HONG KONG EQUITY
Investment Research
Company Note

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COMMODITY

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CHINA RARE EARTH

BUY
Price **HKD1.47**
Target **HKD1.82**

A Misunderstood Gem

Stock Profile/Statistics

Bloomberg Ticker	769 HK Equity
HSI	20056.24
Issued Share Capital (m)	1421.14
Market Capitalisation (HKDm)	2174.35
52 week H | L Price (HKD)	2.10 | 0.78
Average Volume (3m) '000	13761.53
YTD Returns (%)	20.47
Net gearing (x)	-0.11
Altman Z-Score	6.16
ROCE/WACC	1.13
Beta (x)	0.60
Book Value/share (HKD)	1.25

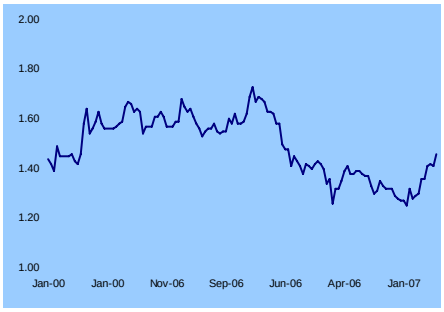
Major Shareholders (%)

Y.Y. holdings	50.26
Martin Currie	5.11
Fidelity	4.85
Trophy Fund	4.77

Share Performance (%)

Month	Absolute	Relative
1m	9.77	9.58
3m	-7.60	-13.60
6m	-0.05	-14.92
12m	84.61	50.36

6-month Share Price Performance



China Rare Earth is a leading rare earth products and high-grade refractory material producer in China. The stock is a clear underperformer for the China theme as successive share issuance raised concern over earnings dilution. We think the stock is ripe for picking as rare earth industry is entering a growth phase and improved product mix for the company is aiding margin expansion. Being a pro-active growth seeker, China Rare Earth is in a position to consolidate its market leadership within the industry.

Recent sell down on concern over earnings dilution is overdone. Industry consolidation should benefit the company and plans to further integrate into up and downstream operation are long term positive. The company, with near zero gearing, is well positioned for this as it is armed with strong war-chest after the share issue. Vertical integration of the company business, industry consolidation and change in product mix should see gross margins improved further from 27% currently to 31% in 2008, in our view.

Industry shake-up tightens supply while new usage will boost rare earth prices. Chinese government is taking steps to shake up the sector, including freezing new license issuance, imposition of export tariff and production limit. Rare earth output is expected to decline by 27.1% in 2006 to 86,520 mt. At the same time, greater environmental awareness, energy conservation and consumerisation of electronic goods will raise demand for rare earth. Tight supply and sustained demand will mean that prices of rare earth concentrates may be experiencing a multi year structural rise.

Shuffling of product mix and efficiency improvement to boost gross margins. Efficiency improvement through integration and boosting downstream sales will expand gross margins. Average gross margins is expected to improve from 27.4% in 2006 to 31% in 2008 as the company shift to sell higher margin products and adding capacity to the above-average magnesium grains and high temperature ceramic production.

Valuation. At 8.9x 07E fully diluted earnings basis, the share price is clearly undemanding relative to its peers. We believe the depressed share price has factored in too much earnings dilution from the recent share issue. We valued the stock at 12x 07 EPS and 10x 08 EPS. At this level the stock is only trading at 1.0x P/B versus domestic and international peers 2.7x and 4.2x P/B. BUY with a fair value of HKD1.82.

FYE Dec (RMBm)	FY04	FY05	FY06	FY07f	FY08f
Total Revenue	665.3	769.4	955.7	1,097.4	1,254.7
Net Profit	119.7	130.2	175.8	216.1	254.3
% chg YoY	79.7	8.82	35.0	22.9	17.7
EPS (cents)	12.0	13.0	12.4	15.2	17.9
Gross DPS (cents)	2.0	4.0	4.5	5.5	6.4
Gross Div. Yield (%)	2.0	4.9	3.3	4.1	4.8
PER (x)	11.3	10.4	10.9	8.9	7.6
P/BV (x)	0.92	0.77	0.57	0.83	0.77
EV/EBITDA (x)	4.3	2.9	3.0	3.0	2.3
ROE (%)	9.20	9.11	9.10	10.43	11.38
ROA (%)	8.39	8.17	7.27	8.49	9.08

INVESTMENT THEMES

- **China's underperformer.** Over the years, CRE has been successful in transforming itself into a major global player for rare earth products and a dominant supplier of refractory materials in China. The company has a proven track record in delivering both top and bottom line growth with a long history of uninterrupted profitability. However, share price of CRE is a clear underperformer this year. A cold shoulder for the stock was due to its massive new share sale in March and in November, collectively amounting to almost half of its capital prior to the issuance. Investors were concern with the impact on earnings. We believe while near term impact on earnings is significant, the share issuance is long term positive for the company as its up and downstream integration works to enhance margins.

- **Rare earth prices in a multi year structural uptrend.** Visibly tighter supply is evidence with China taking steps to clean up the sector, including freezing new license issuance, export tariff and production limit. China's ROE output is expected to decline by 27.1% in 2006 to 86,520 mt. At the same time, evidence of global trend towards greater environmental awareness, energy conservation and consumerisation of electronic goods will raise demand for ROE. This supply-demand mismatch will push prices higher, in our view. In the past, owing to the cost of rare earth represents only a fraction of the cost to the users, higher rare earth prices have been margin positive to the company.

