.

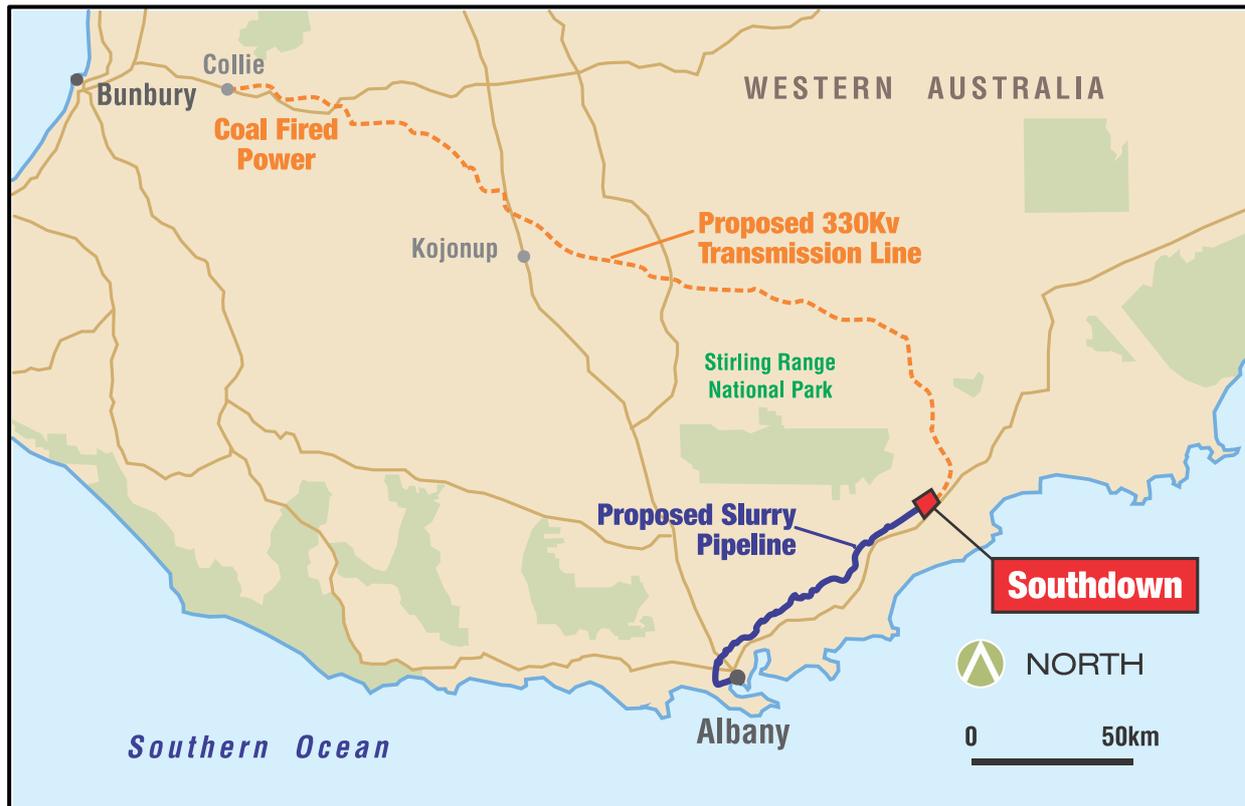
Managing Director, Russell Clark said “This is a major step forward for Grange’s growth and expansion. The Company and major shareholders are confident that with the extensive experience gained at our Savage River operations, coupled with the tried and tested systems and processes which can be directly applied to Southdown, the execution risk for this project will be significantly reduced. We are Australia’s leading magnetite producer and the Southdown project will ensure we remain a major player in the industry.”

The Southdown Magnetite Project is a joint venture (JV) between Grange Resources Ltd (Grange) (70%), and Sojitz Resources & Technology Pty Ltd (Sojitz) (30%), wholly-owned subsidiary of Sojitz Corporation, a Japanese global trading company operating in various industries and services.

## DETAILED PROJECT INFORMATION

### Project Overview

Figure 1: Map showing the Southdown Project



Located approximately 90 kilometres northeast of the Port of Albany on the south coast of Western Australia (Figure 1), the Southdown magnetite deposit is approximately 12 km in length and represents one of the best premium quality magnetite deposits currently under development in Australia. With a location near existing port facilities, an ore body close to surface and near the regional population centre of Albany, the deposit is favourably placed for development.

