#### **RESEARCH NOTE**

# **A Germinating Fertiliser Producer**

# **Investment Highlights**

Client interest has prompted research on a company listed in the US on the OTC Bulletin Board. We are initiating coverage on Legend International Holdings Inc (LGDI.OB) with a SPECULATIVE BUY recommendation and price target of \$1.05/sh. All values in this research note are in US dollars.

- **A Risked NPV** under two different scenarios was used to value the company. Any future funding mix was not taken into account due to the large mix of options available such as equity, debt, JV, Offtake Agreement, partner sell down or a mix of any of the above.
- **Primary focus** is on the development of mining and processing of its phosphate mineral reserves near Mt Isa in northwest Queensland. Legend has a phased implementation plan to become a leading supplier of the high analysis phosphate fertilisers DAP (Diammonium Phosphate) and MAP (Monoammonium Phosphate) and the valuable by-product Aluminium Fluoride (AIF3).
- **Quality Assets**. Legend acquired a number of phosphate exploration interests in Queensland in November 2007, which followed discovery of phosphate mineralisation on the company's diamond exploration properties. Some of the leases picked up by Legend had been held by Broken Hill South, WMC Resources and BHP Billiton Ltd.
- **Near-term production**. Legend is targeting the high grade phosphate ore deposit 27%  $P_2O_5$  on Paradise North to turn the company cash flow positive as soon as possible. Paradise North will provide a direct feed of phosphate rock >29%  $P_2O_5$  to the phosphoric acid plant with little or no beneficiation.
- Access to Infrastructure. The mining sites of Paradise North, Paradise South and D-Tree are all located very close to the Barkly Highway a gazetted heavy vehicle route. The site of the proposed fertiliser plant is located next to the main rail in Mt Isa providing direct access to the port of Townsville.
- Strong Management Team: The Company has a strong management team and board led by Mr Joseph Gutnick, a leading mining industry entrepreneur. The wealth of knowledge and contacts in the mining community would assist the Company in raising the funding required for developing the company from a lower value phosphate rock producer to a higher value complex fertiliser producer. Additionally, the management team has a history of executing a significant number of mining exploration and development transactions.

Year End December 30	2013F	2014F	2015F	2016F	2017F	2018F
Reported NPAT (\$m)	(28.3)	138.8	135.9	(29.2)	189.4	261.9
Recurrent NPAT (\$m)	(28.3)	138.8	135.9	(30.2)	187.4	258.9
Recurrent EPS (cents)	(12.3)	60.6	59.3	(13.2)	81.8	112.9
EPS Growth (%)	na	na	na	na	na	na
PER (x)	(5.9)	1.2	1.2	(5.5)	0.9	0.6
EBITDA (\$m)	(22.1)	306.2	330.0	102.3	395.7	481.6
EV/EBITDA (x)	na	na	na	na	na	na
Capex (\$m)	750.6	479.1	259.7	0.0	0.0	0.0
Free Cashflow	(772.8)	(173.0)	70.2	104.3	399.7	487.6
FCFPS (cents)	(337.1)	(75.5)	30.6	45.5	174.3	212.7
PFCF (x)	(0.2)	(1.0)	2.4	1.6	0.4	0.3
DPS (cents)	0.0	0.0	0.0	0.0	0.0	0.0
Yield (%)	0.0	0.0	0.0	0.0	0.0	0.0
Franking (%)	0.0	0.0	0.0	0.0	0.0	0.0

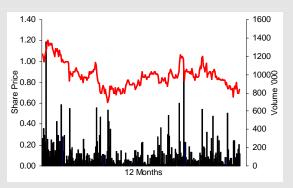
15 April 2011		
12mth Rating	SPI	ECULATIVE BUY
Price	US\$	0.73
Exchange/Code	OTC BB	LGDI
Shares o/s	m	226.39
Free Float	%	100
Market Cap.	US\$m	165.27
Net Debt (Cash)	US\$m	0
Net Debt/Equity	%	na
3m Av. D. T'over	US\$m	0.11
52wk High/Low	US\$	1.26/0.60
Valuation:		
Methodology		DCF
Net Asset Value	Base Case	Expanded Case
US\$m	1,578	2,311
US\$/share	1.05	1.53
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 LGDI is listed on the US OTC Bulletin Board. We

LGDI is listed on the US OTC Bulletin Board. We caution that the top 5 shareholders makes up a significant proportion of the combined market capitalisation and at present the share has relatively low market liquidity. LGDI holds a highvalue portfolio of phosphate tenements around the Georgina Basin. The company has progressed plans to increase reserves and become a high value fertiliser producer in the medium term. Ongoing news-flow together with the potential for a secondary listing and further funding initiatives could be expected to improve liquidity

#### **12 Month Share Price Performance**



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## Background

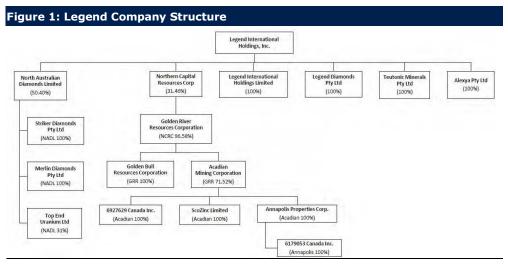
Legend International Holdings Inc (Legend) was incorporated in the State of Delaware on January 5, 2001. Following a company name and management change, in November 2004 the Company developed a new plan of operations and commenced mineral exploration activities.

Since 2004 Legend has acquired a number of diamond exploration tenements in Northern Australia. The company also has a controlling (51%) interest in North Australian Diamonds Limited (ASX:NAD) and holds 31.4% of Northern Capital Resources Corp, an unlisted public company with gold assets in North America and Canada.

Legend acquired a number of phosphate exploration interests in Queensland in November 2007, which followed discovery of phosphate mineralisation on the company's diamond exploration properties. Some of the leases picked up by Legend had been held by Broken Hill South, WMC Resources and BHP Billiton Ltd.

Legend is primarily focused on the development of mining, beneficiation and processing of its 100% owned phosphate mineral reserves near Mount Isa in northwest Queensland. Legend has a phased implementation plan to become a leading supplier of the high analysis phosphate fertilisers DAP (Diammonium Phosphate) and MAP (Monoammonium Phosphate) and the valuable by-product Aluminum Fluoride (AIF3).

The following chart sets forth the Company's corporate organization as of December 31, 2010:



Source: Company Report

## Legend's landholdings and exploration projects

Legend landholdings, granted and under application, prospective for phosphate, diamonds and base metals cover 2,035km<sup>2</sup> acres in Queensland and 15,930 km<sup>2</sup> in the Northern Territory. Granted landholdings consist of 1,735 km<sup>2</sup> in Queensland and 4,704 km<sup>2</sup> in the Northern Territory. In Queensland, Legend's holdings contain both historically defined phosphate mineralised material and current mineral reserves located in the Mt. Isa district, along the margin of the Georgina Basin which is host to major base metal and phosphate deposits.

Legend's exploration tenements are divided into the following project areas:

- Phosphate Projects:
  - Paradise Phosphate Project, Queensland

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- D-Tree Phosphate Project, Queensland
- King Eagle Phosphate Project, Queensland
- Diamond and Phosphate Projects:
  - Barr Creek Project, Queensland
- Diamond Projects:
  - Glyde River, Northern Territory.
  - Foelsche, Northern Territory
  - Abner Range, Northern Territory.
  - Cox, Northern Territory
  - Gravity Project, Northern Territory
- Diamonds and Base Metals
  - McArthur River, Northern Territory

# <image>

Source: Company Report

# **Corporate Overview**

## Market Capitalisation

Legend currently has 226.4 m shares on issue and 22.9 m options listed in the US on the OTC Bulletin Board. The company is fully funded for the remaining exploration and definition of resources on the phosphate projects with \$26.2 m in cash. The OTC Bulletin Board is an over the counter (OTC) equity quotation service and OTC equities are relatively illiquid by nature. The top 5 shareholders of Legend hold 69.2% of the shares on issue. These factors imply that LGDI is currently trading with limited liquidity which is substantiated by the 12 month turnover of US\$0.13m.

## **Major Shareholders**

Figure 3: Major Shareholders		
Shareholder	shares (m)	(%)
Renika Pty Ltd	48.8	21.20
IFFCO	34.3	15.20
Attara Capital LP	30.8	13.61
Soros Fund Management	23.4	10.35
Chabad House of Caufield	19.9	8.80

Source: SEC 13G Filings

## **Strategic Partners**

The Company has established strategic partnerships with a number of domestic and international companies:

- Indian Farmers Fertiliser Co-operative Limited (IFFCO), a leading player in India's fertiliser industry would assist in the sales and marketing in the Indian market.
- Wengfu Group of China (Wengfu) currently markets fertiliser products in over 20 countries worldwide. It has undertaken a feasibility study for the Paradise Phosphate Project which gave positive and robust results.
- The Company has signed a Memorandum of Understanding to enter into a joint venture agreement with Coogee Chemicals for the production of sulphuric acid, phosphoric acid storage and sulphuric acid storage for the phosphoric acid plant situated in Mt Isa.
- The Company has also signed a Memorandum of Understanding with Xstrata Zinc regarding the supply of sulphuric acid to the Company's phosphoric acid plant in Mt Isa.

The Company has appointed Nomura as its financial advisor to assist with the selection of a strategic partner to invest in Legend's Paradise North, Paradise South and D-Tree deposits. The strategic partner will add to the expertise of the current board and management and support the implementation of the development of the company from a lower value phosphate rock producer to a higher value complex fertiliser producer. Nomura is currently running a formal process to assess interested strategic partners.