- **Global rare earth demand will outstrip supply by 2006.** Industry expert expects rare earth demand to grow 10% pa annual on a compound rate. Given the current supply level and even incorporating Australia's Mt Weld new mine output, global demand will still outgrown supply by 51,900mt by 2010. This 34% shortfall in supply will be a case for a sustained price uptrend for rare earth products, in our view. This is already evidence with RE prices gradually firming up.

- **Venture into magnesium grains and further expansion in the sector will enhance performance.** Suhai Magnesium acquisition last year has shown results with HK$24.2m turnover (5% of total sale) and HK$7.7m profit in the first half. After the phase 1 investment in high grade magnesium grain, production capacity is expected to jump by 1.5 folds as the new plant will add 50,000 tons p.a. to the existing capacity of 30-40,000 tons. Phase 2 & 3 which is expected to be completed by end 2007 will see the capacity increases to 150,000 tons. Magnesium grains yield 50% gross margins, more than the average gross margins of 25-30%, hence margin expansion.

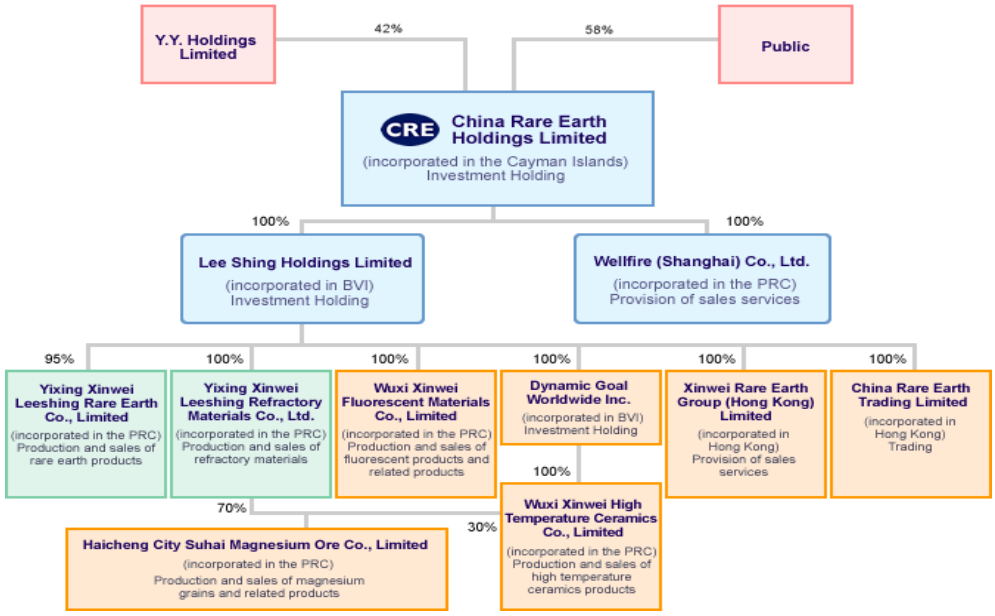
- **Efficiency improvement will boost gross margins.** In addition to visible topline growth arising from capacity expansion. A series of efficiency improvement through integration and shuffling of product mix could easily boost gross margins. We are expecting these steps to raise CRE's average gross margins from the current 27% to 31% in 2008. More efforts to boost downstream sales, currently standing at 15% to 50% in the future, offers further upside to gross margins improvement.

- **Valuation is undemanding.** On fully diluted basis, the stock is trading at 8.9x FY07EPS and 7.6x FY08 EPS. There are no appropriate peers comparison for the stock as the only listed rare earth producer is trading at PE of more than 60x. We think CRE should be trading at higher PER and P/B given its superior track record and outstanding execution of its business strategy, both of which have been unquestionably proven. Granted, its strong war-chest with near HK$700m cash should allow it to benefit from industry-wide consolidation and China's desire to influence the global rare earth industry. Using domestic commodity peers and international rare earth and refractory peers as benchmarks, we valued the stock at 12x FY07 EPS and 10x FY08 EPS. Even at this level, the stock is only trading at 1.0x Price/Book. **BUY with fair value of HKD1.82**.

BACKGROUND

Founded in 1984, CRE is among the most profitable rare earth processor in China. Formerly known as Yixing Xinwei, China Rare Earth ("CRE") was founded in 1984 and listed in Hong Kong Stock Exchange in October 1999. From the humble beginning with a capital of just RMB3,000, the founder started refractory plant in 1985 and rare earth processing plant in 1987, the two businesses have since grown in size to be among the largest in the country. The two principal businesses for the company are the production and sales of rare earth products through its 95% owned subsidiary, Yixing Xinwei Leeshing Rare Earth; and production and sales of refractory materials through its wholly owned Yixing Xinwei Leeshing Refractory Materials. It has **20% global market share** for the highly purified rare earth oxides. It is also the dominant domestic producer of refractory materials with the largest domestic steel companies counting among its clients.