### The Southdown project comprises the following key components:

- A 654 million tonne JORC compliant resource, open at depth and along strike;
- A 387 million tonne JORC compliant reserve;
- A large open pit mining operation with annual total movement (ore and waste) of 110 million tonnes per annum;
- A desalination plant located on the coast, 25 kilometres from the mine;
- A 280 km electricity transmission line from Collie to the mine site;

- A concentrator capable of producing 10 million tonnes per annum of premium grade magnetite concentrate;
- A concentrate slurry pipeline from the concentrator to the Port of Albany, approximately 100 kilometres long, with a second pipeline returning water to the mine site;
- A filtration plant at the Port of Albany to de-water concentrate for storage and shipping;
- Magnetite concentrate storage shed, reclaim and ship loading facility;
- A new wharf at Albany port, with capacity for cape sized vessels, and the associated port expansion;
- A 7 million tonnes per annum pelletising plant with ship loading and unloading facility at the Port of Kemaman, on Malaysia's east coast;
- Other associated on-site and off-site infrastructure.

## Geology

The Southdown deposit occupies the core of a gently east plunging, overturned tight isoclinal syncline with a steeply south dipping axial surface. The deposit is offset by moderately north-east dipping dextral reverse faults and subsidiary steeply south-east dipping sinistral faults.

Currently the resource extends for 8.5 kilometres of the 12 kilometre strike length of the deposit, with variable depths ranging from a surface outcrop in the west, to 480 metres below surface in the east. The average thickness of the mineralisation is 85 metres, with the deposit increasing in width towards the east as the thicknesses of low-grade and non-mineralised internal geological units increases. A drilling program is currently in progress, to increase both resources and reserves.

## Resources and Reserves

Grange announced a substantial increase in the Mineral Resource at the Southdown Project on 3 July 2009. The Mineral Resource has remained unchanged since then:

**TABLE 1: SOUTHDOWN MAGNETITE PROJECT MINERAL RESOURCE ESTIMATE**

<b>Classification</b>	<b>Measured Resources</b>	<b>Indicated Resources</b>	<b>Inferred Resources</b>	<b>Total Resources</b>
Tonnes (Mt)	219.7	210.3	224.4	654.4
DTC wt%	37.4	38.9	33.4	36.5
DTC Fe%	69.2	69.3	69.1	69.2
DTC SiO <sub>2</sub> %	1.72	1.94	2.07	1.91
DTC Al <sub>2</sub> O <sub>3</sub> %	1.43	1.27	1.29	1.33
DTC S%	0.46	0.40	0.54	0.46
DTC LOI%	-3.04	-3.06	-2.96	-3.02

This Mineral Resource has been defined using geological boundaries and a cut-off grade of 10 wt% DTC (Davis Tube Concentrate) and includes minor internal dilution. All reported concentrate grades were weighted by DTC.

The information in this report which relates to the Mineral Resources of the Southdown Project is based on information compiled by James Farrell who is a full-time employee of Golder Associates Pty Ltd and a Member of the Australasian Institute of Mining and Metallurgy. James Farrell has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity for which he is undertaking to qualify as a Competent Person as defined in the JORC Code (2004). James Farrell consents to the inclusion of this information in this statement of Mineral Resources in the form and context in which it appears.