## **Board of Directors**

#### Mr Joseph Gutnick, President and Chief Executive Officer

Mr Gutnick is a leading mining industry entrepreneur. He is the President and Chief Executive Officer of numerous listed public companies in the mining sector in both Australia and North America. Mr. Gutnick was responsible for overseeing the discovery, development and operation of world class gold mines in Australia. Mr Gutnick is a Fellow of the Australasian Institute of Mining and Metallurgy, a Fellow of the Australian Institute of Management, a Member of the Institute of Company Directors in Australia, and was a Director of the World Gold Council. Mr Gutnick was awarded the prestigious Diggers award at the 1997 Diggers and Dealers Industry Awards.

#### Dr U.S. Awasthi, Non-Executive Director

Dr. U.S. Awasthi has been a Director of Legend since August 2008. He has extensive experience in the planning and commissioning of fertiliser plants. Dr. Awasthi has been the Managing Director of IFFCO since February 1993 and was the Chairman of the Fertiliser Association of India during 1994-96. He held the position of President of the International Fertiliser Industry Association in Paris during 1997-99. He represented the industry point of view on Sustainable Development at the 6th Session of United Nations Commission on Sustainable Development. He has co-authored a book 'Fertiliser Industry in India' and published 30 papers.

#### Dr David S Tyrwhitt, Non-Executive Director (Independent)

Dr Tyrwhitt has more than 40 years experience in the mining industry. He is currently a Director of five listed public companies in the mining and exploration sector. He worked for Newmont Mining Corporation in Australia, South East Asia and the United States for over 20 years. During this time, he was responsible for the discovery of the Telfer Gold Mine in Western Australia. He was Chief Executive of Newmont Australia Limited between 1984 and 1988 and Chief Executive Officer of Ashton Mining Limited between 1988 and 1991. Ashton was the part-owner of the Argyle Diamond Mine, the world largest diamond bearing lamproite.

#### Dr Allan Trench, Non-Executive Director (Independent)

Dr. Allan Trench is a professional geologist/geophysicist and business management consultant with almost 20 years experience within the Australian resources sector. Dr. Trench was appointed a Director of Legend in August 2008. He holds a Master of Business Administration (Distinction) from Oxford University and a Master of Science in Mineral Economics. He is currently a Director and Chairman of the Board of Acadian Mining Corporation; a Director of Navigator Resources Ltd., Pioneer Resources Limited and Venturex Resources Ltd.; and holds the position of an Adjunct Professor of Mineral Economics & Mine Management at the WA School of Mines, Curtain University.

#### Henry Herzog, Non-Executive Director (Independent)

Henry Herzog was appointed as a Director of Legend and a Director of North Australian Diamonds Ltd in August 2008. He has more than 40 years of corporate and management experience. He has served various publicly listed companies in Australia and the United States. Mr Herzog has restructured and reorganized several publicly listed companies including Bayou International Ltd and he is a member of the Board of Trustees of a non-profit college of higher education.

# **Phosphate Projects**

## Georgina Basin Geology

The majority of Australia's sedimentary phosphorite (phosphate rock ore) reserves lie within early Middle Cambrian successions of the Georgina Basin in northwest Queensland and northeast Northern Territory (Figure 4). Some eighteen named, discrete phosphorite deposits occur within the lower Middle Cambrian Beetle Creek Formation, or its stratigraphic equivalent the Border Waterhole Formation, that are basal in the stratigraphy of the Georgina Basin.

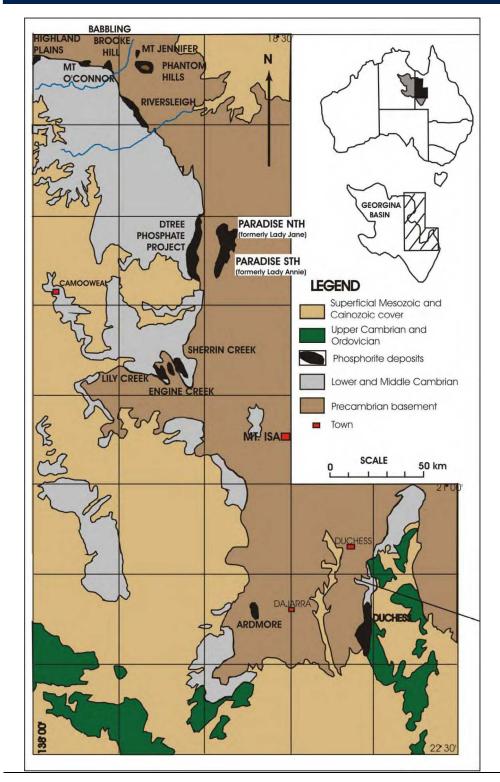
The Georgina Basin is a broad intracratonic basin covering some 325,000 km<sup>2</sup> of western Queensland and east-central Northern Territory. The basin is bound by Proterozoic basement of the Mount Isa Block and South Nicholson Basin to the east and north; and by the Tennant Creek Block and the Arunta Complex to the west and south.

Sediments within the Georgina Basin consist mainly of Cambrian to Middle Ordovician marine sedimentary rocks. The Cambrian and Early Ordovician sediments are dominated by marine carbonate rocks with minor sandstone and siltstone, while the Middle Ordovician rocks are comprised primarily of siltstone and sandstone. Throughout the basin, sediments have been deformed by minor to moderate folding and faulting, with moderate to strong folding, faulting and over thrusting along the southern margin.

## Paradise South Geology

The Paradise South phosphorite deposit was discovered in the late 1960's. It is located in an outlier of the Georgina Basin (Figure 4). It is confined to an area of low relief, approximately 25 km long and 5 km wide, trending north-south between ridges and hills of Precambrian shales, quartzite, siltstones and dolomite. The sedimentary phosphate rock was deposited in an embayment of the inland sea that covered the Georgina Basin during the early Middle Cambrian.

Stratigraphy of the embayment hosting the Paradise South phosphorite is comprised of sediments of Cambrian and Mesozoic age, with some thin overlying Tertiary and Recent deposits. The phosphatic unit that comprises the reserves is the Beetle Creek Formation



#### Figure 4: Major Phosphorite Deposits of the Georgina Basin

Source: Company Report

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## **Paradise Phosphate Project**

The Paradise deposit which has been renamed from Lady Annie (South) and Lady Jane (North) was the flagship deposit for BH South Ltd and was considered at the time to be the most favourable deposit in Australia for development due to its amenability to flotation, low abrasivity, resource size and quality of concentrates produced

Paradise South is one of seven phosphate rock deposits being explored or developed by Legend and is the first to have a current mineral reserve estimate reported. All seven deposits have historically reported mineralised material. The Paradise South mineral reserve has the following highlights

- Proven and probable phosphate rock reserves that will support 59 years of operation for the production of 600,000 tonnes of DAP per year or 29 years at a doubled rate of production.
- 'As-mined' proven and probable *ore* reserves of phosphorite of 196.2 million tonnes at 14.6%  $P_2O_5.$
- JORC code compliant Inferred Mineral Resource Estimate of 72 million tonnes at 17%  $P_2O_5$  at a minimum cut off grade of  $12\%~P_2O_5$
- Proven and probable *mineral* reserves of recoverable, commercially useable and internationally marketable phosphate rock concentrate of 55.5 million tonnes at 33% P<sub>2</sub>O<sub>5</sub> (72 BPL).

The reserve area targeted by drilling within the Paradise South Mining Lease Application (MLA90197) equates to approximately 70% of the area that contains historically defined mineralised material within this lease and approximately 50% of the area that contains historically defined mineralised material within Legend's exploration licence EPM16942.

The current reserve estimates correlate well to historical (1970's) estimates. There are areas currently held by Legend that have not been tested with modern drilling techniques but they have reported phosphate intersections in historical drilling information. As the area is re evaluated by Legend there is the potential to increase reserve tonnage upon successful future drilling results.

In 1990 Queensland Minerals published in "A Summary of major Mineral Resources, Mines and Projects, 4<sup>th</sup> Edition" described the active prospects of Lady Jane (Paradise North) and Lady Annie (Paradise South) as having Measured – Indicated Mineral Resources of 193 Mt at an average grade of 17.6%  $P_2O_5$  and 293 Mt at an average grade of 16.6%  $P_2O_5$  respectively. These historical reserves are not JORC compliant reserves

The reserve estimate is presented below in Figure 5 as both "as-mined" ore reserves and the recoverable commercially useable or marketable phosphate rock concentrate. The ore reserves and mineral reserves cannot be aggregated. The reserve estimate is also an initial JORC code compliant Inferred Mineral Resource Estimate of 72 million tonnes @  $17\% P_2O_s$  at a minimum cut off grade of  $12\% P_2O_s$ .

The recoverable, proven *mineral* reserves of the Paradise South phosphorite deposit are currently estimated at 28.9 million tonnes of phosphate rock concentrate at  $33.1\% P_{2}O_{5}$  (72.4 BPL). The Paradise South phosphorite deposit contains additional probable mineral reserves estimated at 26.6 million tonnes of phosphate rock concentrates at  $32.9\% P_{2}O_{5}$  (71.8 BPL). The total proven and probable mineral reserves are estimated at 55.5 million tonnes of phosphate rock concentrates at  $33.0\% P_{2}O_{5}$  (72.1 BPL). These reserves are based on a block model, typical of industry standards, developed from 180 drill holes using reverse circulation drilling technology, 32 cored diamond drill holes and a beneficiation process developed specifically for Legend's phosphorite ore types (Figure 3).