Figure 1: Corporate Structure



Source: Company

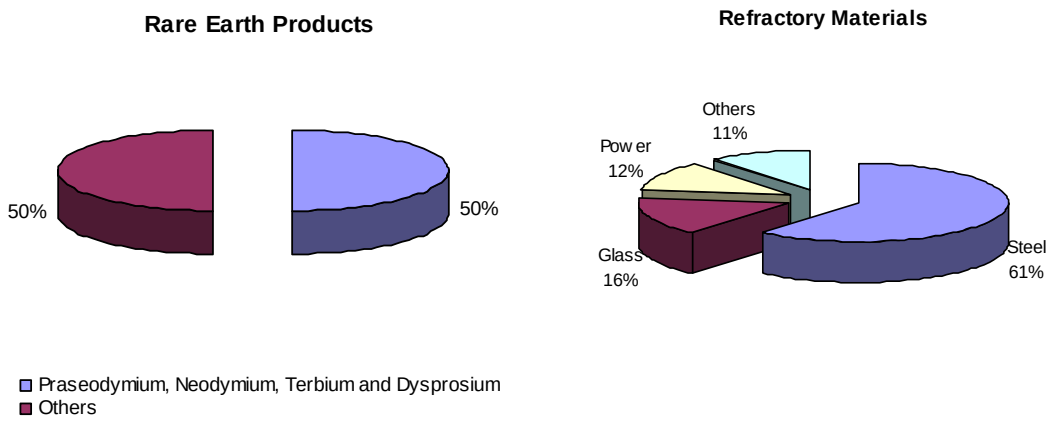
Rare Earth

A mid-stream rare earth player with a name for quality (Achieving 6s-9 purity). Producing about 4,000 tons of highly purified rare earth and with over 30 types of rare earth products under its wings, CRE is a well recognised name in the industry. Bearing testament to its dominance in technology and quality, a number of its products have **reached highest industry standard** of **99.9999% purity**. CRE's products are not only meeting the local standard but also the stricter international standards in the U.S.

Refractory Materials

Respected and quality domestic refractory manufacturer. The company refractory products are sold to steel and glass mills both for replacement and new markets. Counted among its clients are big names in the domestic steel industry such as Angang, Baogang and Magang as well as international names like NKK and Pilkington. In term of consumption of the company's refractory sales, steel industry accounts for 61% followed by glass 16%, power 12% and others 11%. Its refractory plant has 100,000 tons capacity with over 180 types of middle to high end products. **80% of the products are consumed locally** while 20% are for exports primarily to Japan. Nippon Steel is a technical partner that provides the know-how to the Group for quality exports to Japan.

Figure 2: Segmental Information



Source: Company

High grade refractory materials. Producing some 178 brands under eight product series with annual production capacity reaches 100,000 tonnes of high-middle grade sintered refractory products, non-sintered refractory products and unshaped refractory products, the company's refractory business has grown three folds from HK$144m to HK$424m between 1999 and 2006. A scientific research and testing centre has been built to back the company technical research and development with collaborations with many universities and industry group including Wuhan University of Metallurgical, Luoyang Institute of Refractories, Research Ministry of Metallurgical Industry, Chongqing Steel & Iron Design Institute, Capital Steel & Iron Design Institute, National Building Material Industry Bureau, Hangzhou Design Institute, Qinhuangdao Design Institute, Bengbu Design Institute, Anshan Coking & Refractory Design Institute.

SHARE SALE SHORT TERM IMPACT

Massive share placement sparks concern. The company's 236.8m share sales at HK$1.46, the second in a year after a 197.4m issue in March, has irked investors as the size close to 20% of the existing share capital. These new shares pose a significant dilution effect to earnings. Here are the key takeaway points from our meeting with the management: -

- A proactive growth seeker at the expense of short term share price performance. The company's focus is on driving growth for the company at the expense of short term share price underperformance. The management noted that the proceeds of the issuance go to the company for its integration plan. The major shareholders did not reduce his shares.

- Confidence of delivering results although earnings dilution will be a drag to EPS in 2006. The company has been able to deliver a CAGR of 38% EPS in the past 4 years. With strategy to integrate operation and expanding into products that provide higher margin, it is confidence to continue to deliver good earnings. The three phases of its magnesium grain projects will boost capacity to 150,000 tons from the present 30,000-40,000 tons. Magnesium grains yield close to 50% gross margins as compared to 25-30% for other refractory products.

- Share placement is to increase the share capital of the company. We pointed to the management that the current capital structure i.e. long term investment entirely funded by equity with near-zero borrowings, is in fact an inefficient and non-optimum. We were told that the fund raising, primarily to fund its 200m Phase 1 Capex requirement of its Magnesium grain project, was also aimed to increase its share capital size. The company has no further plan to issue new shares in the next 2 years. Further capex requirement, if any, will be funded by borrowings to enhance its capital structure.

Chairman still controls 42% after placement. Currently, the major shareholder, through Y.Y. Holdings, controlled slightly over 50% of the company. Y.Y. Holdings is held by the family trust of chairman Jiang Quanlong and his spouse Qian Yuanying. However, Y.Y holdings stake will be diluted to 42% after the recent 236.8m share issuance. Institutional investors hold close to 20% of the company with Martin Currie and Fidelity holding a substantial stake (note that the shareholding changes and outstanding stake are compiled from announcement to the exchange as at date stated). We also note that Winnington has reduced its stake by half from 8% to slightly over 4%. Winnington was holding for Mr. Hung Kam Biu and his spouse Ms. Jocelyn Chu.