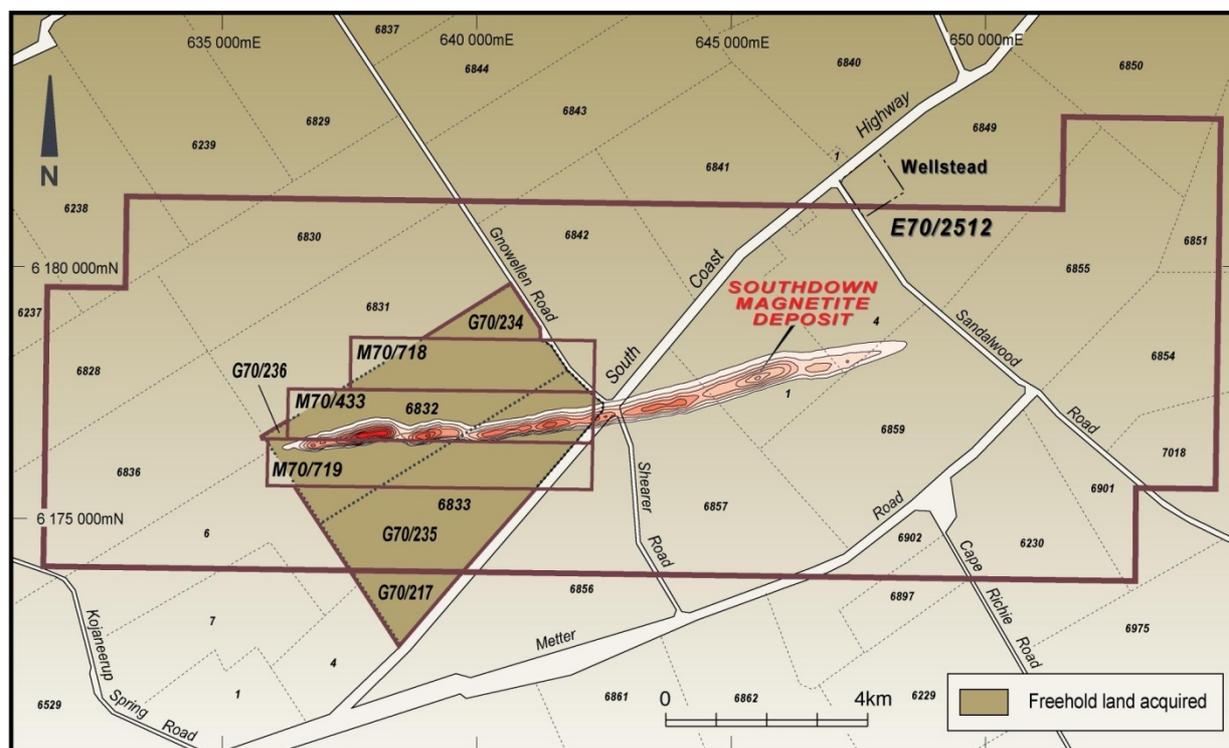
The information in the above table is a summary of the Mineral Resource Estimate set out in Table 1. Full details of assumptions and methodology for the Mineral Resources were contained in the Company's announcement to ASX dated 3 July 2009.

**Current reserves at Southdown are as follows:**

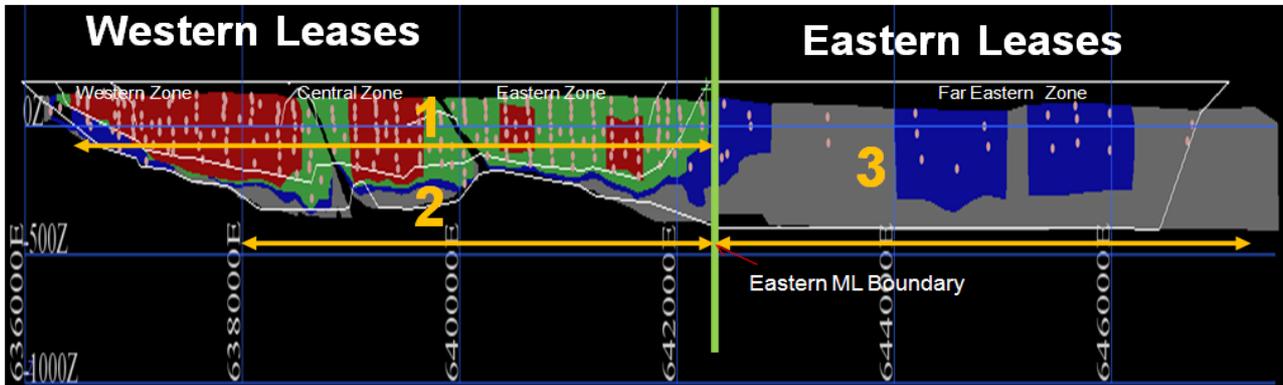
<b>Table 2: Southdown Ore Reserves</b>		
	Tonnes (Million tonnes)	Grade (%DTR)
Probable ore	388	35.5

The following diagrams outline the orebody location, comprising of the Western and Eastern Leases. The Western Orebody is covered by a Mining Lease and the Eastern Orebody is covered by an Exploration Lease.

