## Rare Earths WE TOUCH THEM EVERYDAY

**Investor Presentation** 



















May 2011













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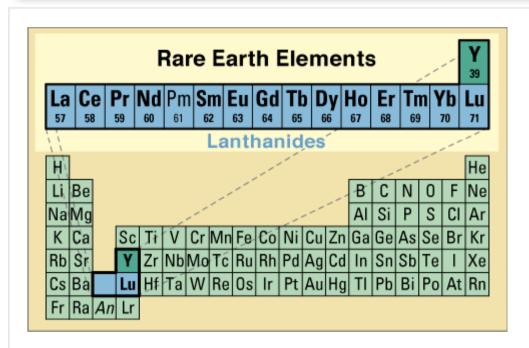




# Rare Earths cannot be substituted in many applications



### RARE EARTHS: LANTHINIDES PLUS YITTRIUM – UNIQUE PROPERTIES



- Chemical
  - ➤ Unique electron configuration
- Catalytic
  - ➤ Oxygen storage and release
- Magnetic
  - High magnetic anisotropy and large magnetic moment
- Optical
  - > Fluorescence, high refractive index
- Electrical
  - ➤ High conductivity
- Metallurgical
  - ➤ Efficient hydrogen storage in rare earths alloys









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# Rare Earths underpin new materials technology required to sustain the needs of today's society



### **Energy efficiency through lower consumption**

### **Environmental protection** through lower emissions

Smaller yet more powerful digital technology



- Compact Fluorescent Lights
- Hybrid vehicle
- Weight reduction in cars



- Wind turbine
- Auto catalytic converter
- Diesel additives



- Flat panel displays
- Disk drives
- Digital cameras







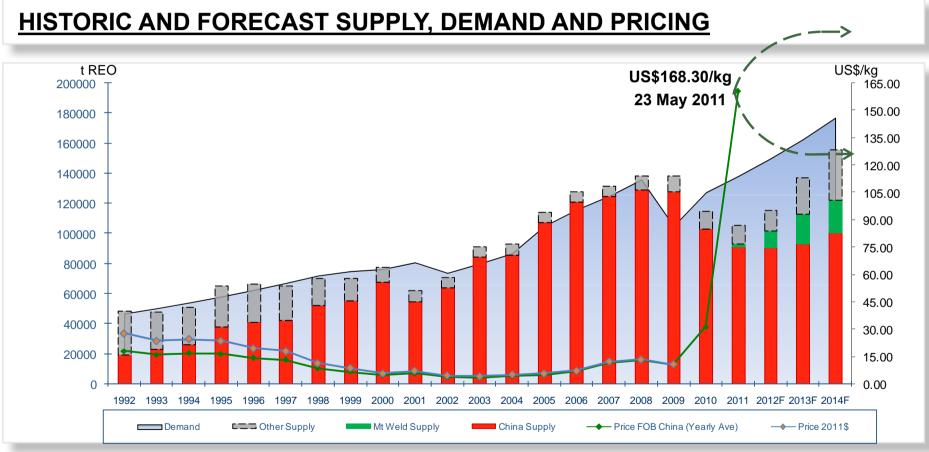


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# Supply shortfall and increasing prices are a result of structural change as China addresses environmental and mining issues

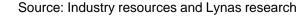














# Magnets will be the growth driver for Rare Earths demand to 2014. Polishing powder demand has dropped due to activities to improve productivity



### **DEMAND FORECAST BY APPLICATION**

2010 Demand by Application				
Application	Demand (%)	Demand (t)		
• Magnets	25%	31,500		
<ul> <li>Battery Alloy</li> </ul>	15%	18,600		
• Metallurgy ex batt	9%	11,700		
<ul><li>Auto catalysts</li></ul>	7%	9,000		
• FCC	17%	21,300		
<ul><li>Polishing Powder</li></ul>	11%	14,000		
<ul> <li>Glass Additives</li> </ul>	6%	7,800		
<ul><li>Phosphors</li></ul>	6%	7.900		
• Others	4%	5,700		
Total	100%	127,500		

2014 Demand Forecast by Application			
Application	Growth (%)	Demand (t)	
<ul><li>Magnets</li></ul>	12%	49,600	
<ul> <li>Battery Alloy</li> </ul>	15%	32,500	
<ul> <li>Metallurgy ex batt</li> </ul>	2%	12,700	
<ul> <li>Auto catalysts</li> </ul>	8%	12,200	
• FCC	4%	24,900	
<ul> <li>Polishing Powder</li> </ul>	10%	20,600	
<ul> <li>Glass Additives</li> </ul>	0%	7,800	
<ul><li>Phosphors</li></ul>	8%	10.800	
<ul><li>Others</li></ul>	8%	6,100	
Total	8%	177,200	







Source: Non China market = aggregate of estimated manufacturer demand by application, China Market = IMCOA and China Rare Earths Information Centre.