Figure 3: Shareholding list

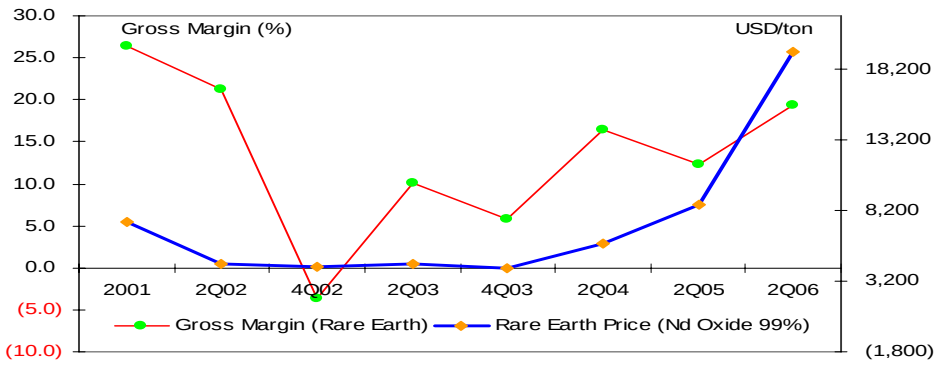
Name	Shares	%	Report Date
Major Shareholders			
QIAN YUANYING	595,200,000	50.260 %	11/14/2006
HUANG CHUNHUA	2,268,000	0.190 %	4/24/2006
Institutional Shareholders	231,881,973	19.80%	
Martin Currie Investment Management Ltd.	60,570,000	5.110 %	7/28/2006
Fidelity Management & Research	57,492,000	4.850 %	5/16/2006
Winnington Capital Management Ltd.	48,000,000	4.050 %	11/6/2006
Fidelity Investments Management (Hong Kong) Ltd.	25,629,417	2.160 %	7/31/2006
Heartland Investment Consulting Co. Ltd.	16,252,000	1.370 %	7/31/2006
INVESCO Asia Ltd.	14,728,000	1.240 %	7/31/2006
Dimensional Fund Advisors, Inc.	4,762,000	0.400 %	5/31/2006
MFC Global Investment Management (Hong Kong)	1,574,000	0.130 %	6/30/2006
Arethusa Asset Management LLP	1,100,000	0.090 %	12/31/2005
Credit Agricole Asset Management Hong Kong Ltd.	1,098,000	0.090 %	4/30/2006
Fidelity Investments International (UK) Ltd.	418,556	0.040 %	7/31/2006
Warrenwicklund Asset Management AS	150,000	0.010 %	6/30/2006
DFA Australia Ltd.	108,000	0.010 %	5/31/2006

Source: Reuters

CATALYSTS FOR RE-RATING

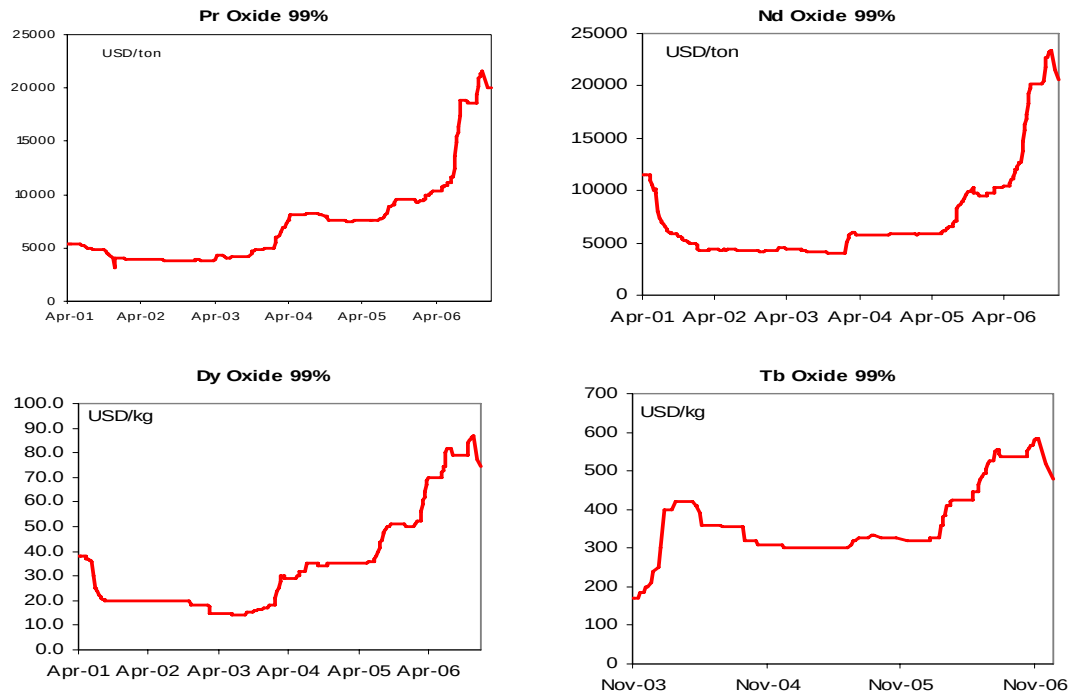
Rare earth prices should move higher. The four key rare earth products, contributing to almost half the sales, namely Praseodymium, Neodymium, Terbium and Dysprosium have seen price rise of between 58% and 145% since early last year to December. Nonetheless, the prices have since softened sharply towards the end last December and early January this year. The rise in rare earth prices is structural as tighter supply is backed by wider demand. Price of Neodymium, widely used in hybrid vehicles, superconductors and hard disks, rose the most by 125% followed by 115% rise in Praseodymium which is used in magnet, ceramic pigments and watches. Terbium and Dysprosium where major applications are in computer chips, LCD, plasma screens, lasers, halogen lamps were seeing less spectacular rise of 55% and 62.5% respectively. Positive rare earth prices tends to be margin enhancing for the company due to the fact that rare earth cost contributes an insignificant amount to overall product costs for end user while at the same time there is no substitute for them, making demand for rare earth rather inelastic and allowing producers to pass on the cost increase (See Chart Below). Despite the recent correction in the rare earth prices, management guided that the key product prices remained stable.