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### Figure 5: Ore and Mineral Reserves of Paradise South

	Tonnes (million)	%P2O5	Average BPL	%Fe₂O₃	%Al <sub>2</sub> O <sub>3</sub>	%MgO	%CaO
Proven	98.0	15.3	33.4	6.5	2.6	0.4	21.3
Probable	98.1	13.9	30.4	6.1	2.4	0.4	19.3
Total	196.1	14.6	31.9	6.3	2.5	0.4	20.3

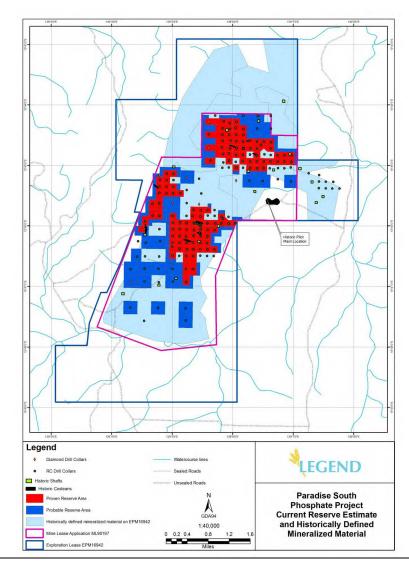
## **ORE RESERVES - "As-Mined" Phosphorite (Pre Processing)**

## MINERAL RESERVES - Recoverable Phosphate Rock Concentrate (Post Processing)

	Tonnes (million)	%P₂O₅	Average BPL	%Fe <sub>2</sub> O <sub>3</sub>	%Al <sub>2</sub> O <sub>3</sub>	%MgO	%CaO
Proven	28.9	33.1	72.4	3.0	0.8	0.2	47.0
Probable	26.6	32.9	71.9	2.9	0.8	0.2	46.6
Total	55.5	33.0	72.1	2.9	0.8	0.2	46.8

Source: Company Report

## Figure 6: Paradise South Drill Hole Locations



Source: Company Report

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## **D-Tree and King Eagle Phosphate Projects**

The D-Tree project hosts a known and well documented deposit of phosphate rock. The Queensland Minerals "A Summary of major Mineral Resources, Mines and Projects, 4th Edition" published in 1990 described the abandoned prospect of D-Tree as having Measured – Indicated Mineral Resources of 339 Mt at an average grade of  $16.0\% P_2O_5$ . In 2009 Legend designed several drill patterns utilising RC, Diamond and Sonic drilling techniques. Also in 2009 Legend became manager of the D-Tree West tenement which is located to the west and north-west of the original tenement, this gave access to extra historic reserves.

There was significant correlation between the new D-Tree and D-Tree West resource models and the historic models. The combined modern, JORC compliant inferred resource for the two tenements is now 305m tonnes at 15%  $P_2O_5$ . Both estimations have used a lower cut-off of 10%  $P_2O_5$  than the historical estimates.

Figure 7: Resource Estimate for the D-Tree Deposits						
	Resource Category	Tonnes (million)	% P <sub>2</sub> O <sub>5</sub>			
D-Tree	Inferred	135.0	13.8			
D-Tree West Inferred		170.0	16.0			
Total		305.0	15.0			
Historic	Non-Jorc	339.0	16.0			

Source: Queensland Minerals Report and Company Report

Legend entered into a farm-in and joint venture heads of agreement with King Eagle Resources Pty Limited on December 7, 2007 pursuant to which Legend can earn an 80% interest in phosphate on three tenement blocks named Quita Creek, Highland Plains and Lily and Sherrin creek by spending \$3 million on phosphate exploration over five years. Legend has no rights to any other minerals on the three tenement blocks.

Figure 8: Regional Deposits			
	Resource Category	Tonnes (million)	% P <sub>2</sub> O <sub>5</sub>
Quita Creek	Non-Jorc	30.0	7.4
Hhighland Plains	Non-Jorc	84.0	13.4
Lily Creek	Non-Jorc	191.0	14.9
Sherrin Creek	Non-Jorc	175.0	16.5
Total		480.0	14.8

Source: Queensland Minerals Report

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# **Project Summary**

Legend's current feasibility work has identified two options for the company to pursue. One option, the Base Case scenario, involves two stages aimed at producing 640ktpa of Ammonium Phosphate fertilisers, DAP and MAP, and 15ktpa of AIF30ver 30yrs.

Stage 1 of the Base Case project involves the production of fertiliser at a new facility in Mt Isa. Initially a phosphoric plant with nameplate capacity of 300ktpa and a Ammonium Phosphate plant with nameplate capacity of 600ktpa has been selected to optimise the available mineral resources, energy, water land and plant configuration. The 600ktpa nameplate capacity of the Ammonium Phosphate plant is based on operating the plant 300 days per annum. Management are confident this utilisation rate can be increased to 320 days pa increasing annual production to 640kt of DAP/MAP.

This option would include mining high grade ore from Paradise North, transporting ore by road to Mount Isa for production of phosphoric acid to produce of MAP/DAP. The MAP/DAP would be transported to Townsville via the existing rail line.

The Government has provided Legend some land, at a negligible cost, located to the south of Mount Isa. The land is freehold and zoned for "Industrial Use" which means there is no requirement to negotiate Native Title compensation for this land, significantly reducing the timeframes for approval and costs of development. This land is also adjacent to the main rail system and the Mica Creek power Station.

Stage 2 of the Base Case development is for the provision of a 1Mtpa rock phosphate beneficiation plant to feed the phosphoric acid plant and MAP/DAP plants which have been installed as part of Stage 1. This option would include mining lower grade ore from Paradise South and beneficiating to produce a rock phosphate concentrate. This ore would be transported via road to Mt Isa for the production of phosphoric acid to continue to produce 600ktpa of MAP/DAP which would then be transported via rail to Townsville.

A second option, currently management's preferred option, involves the doubling of fertiliser production and is called the "Expanded Case". In this case study the beneficiation plant design would be increased to produce up to 2Mtpa of rock phosphate that would be transported to Mt Isa via a slurry pipeline. The fertiliser plant design would be increased in capacity to 600ktpa of phosphoric acid and 1.2Mtpa of MAP/DAP. Finished product would be transported to Townsville via the existing rail line for export.

## Base Case Stage 1

Stage 1 of the Project involves the production of fertiliser at a new facility in Mt Isa. Initially a 300ktpa phosphoric acid plant has been selected to optimise the available mineral resources, energy, water, land and plant configuration. Stage 1 can be summarised as follows:

- Mine 1250ktpa high grade ore from Paradise North with a cut off grade of 25%  $P_2O_s$  (Average  $P_2O_s$  of 27.5%)
- Dry screen ore to 1mm to remove SiO2 and upgrade to approximately 1000ktpa of  $>\!29\%~P_2O_s$  (assuming 20% mass removal)
- Transport upgraded ore by road from Paradise North to 300ktpa Mount Isa Phosphoric Acid Plant
- Direct acidulation of upgraded ore to produce 640ktpa of MAP/DAP
- Source 200ktpa of sulphuric acid from Xstrata and 200ktpa import of Sulphur for burning
- Water for the Phosphoric Acid Plant will be sourced from Lake Julius water allocation. Water transferred from Lake Julius via Clear Water Lagoon to the Mount Isa Terminal Reservoir. New pumping station and pipeline from Terminal Reservoir to on-site storage to service the Phosphoric Acid plant
- The Phosphoric Acid Plant will be powered from the Ergon Energy eastern transmission line from the Mica Creek Power Station
- Transport 640ktpa of MAP/DAP in containers on flat bed rail wagons from Mount Isa to Townsville using 2 train sets

## **Base Case Stage 2**

Stage 2 of the development is for the provision of a beneficiation plant to feed the phosphoric acid plant and MAP/DAP plants which have been installed as part of Stage 1. The beneficiation plant will be needed as the high grade ore from the Paradise North deposit which is suitable for direct acidulation will be depleted in not lees than 5 years depending on the mining rate. Stage 2 can be summarised as follows:

- Mine 2500ktpa of lower grade ore from Paradise South
- Beneficiate 2500ktpa of lower grade ore at Paradise South to produce 1000ktpa of concentrate
- Water for Beneficiation Plant from new Battle Creek Dam
- Power for Beneficiation Plant from existing Lady Annie Operations 66kV transmission lines from Gunpowder substation
- Tailing facility for Beneficiation Plant
- Transport 1000ktpa of beneficiated ore by road from Paradise South to 300ktpa Mount Isa Phosphoric Acid Plant
- Acidulate beneficiated ore to produce approximately 640ktpa of MAP/DAP
- Sulphuric acid 200ktpa from Xstrata and 200ktpa import of Sulphur for burning
- Water for the Phosphoric Acid Plant will be sourced from Lake Julius water allocation. Water transferred from Lake Julius via Clear Water Lagoon to the Mount Isa Terminal Reservoir. New pumping station and pipeline from Terminal Reservoir to on-site storage to service the Phosphoric Acid plant
- The Phosphoric Acid Plant will be powered from the Ergon Energy eastern transmission line from the Mica Creek Power Station
- Transport 640ktpa of MAP/DAP in containers on flat bed rail wagons from Mount Isa to Townsville using 2 train sets

## **Extended** Case

The preferred Expanded Case involves significantly more capital for the expansion of fertiliser production and construction of a slurry pipeline from the beneficiation plant to the phosphoric acid plant and an ammonia plant, summarised below:

- Mine up to 5,000ktpa of lower grade ore from Paradise South and potentially D-Tree if required once the Paradise North high grade ore is depleted (approx 2 years)
- Upgrade 5,000ktpa via beneficiation plant inturn to produce up to 2,000ktpa of concentrate
- Water for Beneficiation Plant from new Battle Creek Dam and/or new pipeline from Lake Julius
- Power for Beneficiation Plant upgrade from new 220kV transmission lines from Century Zinc
- Transport 2,000ktpa of concentrate by slurry pipeline from Paradise South to Mount Isa
- Upgrade Phosphoric Acid Plant to 600ktpa capacity
- Construct 250ktpa Ammonia plant
- Produce 1,200ktpa of MAP/DAP
- Sulphuric acid –200ktpa from Xstrata and 466ktpa import of Sulphur for burning
- Water for the Phosphoric Acid Plant will be sourced from Lake Julius water allocation. Water transferred from Lake Julius via Clear Water Lagoon to the Mount Isa Terminal Reservoir. New pumping station and pipeline from Terminal Reservoir to on-site storage to service the Phosphoric Acid plant
- The Phosphoric Acid Plant will be powered from the Ergon Energy eastern transmission line from the Mica Creek Power Station
- Transport 1,200ktpa of MAP/DAP in containers on flat bed rail wagons from Mount Isa to Townsville using 4 train sets

## Metallurgy

Metallurgical testing was conducted on the Paradise South phosphorite in 2010. Legend processed samples through their beneficiation flow sheet to model the relationships between ore and concentrate analyses for  $P_2O_5$  and the main impurity species Fe2O3, Al2O3, MgO and CaO.