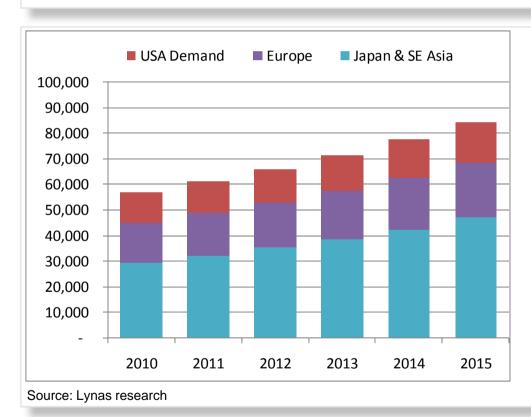
Note: Totals may not add due to rounding.



# The market outside of China is growing strongly. Japan with an auto and high-tech manufacturing industry is the largest non-China market



### **DEMAND FORECAST, NON-CHINA REGIONS**



- Japan with an automotive and high-tech manufacturing industry is the largest market for Rare Earths outside of China
- Europe imports significant quantities for automotive catalytic converters and FCC production
- The majority of the USA demand is within the FCC industry
- The USA and EU consume significant additional amounts of Rare Earths within finished products manufactured in China and Japan



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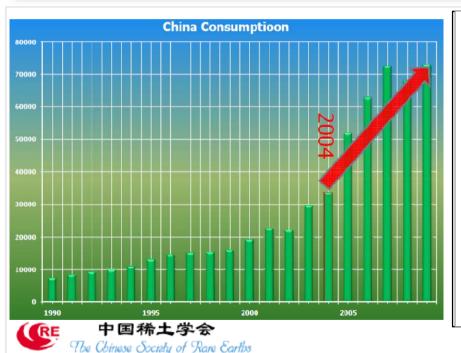
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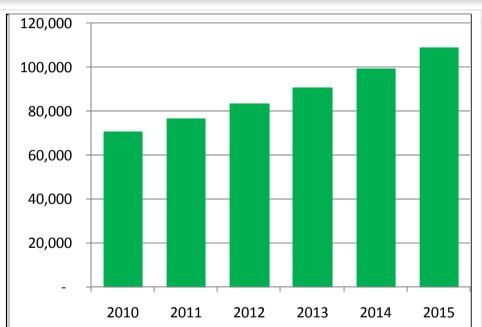
### China is a strong growth market, driven by cleantech and high-tech industry within China



### CHINA DEMAND 1990 to 2009 (t REO)

### CHINA FORECAST DEMAND 2010 - 2015 (t REO)





Source: IMCOA and China Rare Earths Information Centre



Canada Jan 21, 2011





Source: CSRE. Critical Metals Investment Summit. Vancouver.



# China's maximum production p.a. will be 100kt REO after the industry is restructured – and as such China will move to a net importer in 2014/15



### **CSRE PRODUCTION FORECAST FOR CHINESE RARE EARTHS INDUSTRY**

### China's Production Control

- Objective: Reduce environmental damage; curb illegal mining and smuggling
- The quantity control goal is 89.2 thousand tons in 2010, in that, 77 thousand tons is light rare earth products(86%), and 12.2 thousand tons is middle and heavy rare earth products(14%).