Figure 4: Gross Margins versus Rare Earth Prices



Source: Asian Metal, Company, OSK estimates

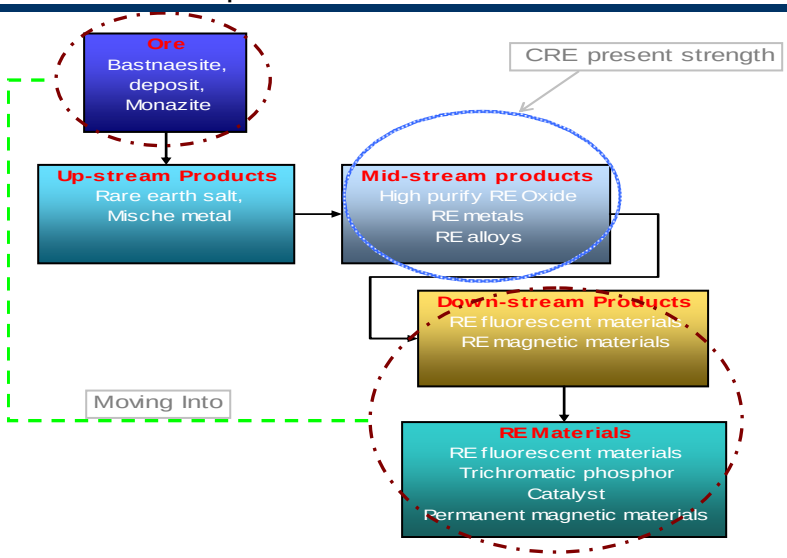
Figure 5: Rare Earth Price Trend (4 key products of the company)



Source: Asianmetal, Company

Efficiency improvement to boost margins. In our view, in addition to driving visible top-line growth, the management is also undertaking a series of efficiency improvement that would clearly improved its cost structure. It is venturing into downstream products that yields higher margins and at the same time going into upstream operations that allow synergy. The acquisition of Suhai allow it to gain access to the magnesium supply, a key raw input for its refractory and vis-à-vis cost improvement. The company is also expected to invest in high purity magnesium grains, a key material for the production of high temperature ceramic. The initial capacity upon completion of phase 1 by early 2007 is 50,000 ton pa while phase 2 &3 will increase capacity to 150,000 tpa by end 2007. This investment is expected to be margin enhancing given that high temperature ceramics have a gross margin of 40% versus 30% for traditional refractory materials. Moreover, magnesium grains are commanding even higher margin of 50%.

Figure 6: Process Flow and Value Acquisition



Source: Company data, OSK Asia

Rare Earth Primer

Mendeleyev's Periodic Table: elements 39, 57-71. Rare earth is a name commonly used for 16 elements in the Mendeleyev's periodic table. Although element 21, Scandium is not a Rare Earth element, it is usually included due to fact that it exhibits similar properties. They do not appear as free metals in raw, but are usually mixed with other elements and need to be separated and processed. The name rare earth is a misnomer as neither these elements are rare nor are they earth. They are a collection of typical metal elements with the word “earth” referring to the oxide. Some of these elements are also relatively abundant in the Earth's crust. Cerium, for example, is the 25th most abundant element in the crust and is even more common than lead. Lutetium, the least common of all rare earth elements is still some 200 times more abundant than gold. Despite their abundance, minable concentrations are still less common than other ores – hence the word “rare”. They posses qualities that when synthesised make them indispensable in many high-tech applications.