**Figure 2: Southdown Orebody Location (Plan View): Western and Eastern Leases**



**Figure 3: Southdown Orebody (Long section View): Western and Eastern Leases**



## Mining

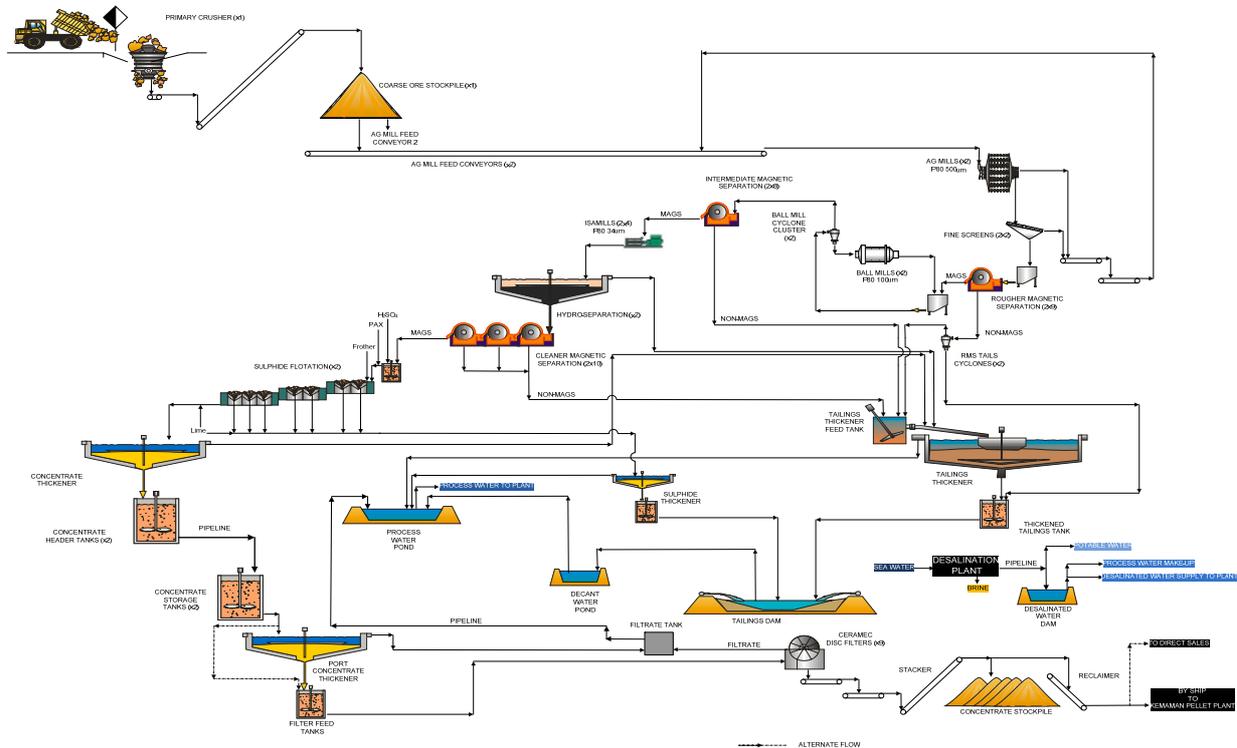
The mine will be an open pit with modern large scale open pit mining methods employed. Mining will be a conventional hydraulic face shovel and diesel dump truck operation. Shovel size will be 650 tonnes with trucks sized to match (220 tonne payload).

Detailed mine design and schedules for the PFS have been constrained to the ore resource west of the South Coast Highway. To achieve 10 million tonnes per annum of concentrate production, an average material movement in the mine of up to 110 million tonnes per annum is required.

## Processing

Drilling was undertaken last year to collect samples for metallurgical test work. Extensive pilot test work has since been completed and the processing flow sheet has been finalised.

**Figure 4: Southdown Concentrator Process Flow Sheet**



**The concentrator design and equipment selections are based on the production target of 10 million tonnes per annum of magnetite concentrate.**

Ore from the open pits and ROM stockpile is delivered to the primary crusher. The crushed ore is discharged to the coarse ore stockpile and reclaimed for processing.

There are two parallel processing lines from the AG mills through to flotation. The two streams combine at the thickeners for magnetite concentrate, pyrrhotite concentrate and non-magnetic tailings separately.