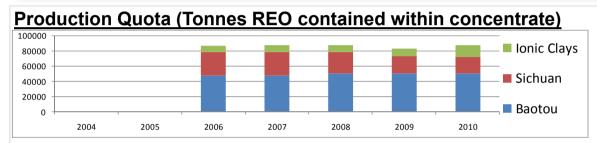


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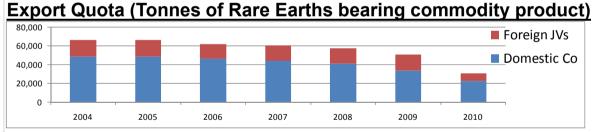
# China aims to improve "return on resources" as well as stimulate Rest of World supply



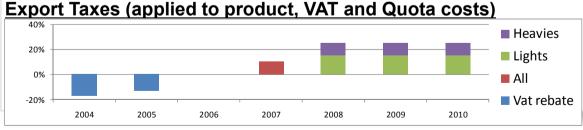
### CHINESE POLICY FOR THE RARE EARTHS INDUSTRY



- 1H 2011 Export Quota 14,446t
- Chinese Government Rare Earths new policy paper expected soon



- No prospecting or mining licences for Rare Earths until July 2011.
- Recognition by government of grey exports without quota drive for industrial consolidation in China.









Source: Asian Metal, Metal Pages, Lynas research.



# In 2010 Rare Earths supply (115kt REO), was outstripped by demand (128kt REO)



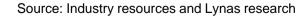
CHINESE SUPPLY SOURCES (2010 CAPACITY, REO)		NON CHINESE SUPPLY SOURCES (2010 CAPACITY, REO)		
<ul> <li>By product of iron ore mine</li> <li>Moving to higher grade iron, with lower impurities and Rare Earths</li> </ul>		<ul> <li>India</li> <li>Subsidiary of Indian AEA</li> <li>Toyota Tsusho bought trading firm with Japanese distribution</li> </ul>	3,000t	
<ul> <li>Tailing facilities near capacity</li> <li>Sichuan</li> <li>Jiangxi Copper to invest ¥1.2Bn</li> <li>Target to increase value added</li> </ul>	10,000t	Russia Limited expansion capacity By product of Mg production	4,000t	
<ul> <li>Capacity expected to increase</li> <li>lonic clay regions</li> <li>Reportedly 14 yrs of resource</li> </ul>	35,000t	Recycling  Magnet swarf Batteries – future potential	1,500t	
<ul> <li>Large amount of illegal mining</li> <li>Government action taking effect</li> <li>Recycling</li> </ul>	3,300t	<ul><li>USA – Mountain Pass</li><li>Reprocessing stockpiles</li></ul>	3,000t	
Total	103,300t	Total	11,500t	



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## Additional supply is required, with favourable elemental balance - inside and outside China



## 2014 SUPPLY VS DEMAND (REO, SEPARATED PRODUCTS)

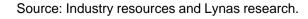
## SUPPLY/DEMAND ESTIMATED IMBALANCE (REO, SEPARATED PRODUCTS)

	<u>Demand</u> vs	Supply		<b>Balance</b>	<b>Comments</b>
<ul> <li>Lanthanum</li> </ul>	53,800t	40,000t	<ul> <li>Lanthanum</li> </ul>	- 13,800t	FCC outside China
• Cerium	52,800t	66,300t	<ul> <li>Cerium</li> </ul>	+ 13,500t	mainly inside China
<ul> <li>Praseodymium</li> </ul>	14,400t	8,300t	<ul> <li>Praseodymium</li> </ul>	- 6,100t	short everywhere
<ul> <li>Neodymium</li> </ul>	40,900t	27,900t	<ul> <li>Neodymium</li> </ul>	- 13,000t	short everywhere
<ul> <li>Samarium</li> </ul>	1,100t	2,900t	<ul> <li>Samarium</li> </ul>	+ 1,800t	short outside China
<ul> <li>Europium</li> </ul>	540t	375t	<ul> <li>Europium</li> </ul>	- 165t	short inside China
<ul> <li>Gadolinium</li> </ul>	1,200t	1,700t	<ul> <li>Gadolinium</li> </ul>	+ 500t	oversupply
• Terbium	600t	250t	<ul> <li>Terbium</li> </ul>	- 350t	short everywhere
<ul> <li>Dysprosium</li> </ul>	2,500t	1,100t	<ul> <li>Dysprosium</li> </ul>	- 1,400t	thrifting may help
• Yttrium	9,300t	6,000t	<ul> <li>Yttrium</li> </ul>	-3,300t	available stockpiles
• Total	177,200t (21,0	156,200t <mark>00t)</mark>			











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## Lynas will offer the first new source of supply of Rare Earths outside of China - Q3 2011



### LYNAS VITALS AT A GLANCE

VISION: Be the leader in Rare Earths for a sustainable future.