Figure 7: Chemical Periodic Table

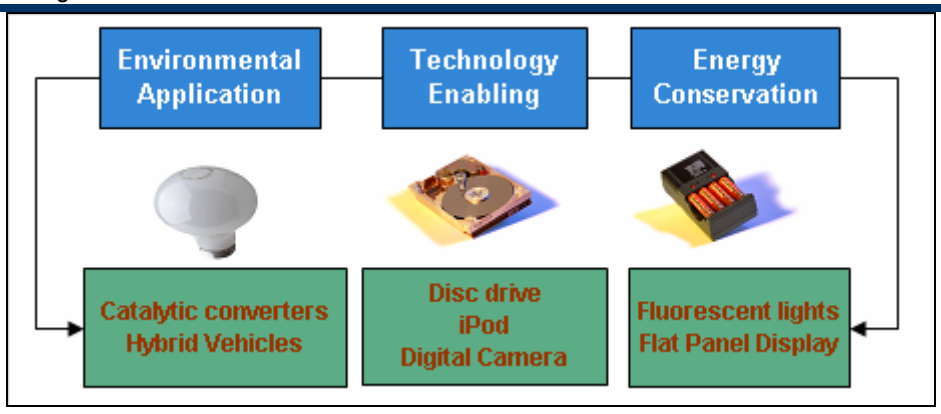
1 H																	2 He
3 Li	4 Be											5 B	6 C	7 N	8 O	9 F	10 Ne
11 Na	12 Mg											13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
87 Fr	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds	111 Rg	112 Uub	113 Uut	114 Uuq	115 Uup	116 Uuh	117 Uus	118 Uuo

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Source: OSK, Company

Widely use in high tech industry due to their properties. Their high fusing point, high thermal and electricity conductivity and great density make them conducive for application in various fields especially with their physical and chemical properties such as magnetism, luminosity, superconductivity and environmental non-toxicity. They are widely used from high tech industries such as electronic devices, computers, motors, automotive, permanent-magnet, magnetic memory chips, fibre optics, superconductors and precision optics to traditional industries such as metallurgy, nonferrous metal smelting, petroleum and chemical engineering, glass, ceramics and home appliances.

Figure 8: Usage of Rare Earth



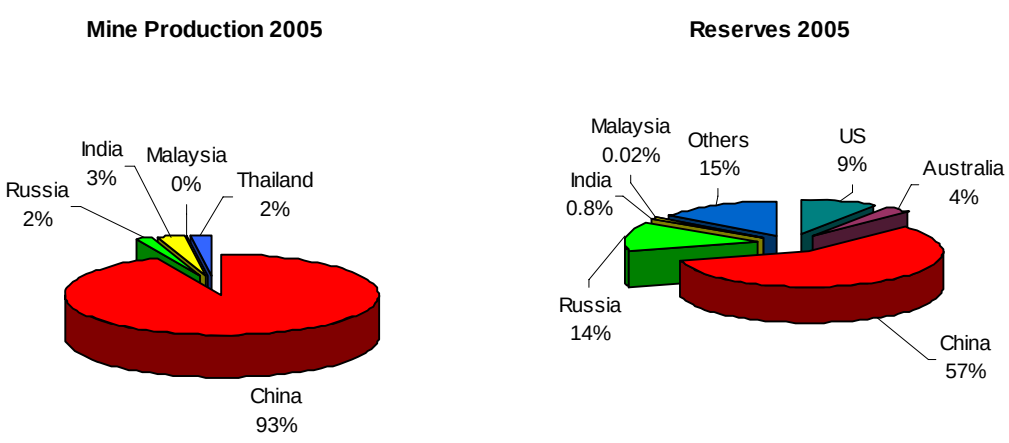
Source: OSK

Global Leader and China Dominance

Mountain Pass closure marks the rise of China. Prior to mid-sixty supply was predominantly sourced from Brazil, India, Malaysia and Australia. Mountain Pass in the U.S. however dominated production between mid-60 to mid-80's. However, environmental concern (radioactivity) and escalating costs in the U.S. marked the ascendary of China to become the largest producer and exporter in the world. In China three key mines namely Bayan Obo in Inner Mongolia, Mianning in Sichuan Province and Jiangxi Province in Southern China produce the bulk of the ROE. Bayan Obo by far has the largest production of 49,000 mt pa., half of China's total production followed by Mianning's 30,000 mt pa. and Jiangxi's 20,000 mt pa.

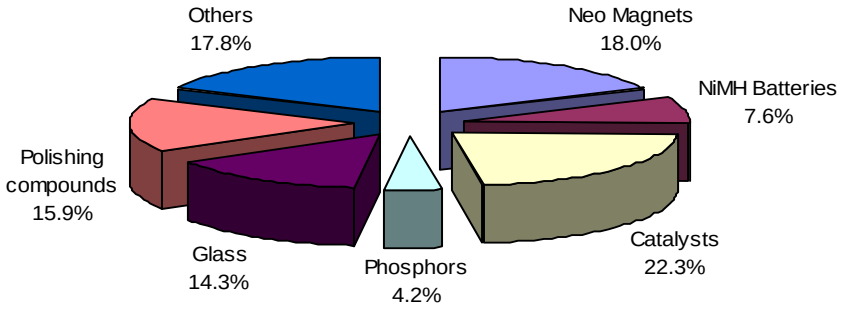
Production and export quota step up industry consolidation and ensure price sustainability. Having owned 57% of world reserves and producing 90% of rare earth products, China is indisputably the dominance force in the global rare earth market. Given its dominance position and perceiving it as strategic to the country, it has taken step to speed up industry consolidation that would ensure a sustainable price trend. Imposition of production quota in April and tightening of export quota in November are among the measures aimed at industry integration and prevent low-pricing competition in the export market. The Ministry of Land and Resources imposed production quota of 78,200 tons for light rare earths and 8,320 tons for heavy rare earths, down from a combined output of 118,700 tons set in 2005. For exports, producers must have minimum export volume of 2,000 tonnes or export value of Rmb30 million from the previous year, increased from 1,500 tonnes and Rmb25 million. Otherwise producing exporters must show a minimum export volume of 700 tonnes annually during 2003-2005 and $4 million of annual value, compared to 500 tonnes and $3 million applied in 2006.These macro developments should ensure a sustained price rise for the rare earth products.