AG mill discharge is screened in two stages with the oversize pebbles from both stages conveyed to the AG mill feed belt. The undersize from the AG mill trommel flows by gravity to the fines screen and the fines screen undersize is pumped to the rougher magnetic separation stage. The tailings (non magnetic rejects) from the rougher stage are pumped to the tailings thickener.

The rougher magnetite concentrate is pumped to the ball mill circuit. Mill discharge is classified using clusters of cyclones. Cyclone overflow is transferred to the intermediate magnetic separation circuit whilst coarse cyclone underflow gravitates back to the ball mill feed.

In the intermediate magnetic separation circuit, non-magnetic tailings are pumped to the tailings thickener. Intermediate magnetite concentrate is pumped to the fine grinding circuit to the IsaMills™.

There are four IsaMills™ per line and the discharge from each bank of mills is pumped to a hydro-separator where the silica fines content is removed.

The hydro-separator underflows are pumped to the cleaner magnetic separation circuit.

The cleaner magnetic separator non magnetic tailings are pumped to the tailings thickener. The cleaner magnetite concentrate is pumped to the reverse flotation plant.

The non magnetic tailings from the cleaner magnetic separator are pumped to the tailings thickener. The cleaner magnetite concentrate is pumped to the reverse flotation plant.

The flotation circuit consisting of two banks of flotation cells, the sulphur bearing mineral pyrrhotite reports to the concentrate stream for rejection to a dedicated tailings storage facility (TSF).

Final magnetite concentrate is thickened for transportation by a buried pipeline to the filter plant at the Port of Albany.

The magnetite concentrate is filtered and stockpiled in a storage shed ready for shipping to the pellet plant in Malaysia and other overseas customers. Filtrate and concentrate thickener overflow water is pumped back to the process pond at the concentrator via a return water pipeline for re-use.

Make-up water for the mine and process plant is supplied from a seawater desalination plant.

## Slurry Pipeline

The magnetite concentrate will be pumped from the mine site as slurry in a 450 millimetre diameter buried pipeline to the Port of Albany (See Figure 1). Grange operates a similar pipeline at the Savage River Mine in Tasmania. The majority of the land required for the pipeline route is secured. The Southdown dual pipeline system will be buried and the second line will enable water to be returned to the concentrator from the Albany port site.

## *Infrastructure of Western Australia:*

### Power Supply

Power to the mine will be provided by way of a new Western Power transmission line from Collie to the mine site via the South West Interconnected System (SWIS). The 330 kilovolt (kV) transmission line, with an estimated line length of 280 kilometres, will have the capacity to supply the project's maximum demand of 180 Megawatts.

A number of electricity providers have submitted non-binding proposals to supply energy for the project. Preliminary reviews were concluded and have been incorporated in the PFS.

Permits for the transmission power line corridor have been or are in the process of being established by Western Power. The power line route is shown in Figure 1.

In Albany, a new 22 kV connection at the Western Power Albany 132/22 kV substation will service the port infrastructure.

## Albany Port

An export facility with capacity for 10 million tonnes per annum of magnetite concentrate will be built on reclaimed land at the existing Port of Albany. Magnetite concentrate will be delivered as slurry to a filtration plant located adjacent to the stockpile storage shed. The new facilities incorporate the addition of a new berth (Berth 7), a filtration plant, concentrate storage shed and a ship loading facility (Figure 5).

**Figure 5: Albany Port – New Berth Location**



The port upgrade will deepen, widen and extend the existing shipping channel to allow passage of cape size vessels. The proposed project has long-term social and economic benefits to the port and surrounding areas and will be carried out in accordance with the environmental approvals already in place.