EXCHANGE: ASX Top 100; code LYC

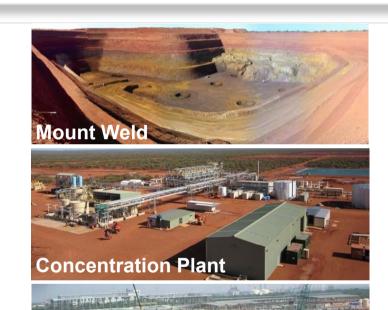
SHARES: 1,701m on issue

OPTIONS: 85m strike range 11c - \$2.36

MARKET CAP: A\$3.7bn as at 17 May 2011

CASH: A\$205m as at 31 Mar 2011

**DEBT:** Nil











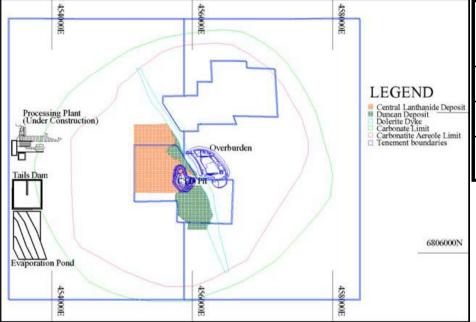


# The mine is within the Central Lanthanide Deposit (CLD), a Resource of 9.9 million tonnes at 10.7% for 1.1 million tonnes of contained REO



### CENTRAL LANTHANIDE DEPOSIT AND DUNCAN DEPOSIT RESOURCES

### Central Lanthanide Deposit & Duncan Deposit at Mount Weld Tenements



### CLD & Duncan Mineral Resource (2.5% REO cut-off)

Category	Tonnes Mt	Grade % REO	Tonnes (kt) REO
CLD	9.88	10.7	1,057
Duncan	7.62	4.8	366
Total	17.49	8.1	1,416

- Current mine plan (within Central Zone Pit)
  - 4.47 Mt @ 13.6% REO for 608kt REO
- Low Thorium content, 44ppm ThO<sub>2</sub>/1% REO



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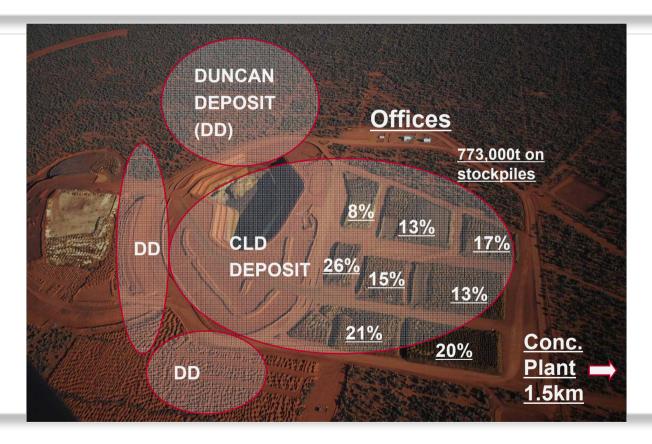