Figure 9: Global Rare Earth Reserves and Production



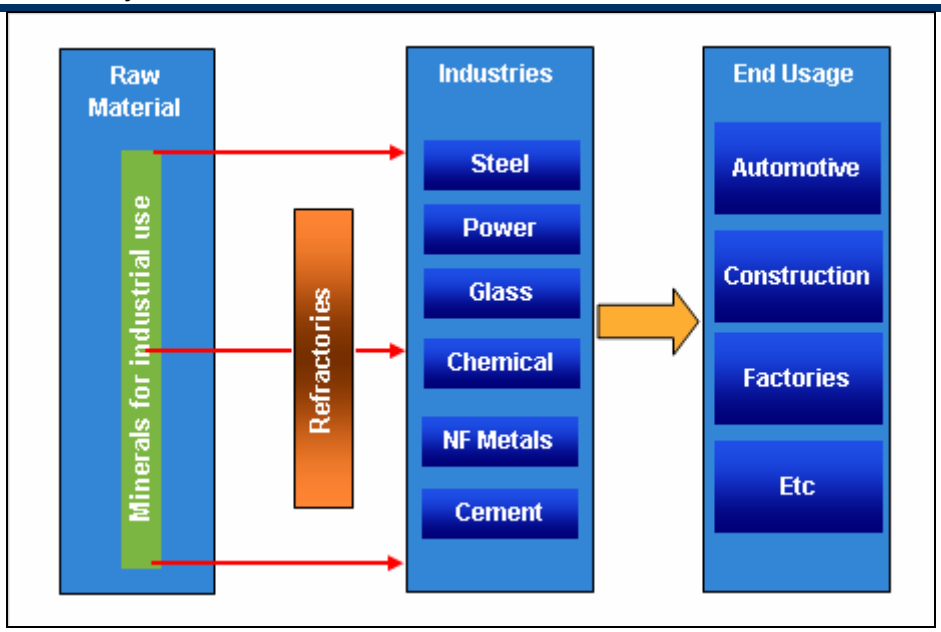
Source: U.S. Geological Survey

Figure 10: Share of Rare Earth Usage



Source: BCC Research

Figure 11: Refractory

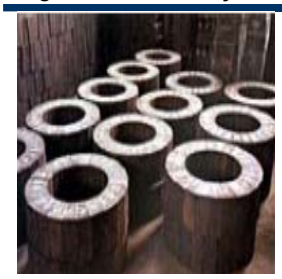


Source: OSK

China by far the largest producers. Producing more than 60% of the 28-30m tons of the total world output in 2004, China is the world's largest refractory producer. At present, there are estimated some 1,300 refractory makers in China but most of them are small in size with little technology and structure to support large steel and glass plants. China invariably has significant influence over the world refractory market due to the size of its domestic market and control of raw materials input.

Widely used in the heavy industries. The used of refractories is indispensable for high-temperature industrial processes. Generally used in heavy industries such as steel, power and glass, they are inorganic non-metal materials with very high termal resistance of 1580^{o} C. They are used to make heat treatment and containment products such as crucibles and linings for furnaces and kilns for heavy industries. Refractory posses qualities that make them unique under high temperature such as thermal shock resistant, chemically inert with low conductivities and non-expansionary. Magnesite, or magnesium oxide and calcium are commonly used as refractory materials. For extreme temperature, Zirconia is the key material used.