Each sample was individually dry tumbled and screened at 25mm to remove silica. The remaining fractions were wet milled and then filtered. This slurry was then systematically conditioned with flotation reagents including a collector and an iron depressant transferred to the pilot scale flotation cell. Rougher, scavenger and cleaner flotation was completed on each sample, followed by filtering, drying, and weighing of the products. Each product was assayed for  $P_2O_{5r}$ , Fe2O3, Al2O3, CaO, MgO and SiO2.

Legend commissioned additional studies to define the behaviour of the Fe2O3 in the phosphate rock concentrates. It was found that approximately 50% of the iron content was not reporting to the phosphoric acid.

Further testing of several phosphate rock concentrate samples with varying Fe2O3 contents were acidulated with the phosphate rock concentrate and the results clearly indicated that much of the residual solids from the phosphoric acid test was goethite, an iron mineral, which resisted acidulation.

The results of this work allowed Legend to calculate the mineral reserve tonnes in terms of phosphate rock concentrate product. These samples provided a full range of phosphorite samples and variations of the primary chemical components ( $P_2O_5$ , Fe2O3, Al2O3, MgO and CaO) in the ore and the resulting primary chemical components after the initial crushing and sizing, in the flotation feed, and in the phosphate rock concentrate. From these metallurgical tests it was possible to develop high-quality, strongly correlated regression formulas to convert the ore assays to reliable estimates of the concentrate chemistry and the amount of recoverable product.

Additional tests with samples representing higher Fe2O3 contents are being planned. Positive results of those tests may result in an increase in the Paradise South reserve tonnage estimate as higher levels of Fe2O3 could potentially be processed.

## **Mining and Beneficiation Plant**

#### Stage 1

Mining of the Paradise deposits, including sourcing the mining equipment and operation will be contracted to an international mining company. Open pit mining scenario models have been calculated to estimate the costs and mine life used in the feasibility study. The base scenario considers using a combination of excavators for removing overburden and excavators or scrapers for removing ore layers. Detailed Ore Reserves compliant with JORC guidelines are currently being estimated and due for completion mid 2011 but the current estimated mining parameters are summarised below.

Figure 9: Resource Estimates for the Paradise North Deposit				
Mineral Resource	9Mt @ 27.6% <b>P₂O</b> ₅			
Potential Reserve Conversion	~90%			
Tons Ore Mined	1,250ktpa			
Average Strip ratio	2:1			
% Recovery (Dry Screening)	80%			
Feed for Phosphoric Acid Plant	1,000ktpa @ 29.5% P₂O₅			

Source: Company Report

#### Stage 2

Paradise South mining is due to commence during year 5, 2018, of the project. Open pit mining scenario models to estimate the costs and mine life have been used in the feasibility study. The mining method is the same as Paradise North and the mining parameters are summarised below.

Figure 10: Resource Estimates for the Paradise South Deposit				
Mineral Resource	55Mt @ 33% P₂O₅			
Average Strip ratio	1.1:1			
Feed for Phosphoric Acid Plant	950ktpa @ 33% P₂O₅			
Mine Life	59 years			

Source: Company Report

#### **Beneficiation**

The phosphate ore will be dry screened at Paradise North for silica removal.

#### **Flotation Plant**

The ore as mined is screened at 25mm and the oversize fraction, which is rich in silica, is discarded. The undersize fraction is fed to a rod mill and ground so that 55% of the material is reduced to less than 150 micron in size. During grinding soda ash is added to the mill to provide a slurry pH of between 9 and 10. The slurry is then fed to a hydrocyclone which provides further size classification of the particles. The cyclone underflow is recycled to the rod mill for re-grinding.

The cyclone overflow is dewatered using a belt filter to increase the solids content. This slurry is then conditioned in a stirred tank with flotation chemicals that provide hydrophobicity to the phosphate bearing minerals, enabling them to be separated from silica and carbonate gangue minerals during flotation. After conditioning, the slurry is diluted and fed to the flotation circuit where flotation cells concentrate the phosphate. The concentrate and tailings are subsequently thickened and dewatered. The concentrate is the final product that becomes the feed to Legend's phosphoric acid plant and assays at least  $32\% P_2O_5$ . The tailing is fed to the tailings dam and assays approximately  $2\% P_2O_5$ .

#### Tailings

A by-product of this flotation process will be a significant quantity of tailings, which will require storage during the life of mine. The broad tailings management strategy will be as follows:

Construct a specially designed Tailings Storage Facility (TSF) to store tailings during the "start-up" period. The duration of this period is nominally 3 to 5 years, and is basically taken to be the time required to;

Develop one or more initial tailings storage cells within the mining pits. The remaining life of mine tailings from the beneficiation plant will then be directed to a series of "inpit" cells, which will be formed, filled and closed in a sequenced manner

The preferred site for the Start-up TSF is the valley to the south of the beneficiation plant site. Three options for the configuration of a TSF within this valley have been considered, these being based on "start-up" periods ranging from 2 to 7 years to investigate the optimum efficiency (in terms of development costs versus storage capacity).

An emergency spillway will be constructed at the western abutment of the Tailings Embankment, and as an outfall chute on the crest of the Decant Embankment. Both spillways would need to be designed to pass the critical duration, 1 in 10,000 year AEP flood event.

Each of the options include Discharge Bunds and Saddle Dams of varying extents, in order to provide the required tailings head of beach, and containment of tailings at the saddles on the eastern side of the valley.

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## Mt Isa Fertiliser Plant

The construction location of the project is Mt Isa. The Queensland Government is very supportive of the project, as it believes it will add value to region and create a number of jobs. The State Government has provided Legend with the opportunity to secure land located to the south of Mount Isa at a negligible cost. The land is freehold and zoned for "Industrial Use" which means there is no requirement to negotiate Native Title compensation for this land, significantly reducing the timeframes for approval and costs of development.

The proposed development site is approximately 440 meters wide and 3,200 meters long, and is bordered to the east by the railway which runs between Mount Isa and the Port of Townsville. This site has a total area of 263.3 ha and is available for the construction of a phosphate fertiliser plant and associated infrastructure. The site is favourable due to the prevailing winds being predominately south-easterly and easterly and therefore away from Mount Isa.

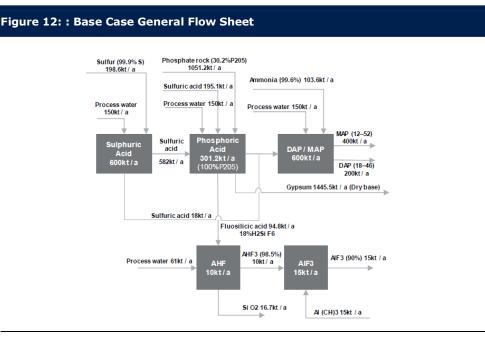
The proposed phosphate fertiliser plant is located adjacent to the Mica Creek Power Station (325MW gas-fired) and Xstrata Power Station (30MW gas-fired)

#### Figure 11: Generated Visualisation of the Mt Isa Fertiliser Complex

Source: Company Report

#### **Base Case**

The scope of preliminary design covers: 600ktpa sulphuric acid plant, 300ktpa  $P_2O_{\rm s}$  phosphoric acid plant, 600ktpa MAP/DAP plant, 15ktpa aluminium fluoride plant as well as corresponding utilities and auxiliary facilities.



Source: Company Presentation

#### **Sulphuric Acid Plant**

Production of sulphuric acid from sulphur burning with a Heat Recovery System (HRS) is to be adopted for the sulphuric acid plant. It includes: the main sulphuric acid plant, circulating water, power generation by waste heat, HRS, demineralised water preparation and supply system associated with waste heat utilization, molten sulphur, liquid sulphur storage and conveyance system etc.

#### **Phosphoric Acid Plant**

The dihydrate process is to be adopted for the phosphoric acid plant. It includes: rock grinding, phosphoric acid reaction, filtering, acid storage, phosphoric acid concentration, phosphoric acid circulating water, supporting power supply system, product acid storage, wet process slag pipeline of phosphogypsum etc.

The feed phosphate rock slurry is carried by pipeline from the Paradise South beneficiation plant to the phosphate rock slurry tank within the battery limit.

Wet process slag draining is adopted for phosphogypsum slag, and the slag yard is built in south of the field, with an area of 90 hectares and capacity of about 11 years phosphogypsum.