# Mount Weld Rare Earths initial mining campaign complete, loss-time-injury-free, on budget



### MOUNT WELD STOCKPILES WITH RARE EARTH OXIDE PERCENTAGES





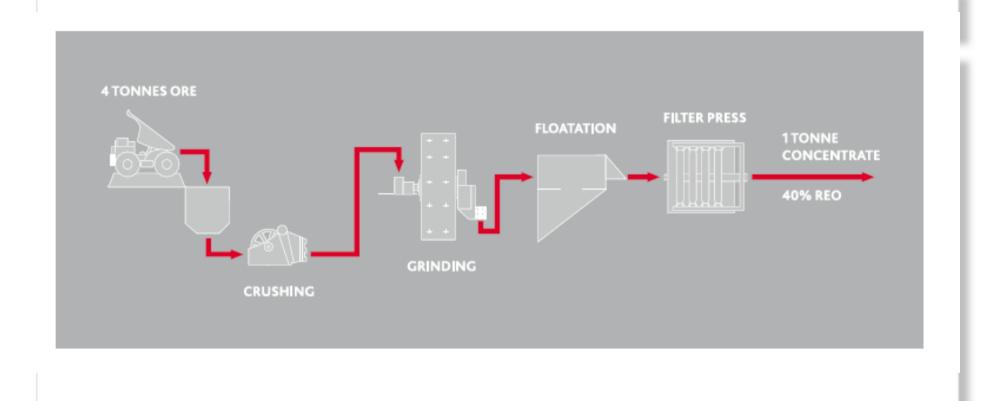






## Schematic - Concentration Plant process at Mount Weld, which has been fully pilot plant tested













# The Concentration Plant commenced feed of ore on Saturday 14 May 2011



### **OVERHEAD VIEW OF THE CONCENTRATION PLANT**











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### Views of the various sections of the plant

### **CONCENTRATION PLANT**



**Ball mill and Classification Circuit** 



**View along top of Flotation Circuit** 



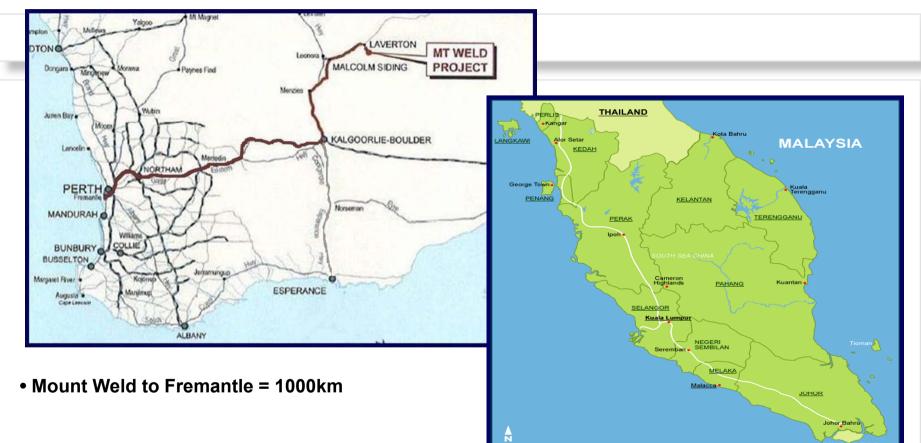






# Containers of Rare Earths concentrate will be trucked to Fremantle for shipping to Malaysia













# Gebeng, Malaysia, has exceptional infrastructure required for a Rare Earths separation facility



### PROCESSING HUB WITH EXCEPTIONAL INFRASTRUCTURE

### INDUSTRIAL INFRASTRUCTURE

Energy, chemicals, water, industrial land

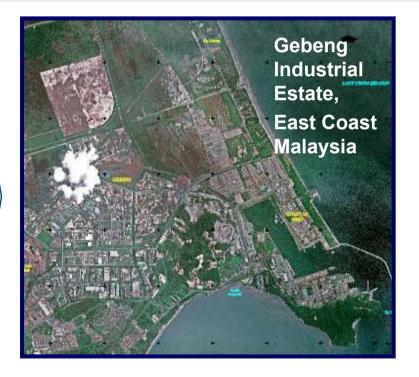
### **KNOWLEDGE INFRASTRUCTURE**

Engineering, trade skills and services

### **GOVERNMENT INFRASTRUCTURE**

Including FDI incentives

(12 years tax exemption for pioneer status)