## Water

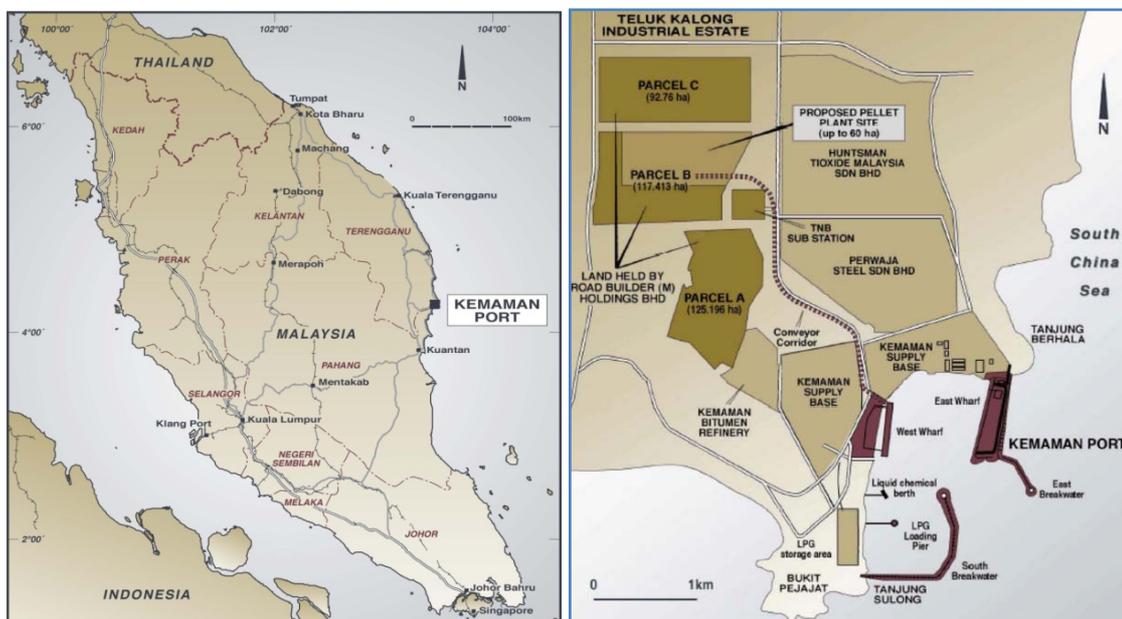
There is a limited source of fresh water in the project vicinity. As such Grange will construct a 10 gegalitre per annum desalination plant which will be located on the coast approximately 25 kilometres from the mine to supplement water being returned to the mine site from the filtration plant in Albany. The cost of this endeavour has already been included in the Capex for the project.

## Pellet Plant – Kemaman, Malaysia

The Port of Kemaman is located approximately 40 kilometres north of Kuantan Port on the east coast of Malaysia. It provides safe deepwater access and foreshore infrastructure that supports the growing demands of the Teluk Kalong Industrial Area (production of steel, titanium oxide, bitumen, chemicals and petrochemicals) (Figure 6). The facility is capable of berthing cape size vessels.

The concentrate will be processed in a coal fired grate-kiln pellet plant to make high grade blast furnace pellets at a rate of 7 million tonnes per annum. Once processed, the pellets will be exported from Kemaman.

**Figure 6: Plan of Kemaman Port and Teluk Kalong Industrial Estate**



## Environmental Approvals

The Public Environmental Review (PER) for the Southdown mine and pipeline has been completed and environmental approval of the project was received from the West Australian Minister for the Environment in November 2009. Grange is negotiating land offsets for the Carnaby Cockatoo with the Commonwealth Department of Sustainability, Environment, Water, Population and Communities under the Environment Protection Biodiversity Conservation Act, 1999 and expects to progress these during 2011 as conservation reports on the proposed offset land become available.

Grange has submitted a request to the EPA to alter the existing mine permit to allow a production rate increase to 10 million tonnes per annum (previously 6.8 million tonnes per annum). Approval on the alteration is expected in 2011.

The Albany Port Authority made application to both the Commonwealth and the West Australian State Government for the expansion of the Albany port and the channel access to the Port.

In June 2010, the Albany Port Authority received Commonwealth approval for the port expansion project.

In November 2010, the West Australian Minister of the Environment approved the environmental permit allowing the expansion of the Albany Port, encompassing the building of a new berth suitable for cape sized vessels and the widening and deepening of the channel into the Port to allow passage of these bigger ships.

The planned increase in production to 10 million tonnes per annum of concentrate will require additional water. It is proposed to use a desalination plant, situated near the mine site, to provide the make-up water requirements of the operation. An environmental permit application has been submitted to the EPA with the expectation that this permit will be approved by the end of 2011.

Environmental permitting for the Kemaman operation is in place.