#### **Ammonium Phosphate Plant**

The scope of the design of the ammonium phosphate plant includes: main ammonium phosphate plant, bulk product storage and finished product conveyance system etc.

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#### **Ammonia Plant**

It is only proposed to construct an ammonia plant for the Expanded Case. For the base case ammonia would be imported via Townsville and transported via rail to Mount Isa. If the extended case is implemented the ammonia plant would be composed of a natural gas distribution station, natural gas desulfurization, gas making unit, conversion, methanation unit, decarbonisation unit, compression unit, ammonia synthesis and refrigeration unit, hydrogen & ammonia recovery unit as well as ammonia storage unit.

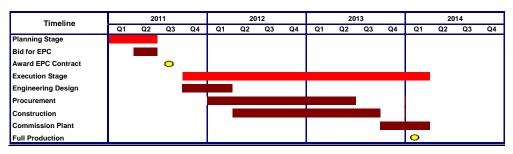
#### **Aluminium Fluoride Plant**

An anhydrous hydrogen fluoride (AHF) plant produces anhydrous hydrogen fluoride by a decomposition reaction between sulphuric acid and 18% H2SiF6 generated in phosphoric acid production. The gaseous AHF is then reacted with dry aluminium hydroxide to produce aluminium fluoride.

The scope of design includes the main AHF and aluminium fluoride plants, all auxiliary facilities and associated facilities within the battery limit of the aluminium fluoride plant. It includes: AHF plant, AHF storage tank farm, fluorosilicic acid tank farm, aluminium fluoride plant, chilled water station, and substation etc.

#### **Auxiliary Facilities**

Other corresponding supporting utilities and auxiliary facilities, including general watersupply and sewerage, power supply of whole plant, pipe rack, heat power station, air compressor station, special line of industrial railway, maintenance and domestic auxiliary facilities etc.

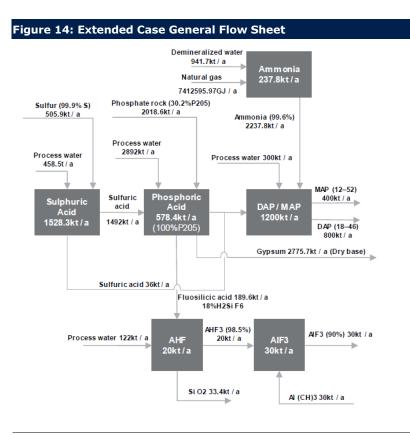


#### Figure 13: Fertiliser Complex Schedule

Source: Company Report

#### **Extended Case**

The scope of preliminary design covers: 1,600ktpa sulphuric acid plant, 600ktpa  $P_2O_5$  phosphoric acid plant, 1,200ktpa MAP/DAP plant, 240ktpa Ammonia plant, 30ktpa aluminium fluoride plant as well as corresponding utilities and auxiliary facilities.



Source: Company Presentation

## **Logistics and Infrastructure**

#### Road

In the base case scenario transportation of the beneficiated phosphate rock to the fertiliser plant will be by road transport. The proposed mining and beneficiation sites are in close proximity to the Barkly Highway a gazetted heavy vehicle route which is the major northern arterial road out of Mt Isa. The existing road between the highway and the development site will be upgraded.

In the extended case Legend is considering a 13.5" (345mm) diameter (nominal) slurry pipeline system, to transport up to 3.0 Mtpa phosphate concentrate from the Paradise South Mine Site, to Mt. Isa. Additionally, a 15" diameter (nominal) water return pipeline, separate from the slurry pipeline but in the same corridor, is being considered.

#### Rail

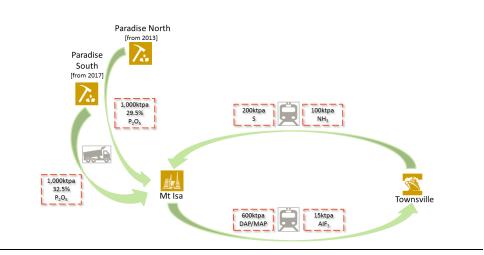
During 2010, Legend and rail operators P&O Trans Australia and Queensland Rail commenced negotiations for a rail access agreement for the transport of approximately 700ktpa of phosphate products from Mount Isa to Townsville and the transport of sulphur and ammonia between Townsville and Mount Isa.

Queensland Rail confirmed that subject to the successful execution of an access agreement including agreement of a rail operating plan, the required capacity in the form of train paths is currently available for the proposed operations.

#### Port

There is currently sufficient pier side storage and berth capacity available with direct rail access to export approximately 1Mtpa of phosphate fertiliser products. This is sufficient to support the Base Case project. In order to export 1.2Mtpa or more of phosphate fertiliser products and any potential beneficiated rock phosphate a new berth is required at the Port of Townsville. Preliminary design works have been completed into a new berth, called Berth 12, with bulk storage facility, portal reclaimer, rail receival and wharf conveyors.

#### Figure 15: Commodity Flow and Infrastructure Utilisation



Source: Company Presentation

## Environment

The rights and obligations of the Company with respect to environmental management and rehabilitation are based upon the principles of disturbance minimisation, including such things as preservation of mature trees, preventing the spread of noxious weeds, avoiding the disturbance of waterways and waste management. Rehabilitation is a condition of the Security bond and requires such things as sealing of collars, plugging of casings and replacement of topsoils. Legend takes responsibility to ensure all high impact exploration activities are rehabilitated soon after they are completed. During 2009 Legend conducted rehabilitation on drilling activities from 2008.

#### Figure 16: Regulatory Approval Summary

Mine lease	Environmental approval	Native Title approval	Other landholder consents	Projected date of mine lease grant
D-Tree North	$\checkmark$	$\checkmark$	~	Granted 12 August 2010
Paradise North	$\checkmark$	~	$\checkmark$	Q2 2011
Paradise South	Voluntary EIS	RTN approved	Pending	Q1 2012
Fertiliser Plant	Development application submitted	N/a	N/a	Q3 2011

Source: Company Report

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# North Australia Diamonds

North Australian Diamonds Limited is a listed public company on the Australian Stock Exchange trading under the symbol "NAD". The Company is developing its flagship Merlin Diamond Mine Project in the Northern Territory, Australia and is engaged in extensive exploration for additional sources of diamonds in and around Merlin. Exploration is also taking place in the Company's tenement holdings associated with its North Kimberley, Yambarra and Arnhem Land projects.

## **Top End Uranium**

Top End Uranium is a uranium focused exploration company which controls through farm-in arrangements with NAD, one of the largest portfolios of highly prospective exploration tenements in the Northern Territory, Australia. Its tenement holding covers an area aggregating approximately 8,221,430 acres across three project areas, Arnhem Land Project Area, Yambarra Project Area and the McArthur South Project Area

# **Northern Capital Resources**

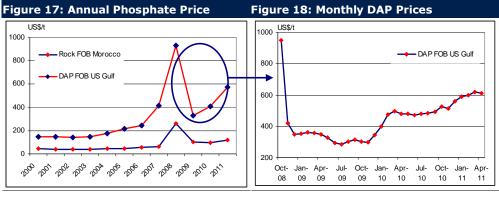
Legend holds a 31.46% interest in Northern Capital Resources Corp ("NCRC"), an unlisted US corporation. NCRC is an emerging corporation in the North American and Australian gold and base metal markets. The combined primary assets of Northern Capital Resources Corporation are five gold properties in Nova Scotia, which contain NI 43-101 compliant resource base of 1.7Moz Au; 626 Koz (measured & indicated), and 1.1 Moz (inferred) and a portfolio of exploration tenements in the Slave Craton and Committee Bay Project Area in Canada.

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# **Market Summary**

## Phosphate

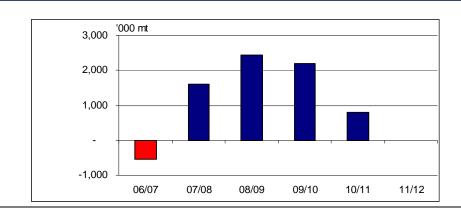
Fertiliser prices have been very volatile over the last few years. Prices rallied strongly with commodities in general through 2007 and into 2008. The high prices caused farmers globally to ration supplies and run down stocks. During 2008 a sharp fall in demand was exacerbated by the global recession. In 2010 demand re-emerged and prices have recovered to relatively high levels due to favourable agricultural commodity prices, tight supply and lean inventories due to the previous destocking. Demand has surfaced from farmers wanting to maximize yields of their crops. Incentives are being giving to increase production in countries such as India and China as escalating food inflation becomes a high profile agenda in the political arena. High agricultural prices are giving incentive to market based producers such as Australia, Brazil and the US.



Source: Bloomberg

Source: Bloomberg

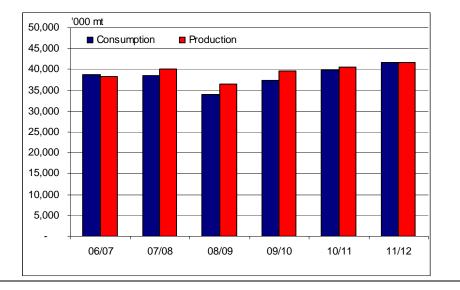
In the short term it appears that the phosphate market could be challenged by a number of years of surplus production and a significant increase in global capacity. The most notable increase with be the commissioning of the Ma'aden plant in Saudi Arabia later in 2011. Initial production will be approximately 3mtpa of DAP/MAP. Capacity will also come online in Morocco, China and India. This capacity expansion has been prompted by prices reaching very attractive prices on a couple of occasions over the last few years. The influence of these factors on fertiliser and agricultural prices is yet to be seen but the International Fertiliser Association estimates increased demand will be enough to account for the majority of the increased capacity and any surplus stocks. This indicates that the phosphate fundamentals are moving towards a balanced level after 4 years in surplus.