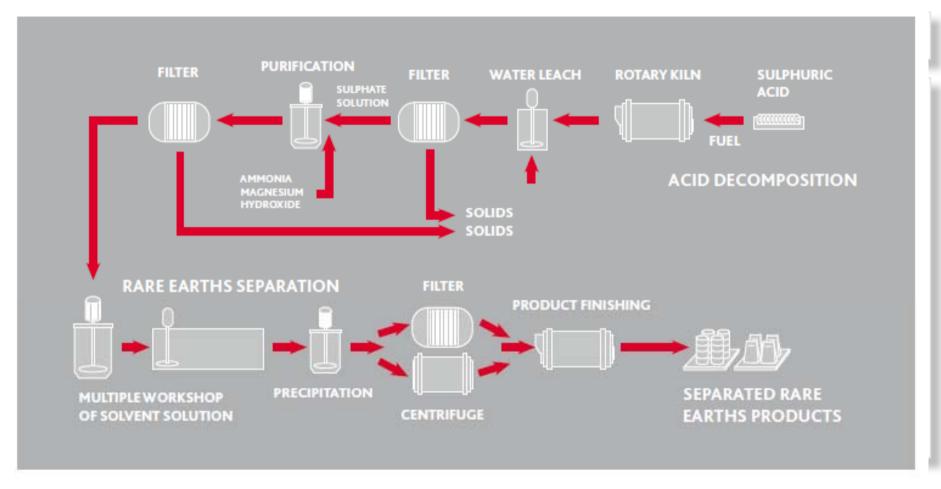






# Schematic - Lynas Advanced Materials Plant core process, which uses mature industry technology







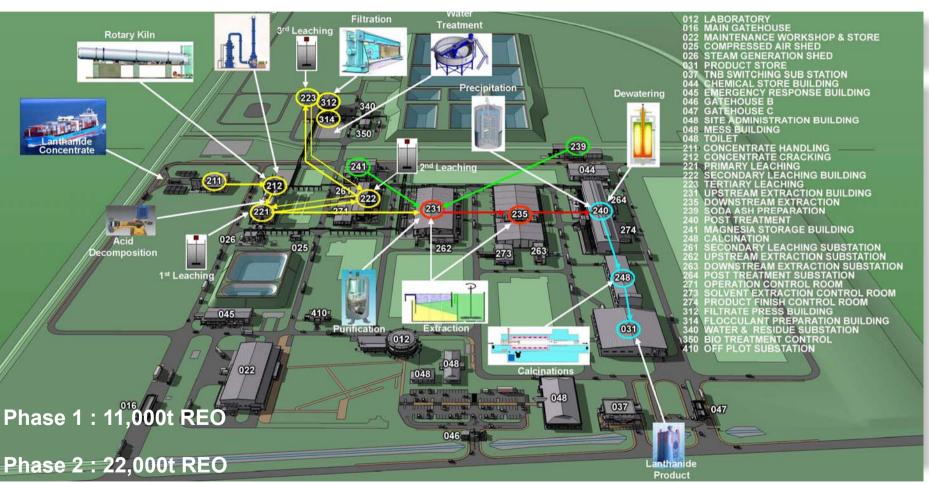






# The Lynas Advanced Materials Plant (LAMP) is built to international environmental performance standards – gas, water and solids manangement













# The Lynas Advanced Materials Plant (LAMP) is 0.8km wide (N-S) and 1.4 km long (E-W)



### **COLLAGE OVERVIEW OF LYNAS ADVANCED MATERIAL PLANT SITE - FEB '11**











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# Piping and electrical installation has commenced and installation of equipment is ongoing



















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# The Lynas Advanced Materials Plant (LAMP) is scheduled to be complete in September 2011

















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# The Lynas Advanced Materials Plant (LAMP) is scheduled to be complete in September 2011





















# The prod

# The products are set for Phase 1; Lynas has product flexibility in Phase 2



PHASE 1 — 11,000t REO PRODUCTS	ANTICIPATED VOLUMES (tpa)		
Ce carbonate	2,600		
La carbonate	1,350		
Ce / La carbonate	4,000		
Nd / Pr oxide	2,700		
SEG + Heavy Rare Earths	480		
PHASE 2 — ADDITIONAL 11,000t REO PRODUCTS. Phase 2 will provide additional flexibility, with capacity to produce up to the following approximate volumes:			
Ce carbonate, oxide	5,200		



La carbonate, oxide

Nd oxide and Pr oxide



Separated SEG + Heavy Rare Earths





2,700

2,700

480

### Approval for on-site storage received, however applications for synthetic mineral products are identified and development work is underway.