## Product Quality and Offtake Customers

Test work has provided indicative product specifications for concentrate and pellets produced from Southdown, shown in Tables 3 & 4 below:

**Table 3: Southdown Magnetite Concentrate Specifications**

<b>Southdown Magnetite Concentrate</b>	<b>%</b>
Total Fe	68.9
SiO <sub>2</sub>	1.56
Al <sub>2</sub> O <sub>3</sub>	1.45
CaO	0.11
MgO	0.16
TiO <sub>2</sub>	0.38
P	0.04
S	0.08
LOI (Loss of ignition)	-3.18

**Table 4: Southdown Iron Ore Pellets Specifications**

<b>Southdown Iron Ore Pellets</b>	<b>%</b>
Total Fe	67
B2	0.54
SiO <sub>2</sub> +Al <sub>2</sub> O <sub>3</sub> +TiO <sub>2</sub>	3.31
P	<0.01
S	0.01

Market analysis undertaken by CRU International and AME provided pricing on product specifications and future value forecasts used in the PFS. More detailed marketing analysis will be carried out during the DFS.

As part of its merger with Australian Bulk Minerals in 2009, Grange agreed to supply Shagang Steel with 56% of the Southdown production (5.6 million tonnes per annum) at market prices. As a 30% JV partner, Sojitz will take and market 30% of the product (3 million tonnes per annum), leaving just 1.4 million tonnes per annum to be placed with customers. Finalisation of offtake agreements and pricing will be undertaken during the DFS.

The Southdown Magnetite Project continues to receive strong interest in relation to the potential sale of its iron ore concentrate and pellets. The proximity of the project to established infrastructure, the size of the resource and relative ease of ore extraction, combined with Australia's stable political and regulatory environment means that the project offers the potential for steel groups to enter into long term offtake agreements, with a view to ensuring a secure continuum of iron ore concentrate and pellet supply.

## Capital Cost Estimate

The capital cost is reported in Australian dollars (AUD) as detailed in Tables 5 & 6 below.

**Table 5: Southdown Project Capital Cost Estimate**

<u>Southdown</u>	<u>A\$ million</u>
Mine	563
Concentrator	849
Slurry Pipeline	199
Transmission Line	317
Desalination Water Supply	202
Albany Concentrate Filtration and Storage	21
Port of Albany	400
Allowances	24
<b>Total</b>	<b>2,575</b>

**Table 6: Kemaman Capital Cost Estimate**

<u>Kemaman</u>	<u>A\$ million</u>
Pellet Plant	640
Port Facilities and Materials Handling	299
Allowances	2
<b>Total</b>	<b>941</b>

These capital cost estimates covers the design and construction of the Kemaman pellet plant, together with the required infrastructure, and was completed to a level of accuracy of +/-20%.

The essential phases of the process used in developing the capital cost estimate are highlighted below:

- Development/confirmation of the process flow diagrams by process engineers;
- Compilation of an equipment list including sizing of equipment by mechanical engineers;
- Mechanical layout, with consideration of topography;
- Determination of equipment pricing;
- Quantification/factoring of bulk materials;

- Calculation/factoring of freight costs;
- Estimation of EPCM contractor services costs;
- Estimation of construction facilities and support;
- Calculation of accuracy provision allowances.

A provision for owners' costs, EPCM and contingencies was estimated based on the customary percentages applied in similar projects.

## Operating Cost Estimate

The estimate includes anticipated operating costs directly associated with owner mining, operation (and maintenance) of ore processing and concentrate pelletising facilities, along with associated material transport and infrastructure.

The concentrator facilities will be located in Australia, with pelletising facilities currently planned to be established in Malaysia. The operating cost estimate is presented in AUD. The estimate has an accuracy of +/-20%. A summary of the project operating costs is presented in Table 7.