#### Figure 19: Global Phosphate Balance Estimates

Source: IFS and Patersons

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#### Figure 20: : Phosphate Global Supply and Demand Estimates

Source: IFA & Patersons Estimate

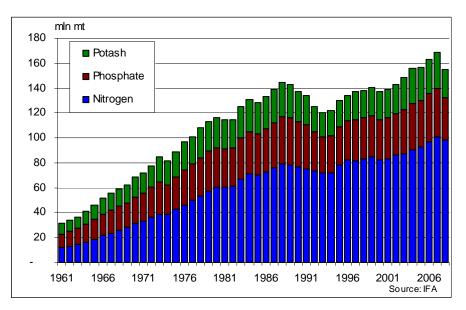
Fertiliser consumption increased at a relatively slow rate from the late 80s to last year. This was after an extended period of rapid expansion from the middle of last century to the mid 80s. The slow down in consumption over the last 20 to 30 years can be partially attributed to the better utilisation and development of fertilisers and the mechanisation of farming processes. The onset of the global financial crisis and the preceding high prices has meant that investment in the agricultural sector has been sporadic and now as we look past the short term market influences the long term global outlook for fertilisers appears very positive. Demands on agricultural production are expected to increase considerably due to:

- global population growth,
- changing diets and increasing per capita consumption in developing and emerging nations; and
- the increasing worldwide acceptance of bio fuels.

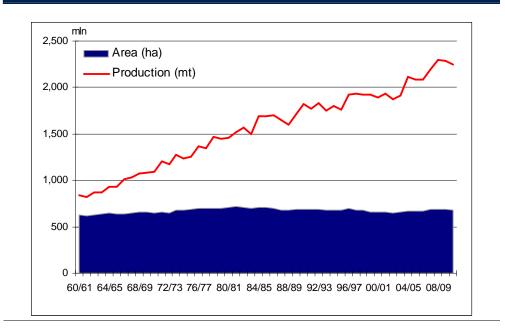
To meet these future demands, crop productivity will be required to continue its progressive improvement, as it has done over the last 50 years. Marginal and depleted arable land which has been neglected in the past will need to be utilized by increasing nutrient levels. The easiest and most cost effective way to do this is through fertiliser application.

The seaborne phosphate market is relative condensed geographically on an origin basis with the majority of exports of phosphate products coming from the United States and the MENA (Middle East and North Africa) regions. Destinations are geographically diverse although South and East Asian nation are the end destination for almost 60% of processed phosphate products.

#### Figure 21: Global Fertiliser Consumption



Source: IFA



#### Figure 22: Global Grain Production and Area

Source: USDA

## **Aluminium Fluoride**

Aluminium fluoride is currently used as a conditioning agent for the molten electrolyte of aluminium oxide. It lowers the temperature of electrolysis, improves electrical conduction performance and reduces the mole ratio. These properties make aluminium fluoride a

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favourable product to use in the electrolysis of aluminium oxide. Aluminium fluoride can also be used for the ceramics industry, solder and catalyst industries.

At present, approximately 95% of total aluminium fluoride is used in the aluminium electrolysing industry. Global aluminium production in 2006 was 31,930,000t. Assuming that 25 kg (including aluminium fluoride demanded for starting electrolytic cell calcination) aluminium fluoride is consumed to produce a tonne of aluminium, a total 798,000t of aluminium fluoride is needed.

The global aluminium industry has been transferring to South America and Australia in recent years, where supply of fluoride salt is mainly dependant on imports. There has never been a fluoride salt production plant in Australia due to limited fluorspar resources, environmental protection and other factors. According to Wengfu, the price of aluminium fluoride on the international market is estimated in the range of US\$1,800-2,000/t over the next five years. Legends current feasibility study and our valuation uses long term price estimates of US\$1903/t on a Townsville FOB basis.

## Sulphur

World sulphur resources are relatively abundant and have two principal sources; i) sulphur mining, and ii) sulphur recovered from petroleum, natural gas, pyrite and non-ferrous metal metallurgy. Presently the principal source of sulphur in the world is to recover from the refining process of natural gas and oil. With development of the international energy industry, the amount of sulphur recovered from oil and natural gas etc. increases continuously.

From the 1990s to present day, the most significant changes to the global sulphur market has been the substantial increase in demand for sulphur in the Chinese phosphate fertiliser industry and the transition from pyrite-based sulphuric acid plants to acid production via sulphur burning. China's import of sulphur has increased from 500ktpa in the mid 1990s to 8.8 Mtpa in 2006.

The international sulphur price has undergone two significant increases over the last decade when the sulphur price rose from a steady rate US\$20/t to between US\$60-100/t. In 2008, the international sulphur price rose rapidly to US\$800/t but in the second half of 2008, sulphur prices dropped to US\$40-50/t.

According to Wengfu, it is predicted that the sulphur price on the international market will be approx. US\$60 per ton over the next five years. Legends current feasibility study and our valuation uses a long term price estimates of US\$90 per tonne on a Townsville cfr basis.

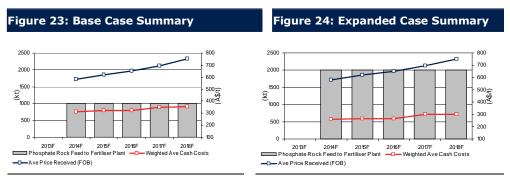
#### Ammonia

Ammonia is supplied in two ways: one is by purchasing from the market and the other is by production at a captive plant. According to the IFA global synthetic ammonia production (NH3) will grow from 176.3Mt in 2007 to 210.3Mt in 2012. One third of the growth will be achieved by improvements and expansions of existing plants. The remaining two thirds comes from the construction of approximately 50 new ammonia plants, of which 50% are to be located in China.

In November 2010, the Middle East synthetic ammonia FOB price was 380-390 USD/t. Legends current feasibility study and our valuation uses a long term price estimate of US\$345/t on a Townsville cfr basis.

# Valuation

The valuation uses cash flows from future sales revenue based on a long term average DAP export price of US\$515/t FOB Tampa. CRU has done a study on the global phosphate market for the company and this price is within 2% of CRU's 10 year average price of DAP. A premium of US\$30/t has been added to the export price to reflect export differential between Townsville and Tampa shipping costs to major Asian export markets. The long term Aluminium Fluoride price has been estimated as US\$1900/t. Average unit operating costs have been estimated as US\$343/t of DAP produced for stage one of the base case and US\$373/t of DAP produced for stage two. Average operating expenses for the expanded case are US\$329/t. The revenue created from the Aluminium Fluoride provides a credited to cost base of US\$68/t of DAP produced.



Source: Patersons Estimates

## Funding

The Paradise project requires significant funding. It is estimated the base case will require US\$645m to complete the Mt Isa fertiliser complex and develop the Paradise North mine in the first two years. An additional US\$154m will be required within the first five years to bring Paradise South with a beneficiation plant on-line.

The expanded case is estimated to require US\$1,760m over four years. At the higher mining rate modelled for the expanded case, Paradise North mine with be deleted of high grade phosphate rock within two years. This will require the beneficiation plant to be commissioned within this time frame.

Any future funding mix was not taken into account due to the large mix of options available such as equity, debt, JV, Offtake Agreement, partner sell down or a mix of any of the above. The per share valuation of Legend will depend on when and how these funds are raised. We believe that management will be able to entertain a number of options to raise funds and keep dilution of value to a minimum. This is due to the calibre of the strategic partner Legend is pursuing and the company's wealth of knowledge and contacts in the mining and financial community.

## Milestones

We believe that Legend has a very promising project with a lot of potential. If Legend is to realise this potential and accomplish its goal in becoming one of the world's leading suppliers of Phosphate and Fertiliser products there are a number of milestones that it will need to achieve. This should effectively de-risk the project as Legend move towards utilising its beneficiation plant and fertiliser complex at full capacity. We have based of valuation of both the base and expanded case around the following milestones.

#### **Completed Milestones**

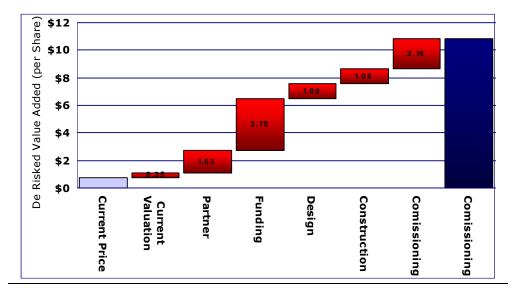
- ✓ Exploration License
- Resource
- Mining Lease

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- Environmental Approvals
- ✓ Reserve Estimates

#### **Required Milestones**

- Strategic Partner
- > Raise funds for the total capital expenditure requirement through issuing debt and/or equity.
- Complete design and procurement stage of beneficiation plant and fertiliser complex including the completion of any negotiation to secure rail and port access.
- > Construction of the beneficiation plant and fertiliser complex
- > Successful commissioning of the beneficiation plant and fertiliser complex
- Ramp up operations to full capacity



#### Figure 25: Waterfall Chart of Value Attributed to the Expanded Case Milestones

Source: Patersons Estimate

## **Risked Valuation**

The free cash flows from the valuation assumptions have been discounted at 10% to establish an NPV of US\$ 1,100 for the base case and US\$ 2,400 for the expanded case. We believe that the full value of these cash flows will only be realised if all milestones have been achieved within the estimated timeframe and budget. Assuming no dilution due through equity raising a potential value has been assigned on the successful completion of each milestone.