### **SYNTHETIC MINERAL PRODUCTS**

0)/)
SYNTHETIC
GYPSUM

### Desulfurisation

Source

### Target Application\*

### **Development Status**

- of the flue gases
- Plasterboard
- Gypsum fibreboard
- Cement additive

- Malaysia is short gypsum
- Synthetic gypsum imported
- LOIs under negotiation

**MAGNESIUM-RICH SYNTHETIC GYPSUM** 

- Water treatment plant, water neutralisation
- Magnesium Gypsum Fertilizer Booster (MGFB)
- Field trials complete
- Results very positive
- Commercialisation LOI under discussion

**IRON** PHOSPHO-**GYPSUM** 

- Leaching stages of LAMP, nonrare earths remain as solids
- Concrete formulations
- Road sub-base, phosphogypsum used in US, Europe, Middle East, Africa
- Successfully tested in concrete
- Road sub-base development program underway







<sup>\*</sup> All applications will require approval from the DoE and AELB in Malaysia upon LAMP producing Synthetic Mineral Products



# We cust

# We are industrialising our operations to meet our customers' expectations



### **FOUR PILLARS UNDERPINNING LYNAS' OPERATIONS**

### **Marketing and Sales**

 Serving long-term customer requirements and commitments, and thus providing input for plant extensions and new facilities.

### Industrial

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 Key value drivers are responsible care, customer satisfaction, asset optimisation and growth management.

### **Research and Technologies**

 Working with customers to analyse and develop technologies to enable a cost-effective product offering

### **Business Excellence**

 Providing and optimising services to support cost-effective operations at the processing plants.











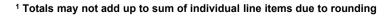
## Budgeted Phase 1 construction costs are fully funded

CONSTRUCTION AND OTHER CAPITAL COSTS	TOTAL A\$mm	TO 31/1/11 A\$mm	FUTURE SPEND A\$mm
Mount Weld Concentration Plant	70.86	56.36	14.50
Lynas Advanced Materials Plant, Malaysia	237.32	91.39	145.93
Engineering and Project Management Costs	137.81	107.81	30.50
Other Capex including Land in Malaysia	65.24	48.95	16.29
Contingency	28.60	-	28.60
Total Capital Costs <sup>1</sup>	\$539.33	\$304.51	\$235.82
PRODUCTION RAMP-UP COSTS		SPEND TO	FIRST PRODUCTION
PRODUCTION RAIMP-OF COSTS			A\$mm
Mount Weld Concentration Plant			14.71
Lynas Advanced Materials Plant, Malaysia			20.32
Finance, Admin, Marketing, Technical and Corporate Overheads			11.24
Total Operating Costs <sup>1</sup>			\$46.27
TOTAL BUDGETED CASH REQUIREMENTS TO START OF PRODUCTION	ON <sup>1</sup>		\$282.09
Cash on Hand 31 January 2011			264.42
OCBC Working Capital Facility			21.30
TOTAL CASH PLUS WORKING CAPITAL FACILITY			\$285.72
HEADROOM INCLUDING CONTINGENCY			\$32.23











### The Strategic Alliance with Sojitz shall provide a stable and long term source of supply for the Japanese market



### LYNAS, SOJITZ AND JOGMEC HAVE EXECUTED DEFINITIVE AGREEMENTS

Sojitz – Lynas Strategic Alliance

### Financing Agreement

- Funding for Phase 2 expansion to 22,000t
- US\$225M loan from JOGMEC and Sojitz
- 6 year loan at LIBOR plus 2.75%, principal repay-ments begin in year 4
- US\$25M subscription for new fully paid ordinary shares in Lynas at a price of A\$2.12 per share
- Conditions to be satisfied during May 2011

### Availability Agreement

- Minimum 8,500t (+/-500t) per annum
- Allocated to Japanese Customers
- 10 year allocation

### <u>Agreement</u>

- Joint marketing by Sojitz and Lynas
- Customer commitment will determine Phase 2 products suite
- Professional organisation, speed, understanding of requirements, transparent communications



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# Lynas simultaneously completed an institutional placement and announced a Share Purchase Plan for Lynas shareholders



### **ADDITIONAL EQUITY RAISING**

- \$55M Institutional Placement
  - Fully underwritten institutional placement raising approximately A\$55 million at an issue price of A\$2.07 per share. The issue price represented a discount of 2.2% to the 5-day VWAP
- \$20M Share Purchase Plan (SPP)
  - A\$20 million SPP at \$2.05 per share.