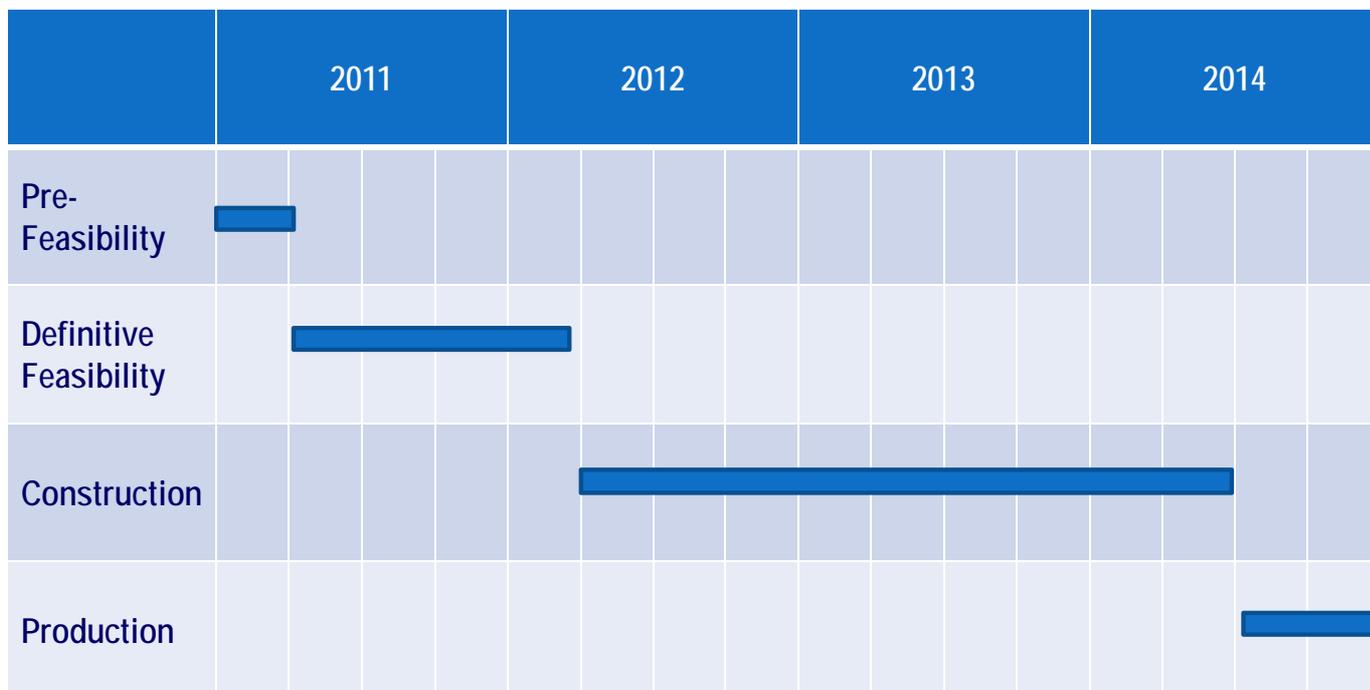
**Table 7: Southdown Project Operating Cost Summary**

	<u>Unit Rate</u>
Cost per tonne of concentrate produced	<\$60
Cost per tonne of pellets produced	<\$75

Note: does not include WA State Royalties

## Project Schedule

The next phase of project development is completion of the DFS and concurrently securing long lead equipment and supply contracts. It is anticipated that the DFS will be completed by the end of the first quarter, 2012.



For further information, please contact:

**Investors:**

Russell Clark  
 Managing Director & CEO  
 Grange Resources Limited  
 + 61 8 9327 7901

**Media:**

Eliza Gee  
 Buchan Consulting  
 +61 3 9866 4722/ +61 432166431  
[egee@bcg.com.au](mailto:egee@bcg.com.au)

Or visit [www.grangeresources.com.au](http://www.grangeresources.com.au)

## About the Owners

Grange Resources Limited is Australia's leading magnetite producer and the only commercial producer of magnetite pellets in Australia, combining both mining and pellet production expertise. Development of Southdown will see Grange Resources becoming one of the major suppliers of high grade magnetite in Australia.

Grange Resources Limited owns and operates Australia's largest integrated iron ore mining and pellet production business located in the northwest region of Tasmania.

The Savage River magnetite iron ore mine, 100km southwest of the city of Burnie, is a long life mining asset set to continue operation to 2026 with current reserves estimated to extend the mine life further. At Port Latta, 70kms northwest of Burnie, Grange Resources' pellet plant and port facility produce and ship approximately 2.3 million tonnes of premium quality iron ore pellets annually with plans to increase annual production to 2.7 million tonnes by 2010. Long term supply contracts see these pellets shipped to major steel producers in Australia and Asia.

Sojitz Resources & Technology Pty Ltd, wholly-owned subsidiary of Sojitz Corporation, a Japanese global trading company operating in various industries and services and it operates in many industries, including construction, forestry, plastics, chemicals, mining, petroleum, textiles, and international trade.