There is empirical evidence that shares behave in this manner. Fortescue Metals Group (FMG) is one example. In early 2005 FMG was a junior iron ore exploration company trading around 0.40 - 0.50 per share. It had just completed defining its resource and the definitive feasibility study. As the company moved through the stages from raising the required funds to shipping its first cargo of ore the share price increased 20 fold to \$8.00 per share.

All information and advice is confidential and for the private information of the person to whom it is provided and is provided without any responsibility or liability on any account whatsoever on the part of this firm or any member or employee thereof.

#### **Base Case**

Figure 26: Estimated Share Value on Milestone Achievement								
	Current	Partner	Funding Completed P	0	Construction	Successful Commissioning		
Progression Factor	15.0%	30.0%	65.0%	75.0%	85.0%	100.0%		
Per Share Valuation (US\$)	\$1.05	\$2.09	\$4.53	\$5.23	\$5.93	\$6.97		

Source: Patersons Estimate

#### **Expanded Case**

The expanded case is the preferred project that management would like to pursue. The higher capex requirement of the project implies a higher risk to delivering value to shareholders. If this project is completed it will have similar production to Incitec Pivot fertiliser production which totalled 450kt of Urea and 970kt of DAP at an average price of US\$423/t for the 2010 financial year. Legend's production at full capacity of DAP and MAP at the Mt Isa fertiliser complex is estimated to be 1,200 to 1,300ktpa. The Legend model can also attribute the Aluminium Fluoride production against its cost base resulting in it being a low cost producer, in the 1<sup>st</sup> quartile of the global cost curve.

Figure 27: Estimated Share Value on Milestone Achievement								
	Current	Partner	Funding	Design &	Construction	Successful		
			Completed P	rocurement		Commissioning		
Progression Factor	15.0%	30.0%	65.0%	75.0%	85.0%	100.0%		
Per Share Valuation (US\$)	\$1.53	\$3.06	\$6.64	\$7.66	\$8.68	\$10.21		

Source: Patersons Estimate

## Risks

We have identified a number of risks associated with Legend that need to be considered in any valuation. These risks may all impact the valuation of the company and include but are not limited to the following:

#### **Resource Prices**

Resource prices can fluctuate widely and have done so in recent years. Price can be influenced by economic and political trends; government regulation; interest rates; global or regional consumption; and global production levels. We have completed the following sensitivity analysis on the Paradise project valuation using  $\pm$  15% sensitivity on the assumed DAP/Map price.

Figure 28: NPV Sensitivity Analysis of the Expanded Case								
Movement	-15%	-10%	-5%	0%	5%	10%	15%	
DAP Price (US\$/mt)	1,916.40	2,015.78	2,115.57	2,215.37	2,315.17	2,414.96	2,514.76	

Source: Patersons Estimate

Regulatory & Environmental Risk: The Company's operations are subject to several environmental risks. A breach of such an act may result in imposition of heavy fines and penalties, impacting the Company's activities adversely. Current and future environmental laws, regulations and measures could entail unforeseeable additional costs; capital expenditures; and restrictions or delays in the Company's activities. Environmental regulations and standards are subject to constant revision and could be substantially tightened which could have a serious impact on the Company and its ability to develop its properties economically.

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egend International Ltd	OTC:BB Case A\$m	\$0.73	Commodi
Valuation of the Expanded C varadise North & South	2280	A\$/sh 10.08	Commodi
			A\$:US\$
orth Australia Diamonds	21	0.09	DAP/MAP (U
amond Holdings	4	0.02	Phosphate F
orporate Costs	(36)	(0.16)	Ammonia (U
ash	45	0.20	Alumium Flo
ebt	(3)	(0.01)	Productio
			Production
			Paradise No
			Total Produ
tal @ 10% Discount Rate	2311	10.21	
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aluation Summary of Oper			Alumium Flu
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		- 700	Interest
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1500		- 500@	Abnormals
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		- 400	INFAI
1000		- 400	
1000		- 4005	
			Normalised
500		- 300	Normalised Cash Flov
1000		- 300	Normalised Cash Flov Adjusted Ne
		- 300	Normalised Cash Flov Adjusted Ne + Interest/Ta
		E 2018E	Normalised Cash Flov Adjusted Ne + Interest/Ta - Interest/Ta
1000 500 0 20113E 20114E		- 300 - 200 - 200 - 100 - 200 - 200 - 200 - 200 - 200	Normalised <u>Cash Flov</u> Adjusted Ne + Interest/Ta - Interest/Ta + Depn/Amo +/- Other
1000 500 500 2013E 2014E 2014E Phosphate Rock Feed to Fe 	rtiliser Plant — — Weighted Av		Normalised <u>Cash Flov</u> Adjusted Ne + Interest/Ta - Interest/Ta + Depn/Ame +/- Other Operating O
1000 500 500 500 500 500 500 500	rtiliser Plant — Weighted Av	-         -         300           -         -         200           -         2018E         100           -         20176         17%	Normalised Cash Flov Adjusted Ne + Interest/Ta - Interest/Ta + Depn/Amo +/- Other Operating C - Capex (+a
1000 500 500 500 500 500 500 500	rtiliser Plant — — Weighted Av		Normalised <u>Cash Flov</u> Adjusted Ne + Interest/Ti - Interest/Ti + Depn/Amo +/- Other <u>Operating</u> - Capex (+a - Working C
1000 500 500 500 500 500 500 500	rtiliser Plant — Weighted Av	-         -         300           -         -         200           -         2018E         100           -         20176         17%	Normalised <u>Cash Flov</u> Adjusted Ne + Interest/Ta + Depn/Amc +/- Other Operating Q - Capex (+a - Working C Free Cashfil - Dividends
1000 500 2013E 2014E	rtiliser Plant — — — — Weighted Av Inferred Historic Non JORC Historic Non JORC	Mt         P205           72         17%           293         17%           193         18%	Normalised Cash Flov Adjusted Ne + Interest/Ta + Depn/Amc +/ Other Operating - Capex (+a - Working C Free Cashfi - Dividends + Equity rais
1000 500 500 500 501 501 501 501	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           193         18%           305         15%	Normalised Cash Flov Adjusted Ne + Interest/Ta - Depn/Amu +/- Other Operating Q - Capex (+a - Working C Free Cashf - Dividends + Equity rais + Deb draw
1000 500 500 500 500 500 500 500	rtiliser Plant — — — — Weighted Av Inferred Historic Non JORC Historic Non JORC	Mt         P205           72         17%           293         17%           193         18%	Normalised Cash Flov Adjusted Ne + Interest/Ta + Depn/Amc +/ Other Operating ( - Capex (rd - Working C Free Cashfl - Dividends + Equily rais + Debt draw Net Change
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           193         18%           305         15%	Normalised Cash Flov Adjusted Ne + Interest/Ta + Depn/Amc +/ Other Operating ( - Capex (rd - Working C Free Cashfl - Dividends + Equily rais + Debt draw Net Change
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           193         18%           305         15%           305         15%           305         16%	Normalised Cash Flov Adjusted Ne + Interest/Ta - Interest/Ta - Depn/Amn +/- Other Operating Q - Capex (+a - Working C Free Cashff - Devidends + Devid draw Net Cashf(L on Net Cashf(L
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           309         16%           309         16%           Positi         President & Classical	Normalised Cash Flov Adjusted Ne + Interest/Ta - Depn/Arm +/- Other Operating Q - Capex (+a - Working C Free Cashfil - Dividends + Equity rais + Deb draw Net Change Cash at Enc Do
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           193         18%           305         15%           305         15%           305         16%	Normalised Cash Flov Adjusted Ne + Interest/Ta - Depn/Arm +/- Other Operating Q - Capex (+a - Working C Free Cashfil - Dividends + Equity rais + Deb draw Net Change Cash at Enc Do
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           309         16%           309         16%           Positi         President & Classical	Automatised           Cash Flov           Adjusted Ne           Adjusted Ne           Interest/Ta           Interest/Ta           - Depn/Amc           +/- Other           Operating (           - Capex (+a           - Working C           - Dividends           + Debt draw           Net Cash/(L           Co           Balance S
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Positin President & CE Managing Direct Non-Executive Direct	Normalised           Cash Flov           Adjusted Ne           Interest/Ta           Interest/Ta           - Interest/Ta           - Depn/Arm           - Capex (+a           - Other           - Oragex (+a           - Dividends           - Debt draw           Net Cash/LL           Or           Balance S           For
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Positife President & CE Managing Direct Non-Executive Direct Non-Executive Direct	Normalised           Cash Flow           Adjusted Ne           - Interest/Ta           - Interest/Ta           - Interest/Ta           - Interest/Ta           - Depn/Arm           +/- Other           Operating Q           - Dividends           - Dividends           - Debt draw           Net Cash/L           Cor           Balance S           or           Cash/Bullio           or           Total Asset
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Managing Direct         Managing Direct           Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct	Normalised           Cash Flov           Adjusted Ne           + Interest/Ta           - Interest/Ta           - Unterest/Ta           - Depn/Amc           + /- Other           Operating 0           - Capex (+a)           - Dividends           + Dept/draws           + Capex (+a)           - Dividends           + Dept/draws           Net Cash/L           Or           Cash A Setto           Or           Total Asset
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           President & CE Managing Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct	Automatised           Cash Flov           Adjusted Ne           + Interest/Ta           + Interest/Ta           + Depn/Amc           +/- Other           Operating / Capex (+a           - Vorking C           - Dividends           - Dividends           - Det draw           Net Cash/(Licon)           Co           Data           Co           Cash Relinitor           Cash/Balance S           Cor           Total Asset:           Cor           Total Debt
1000 500 500 500 500 500 500 500	Inferred Historic Non JORC Historic Non JORC Inferred	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Managing Direct         Managing Direct           Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct	Anormalised           Cash Flov           Adjusted Ne           Hintersof/Te           Interest/Te           Depn/Amd           +/ Other           Operating           - Capex (+a           - Working C           - Dividends           + Equity rait           + Debt draw           Net Cash/(L           Co           Cash XE Cash/(L           Co           Cash/Sullio           Cor           Total Asset           Cor           Total Debt
1000 1000	Inferred Historic Non JORC Historic Non JORC Inferred Historic Non JORC	Mt         P205           72         17%           293         17%           193         18%           309         16%           309         16%           Non-Executive Direct         Non-Executive Direct	Normalised           Cash Flov           Adjusted Ne           Interest/Ta           Interest/Ta           Dependance           Operating Q           Cash (Pac           Operating Q           Casex (Pac           Dividends           Equity rais           Debt draw           Net Cash/L           Or           Cash At Enc           Or           Cash/L           Or           Cash/L           Or           Cash/L           Or           Cash/Dubit           Or           Total Asset           Or           Or Total Liabili           Or
1000 500 500 500 500 500 500 500	rtiliser Plant ————————————————————————————————————	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Positing           President & CC           Managing Direct           Non-Executive Direct	Automalised           Cash Flov           Adjusted Ne           - Interest/Ta           - Interest/Ta           - Depr/Am           +/- Other           Operating ( Capex (+a           - Vorking C           - Dividends           - Dividends           - Det draw           Net Cash/(Licon)           Corr           Cash At Enconom           Or           Cash/Balance S           Corr           Cash/Bullio           or           Total Assettor           Total Labili           or           Total Labili           or           Shareholde
1000 500 500 500 500 500 500 500	rtiliser Plant ————————————————————————————————————	Mt         P205           72         17%           193         18%           305         15%           339         16%           Positin President & CE Managing Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct           Non-Executive Direct Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct	Normalised           Cash Flov           Adjusted Ne           - Interest/Ta           - Interest/Ta           - Interest/Ta           - Interest/Ta           - Deprint           - Operating           Operating           - Capex (+a           - Working C           - Puividends           - Debt draw           Net Cash/L           Or           Balance S           or           Total Asset           or           Total Liabili           or           Sherbolde           Ratios           Net Debt/Edt
1000 500 500 500 500 500 500 500	rtiliser Plant ————————————————————————————————————	Mt         P205           72         17%           293         17%           193         18%           305         15%           339         16%           Positir           President & CE           Mon-Executive Direct           Non-Executive Direct           Non-Executiv	Normalised           Cash Flov           Adjusted Ne           + Interest/Ta           + Interest/Ta           + Depr/Amc           + Depr/Amc           + Other           Operating Q           - Capex (+a           - Dividends           + Detrividends           + Detrividends           - Dividends           - Capex (+a)           - Dividends           - Detrividends           - Capex (+a)           - Detrividends           - Detrividends           - Cash (Labilition)           - Cash/Bullio           - Total Asset:           - Total Labilition           - Total Labilition           - Total Labilition           - Ratios           Net Debt/Ec           Interest Co
500 0 2013E 2014E Phosphate Rock Feed to Fe	rtiliser Plant ————————————————————————————————————	Mt         P205           72         17%           193         18%           305         15%           339         16%           Positin President & CE Managing Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct Non-Executive Direct           Non-Executive Direct Non-Executive Direct         Non-Executive Direct           Non-Executive Direct         Non-Executive Direct	Normalised           Cash Flov           Adjusted Ne           - Interest/Ta           - Interest/Ta           - Interest/Ta           - Depn/Arm           - Other           Operating Q           - Capex (+a:           - Dividends           - Equity rais           + Equity rais           + Equity rais           - Dividends           - Other draw           Net Cash/L           Or           Cash Re Cash/L           Or           Cash/Reverse           Or           Cash/Reverse           Or           Cash/Reverse           Or           Cash/Reverse           Or           Or           Cash/Reverse           Or           Or