New Proceeds	(A\$mm)
Proceeds from Loan Facility	\$225.0 <sup>1</sup>
Proceeds from JOGMEG/Sojitz share subscription	\$25.0 <sup>2</sup>
Proceeds from Institutional Placement	\$55.0
Proceeds from Share Purchase Plan	\$20.0
Total	\$325.0

1 & 2 This amount is calculated by reference to an exchange rate of US\$1 = A\$1. The exchange rate as at the date of settlement may be a different rate and as such the A\$ amount of funds may change



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# Summary of estimated capital and operating costs to fund Phase 2 of the project



Construction & other capital costs	Total (A\$mm)	Capex spent to date (A\$mm)	Future capex (A\$mm)
Phase 2 plant & equipment for the Concentration Plant	\$28.0	-	\$28.0
Phase 2 plant & equipment for the LAMP	\$148.0	-	\$148.0
Phase 2 engineering and project management costs	\$34.0	-	\$34.0
Contingency	\$25.0	-	\$25.0
Other capital expenditure	\$28.4	-	\$28.4
Total	\$263.4	-	\$263.4

Operational costs for Phase 1, and Phase 2 working capital & production ramp-up costs from start of Phase 1 through to start of Phase 2	Future spend (A\$mm)
Concentration plant	\$33.4
LAMP	\$63.9
HO costs, operations, finance, IT, etc	\$21.0
Total	\$118.3
Total expenditure (before cash receipts from Phase 1 sales)	\$381.7

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Note: The equipment and procurement capital costs for Phase 2 are based on the assumption of equivalent expenditures from Phase 1



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### Eight customer agreements have been signed; Strategic Alliance with Sojitz to provide stable supply to Japanese customers



### Rhodia Customer Agreement - Supply Contract

- >US\$200M¹
- Long term 10 year contract, Phase I
- Cerium, Europium, Terbium & Lanthanum

### **2nd Customer Agreement Supply Contract**

- ~US\$200M¹
- Long term 5 year contract, Phase 1
- Neodymium & Praseodymium

### **3rd Customer Agreement**

- Supply Contract
- ~US\$20M¹
- Long term multiple year contract
- Product from Phase I & Phase II

### Strategic Alliance with Sojitz

 Minimum of 8,500t (+/-500t) of product distributed into Japan market

### 8th Customer Agreement - Supply Contract

- Long term contract
- Product from Phase I & II

### 7th Customer Agreement – Supply Contract

- Multi year contract
- Product from Phase I

### 6th Customer Agreement

- Supply Contract
- Long term multiple year contract
- Product from Phase I & Phase II

### 5th Customer Agreement – Letter of Intent

- ~US\$80M¹
- Long term multiple year contract
- Product from Phase I & Phase II

### 4th Customer Agreement - Supply Contract

- Long term multiple year contract
- Product from Phase I & Phase II

### SEVEN SUPPLY CONTRACTS AND ONE LETTER OF INTENT SIGNED











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## Lynas has completed the acquisition of additional Rare Earths resources in Malawi, Africa





### **Key points for Kangankunde (KGK)**

- Fully permitted for operations
- Inferred Resource of 107,000 tonnes REO at an average grade of 4.24% REO, with a 3.5% cut-off grade.
- At a 3% REO cut-off grade the resource increases to 180,000 tonnes REO and remains open at depth
- Extremely low thorium levels for a Rare Earths deposit, 11ppm ThO<sub>2</sub> / 1% REO
- Pilot plant completed for gravity concentration process
- Unassembled gravity separation concentration equipment included in sale









## Lynas now has two JORC compliant deposits, work will commence forthwith on Kangankunde



### The Kangankunde Carbonatite



### **Next steps for the Kangankunde RE deposit**

- Initiate an environmental management plan
- Undertake drilling program to provide drill core and test resource extension
- Validate the concentrate production flow sheet
- Cracking and separation test work shall commence on the concentrate
- Concentrate may be processed in Africa to produce a mixed rare earths product which will then be shipped to Malaysia for separation, or may be full processed at the Malaysian processing facility









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# Lynas – online in 2011, delivering Rare Earths globally

- Our vision is to be the leader in Rare Earths for a sustainable future.
- We are close to realising this vision.
- Lynas will be online in 2011, delivering Rare Earths globally. This is the first new production outside of China.
- The LAMP is scheduled to come online in Q3 2011, and the production capacity of Phase 1 will be 11,000tpa REO.
- Work for Phase 2 is underway for an additional 11,000tpa REO.











### NOTE

The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Brendan Shand, who is a member of The Australasian Institute of Mining and Metallurgy. Brendan Shand is an employee of Lynas Corporation Limited. Brendan Shand has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Brendan Shand consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.