Year End Dec 31							
Commodity Assumptions	2010A	2011F	2012F	2013F	2014F	2015F	
A\$:US\$	0.93	1.00	0.99	0.85	0.80	0.80	
DAP/MAP (US\$/t FOB)	0.00	0.00	0.00	0.00	0.00	0.00	
Phosphate Rock (US\$/t FOB)	0.00	0.00	0.00	0.00	0.00	0.00	
Ammonia (US\$/t FOB)	0.00	0.00	0.00	0.00	0.00	0.00	
Alumium Floride (US\$/t FOB)	0.00	0.00	0.00	0.00	0.00	0.00	
Production Summary	2010A	2011F	2012F	2013F	2014F	2015F	
Production (kt) Feed for Phosphorus Aci	id Plant						
Paradise North & South					2000	2000	
Total Production					2000	2000	
Cost Summary (A\$/t)							
Paradise North & South					295.65	305.61	
Alumium Fluoride Credit					37.02	39.32	
Weighted Ave Cash Costs with AIF3 Cr Ave Price Received (FOB)	redit				258.64 582.02	266.29 618.22	
Profit & Loss (A\$m)	2010A	2011F	2012F	2013F	2014F	2015F	
Sales Revenue	0.00	0.00	0.00	0.00	744.98	791.32	
Other Income Operating Costs	2.9 0.0	2.9 0.0	1.1 0.0	(18.8) 0.0	(57.1) 378.4	(66.7) 391.2	
Exploration Exp.	25.7	9.3	0.0	0.0	0.0	0.0	
Corporate/Admin	13.8	13.8	3.2	3.3	3.3	3.4	
EBITDA	(36.5)	(20.1)	(2.1)	(22.1)	306.2	330.0	
Depn & Amort	1.4	1.4	0.0	18.2	107.7	135.8	
EBIT MRRT	(37.9) 0.0	(21.5) 0.0	(2.1) 0.0	(40.2)	198.5 0.0	194.2 0.0	
Interest	0.0	0.0	0.0	0.0	0.0	0.0	
Operating Profit	(37.9)	(21.5)	(2.3)	(40.4)	198.3	194.1	
Tax expense	0.0	0.0	(0.7)	(12.1)	59.5	58.2	
Minorities Abnormals	(3.8)	(3.8)	0.0	0.0	0.0	0.0 0.0	
NPAT	(34.1)	(17.7)	(1.6)	(28.3)	138.8	135.9	
Normalised NPAT	(34.8)	(17.7)	(1.6)	(28.3)	138.8	135.9	
Cash Flow (A\$m)	2010A	2011F	2012F	2013F	2014F	2015F	
Adjusted Net Profit	(34.1)	(17.7)	(1.6)	(28.3)	138.8	135.9	
+ Interest/Tax/Expl Exp - Interest/Tax/Expl Inc	25.7 0.0	9.3 7.5	(0.5) (0.5)	(12.0) (12.0)	59.6 59.6	58.4 58.4	
+ Depn/Amort	1.4	1.4	0.0	18.2	107.7	135.8	
+/- Other	(2.8)	0.0	0.0	0.0	0.0	0.0	
Operating Cashflow	(9.8)	(14.5)	(1.6)	(10.1)	246.5	271.7	
- Capex (+asset sales)	6.4	6.4	362.6	750.6	479.1	259.7	
- Working Capital Increase Free Cashflow	0.0 (16.3)	0.0 (21.0)	0.0 (364.2)	0.0 (760.7)	0.0 (232.5)	0.0 12.0	
- Dividends (ords & pref)	0.0	0.0	0.0	0.0	0.0	0.0	
+ Equity raised	2.5	2.5	0.0	0.0	0.0	0.0	
+ Debt drawdown (repaid) Net Change in Cash	2.4 (21.8)	(0.6) (29.5)	(0.2) (364.4)	(0.3)	(0.3)	(1.8) <b>10.2</b>	
Cash at End Period	50.9	21.3	(343.1)	<b>(761.0)</b> (1104.0)	(232.8) (1336.9)	(1326.7)	
Net Cash/(LT Debt)	50.9	18.5	(345.7)	(1106.4)	(1339.0)	(1328.5)	
Balance Sheet (A\$m)	2010A	2011F	2012F	2013F	2014F	2015F	
Cash/Bullion	50.9	21.3	-343.1	-1104.0	-1336.9	-1326.7	
Total Assets	104.7	85.9	82.1	53.6	229.4	403.0	
Total Debt	0.0	2.8	2.6	2.4	2.1	1.8	
Total Liabilities	31.0	12.3	10.0	9.8	46.8	84.5	
Shareholders Funds	73.6	73.6	72.1	43.8	182.6	318.5	
Ratios							
Net Debt/Equity (%)	-69.1	-25.1	479.7	2525.8	733.2	417.1	
Interest Cover (x) Return on Equity (%)	na na	na na	-12.2 na	-259.8 na	1437.9 76.0	1617.4 42.7	

**Stock recommendations:** Investment ratings are a function of Patersons expectation of total return (forecast price appreciation plus dividend yield) within the next 12 months. The investment ratings are Buy (expected total return of 10% or more), Hold (-10% to +10% total return) and Sell (> 10% negative total return). In addition we have a Speculative Buy rating covering higher risk stocks that may not be of investment grade due to low market capitalisation, high debt levels, or significant risks in the business model. Investment ratings are determined at the time of initiation of coverage, or a change in target price. At other times the expected total return may fall outside of these ranges because of price movements and/or volatility. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. This Document is not to be passed on to any third party without our prior written consent.



#1 Stock picker in Real Estate - Jonathan Kriska #1 Stock picker in the Metals and Mining - Josh Welch #2 Stock picker in Energy - Andrew Harrington

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