Figure 12: Refractory Products



Magnesia-chrome refractory bricks

Tubular checker bricks in glass melting kilns

Pre-fabrication parts for launders blast furnaces

Corundum products for petrochemical industry

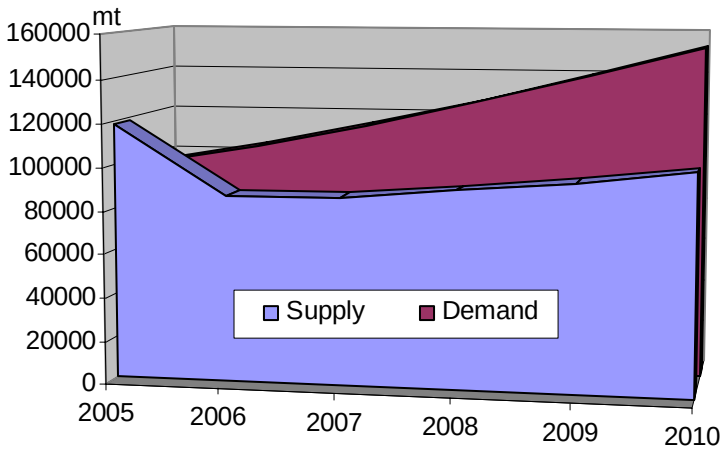
Source: Company

Rare Earth

An industry exhibiting strong demand. As environmental awareness, energy conservation and miniaturisation of electronics gadgets take central stage in the world, the adoption and wider use of RE will increase. Automobile industry, especially hybrid vehicles, is driving demand for the products. Neo Magnets (contain approximately 33% of Nd with notable mix of Pr, Dy, Tb) and NiMH batteries (La, Ce, Pr, Nd) are widely used in hybrid vehicles electric motors, power steering, batteries and etc. RE consumption in Neo magnets sector has grown explosively from near 9,000 mt in 2003 to over 17,000 mt in 2005, an almost 40% CAGR rate over the two years. Strategy Analytics estimated that hybrid vehicle production may rise to 2.5m by 2011 from the current 0.5m unit production, a 4 fold jump. NiMH batteries also experienced strong demand growth with RE consumption rising 16% in 2005 to 7,200 mt. It is expected that the sector will grow at an average of 31% p.a. to 27,300 between 2005-2010 (BCC Research). RE demand for display and lighting grew 8% in the past two years and is expected to growth 13% over 2005-2010. Polishing powder segment that has grown 8%, will grow 9.2% in the same period. Also, tighter environmental regulations in China, including the enforcement of new engine emission standards in 2000, will continue to increase the market for exhaust purifiers and catalytic converters. The increasing affluence of the Chinese people with a rising per capita income also means higher consumption of electronic gadgets. All these factors pointed to a structurally higher demand for rare earth products.

Global demand set to exceed supply. In 2005, rare earth demand was 95,262 mt, a rise of 9.7% from 2004. Industry expert expects rare earth demand to grow at least 10% p.a. on a compounded annual rate between 2005-2010. The increase will outstrip the declining supply by 2006. Global RE supply of 118,700 mt in 2005 is expected to fall to 86,520 mt this year and with production quotas in China firmly in place, the deficit-gap will get acute by 2007. The only large new mine, Mt Weld in Australia, operated by Lynas Corporation, is not expected to roll out production until mid-2008. Mt Weld has recoverable resource of 432,000mt of REO with annual production expected at initially 9,000mt pa and growing to 15,000 within five years. Even incorporating the increase from this new mine, global demand will still be expected to outstrip supply with 51,900 mt shortage by 2010, unless China raise its output. This shortfall is almost 34% of total RE consumption in 2010.

Figure 13: Global Rare Earth Supply-Demand Trend



Source: OSK ASIA, China Rare Earth Information Centre, Various

Tighter supply ensures a sustain rise in price. Given its role in high-tech application, RE is now viewed as strategic to China, resulting in implementation of production control and industry consolidation. Tightening supply measures, including production and export quotas were meant to step up industry integration and prevent low-pricing competition in the export market. These measures will help ensure a sustained price trend. Since its imposition of production quota in April, rare earth prices have been firming up gradually. Latest customs statistics showed that rare earth exports from China's leading ports were down slightly in volume in October, but up notably in value terms. Tianjin and Shanghai, two leading ports for Chinese rare earths, export approximately 27,000 tons, a decline of 3.8% as compared the same period last year. However, due to the 40.2% y-o-y surge in average pricing to

US$3,504/ton, the export value was 34.9% higher. State owned enterprises exports were down 19.5% to 13,500 tons offset by private and foreign invested enterprises rise of 24.1% and 24.8% respectively. Late October, the Ministry of Land and Resources warned miners in 163 mining areas to clean up and standardised. Four of these areas related to rare earths i.e. Baiyunebo in Baotou City Inner Mongolia, Longnan rare earth mining in Jiangxi, Xinfeng County rare earth mining in Guangdong Province and Maoniuping rare earth mining in Mianning County, Sichuan Province.

Industry shake-up set to reduce competition from domestic players. Currently, there are only a handful operates at a sizeable scale with China Rare Earth one of the largest producers in term of capacity. Other than CRE, Baotou's China Rare Earth Hi-Tech (600111.SS) of Inner Mongolia, Shanghai's Yuelong and Jiangxi Rich Economy are the key domestic players. Internationally, loss making Neo Material of Canada, Rhodia of France and Nippon Yttrium of Japan are also key rare earth product producers. Lynas Corporation of Australia with its Mt. Weld mine will start commercial production only in 2008 at the earliest. However, competition is mainly confined to domestic players. The Ministry of Land and Resources announced in April that new licenses issuance will be frozen and no expansion will be allowed. These measures will cut supply by 27.1% in 2006 from 118,700 tons a year ago to 86,520 tons, said China Rare Earth Information Centre. Government's measures to consolidate the industry will squeeze out the smaller players, leaving room for bigger players to seize market share.

Refractory Materials

Steel industry remains the single largest factor for refractory demand. The macro-economic tightening in the past years has taken toll on steel demand with consumption slowing down from around 25% y-o-y growth to 9%. Judging from the past two year's trend, where slowdown of steel production continued to offer strong margins and growth for the refractory business of CRE because steel production slowdown tends to result in fragmented production schedules. A fragmented production often requires proportionally more refractory products per ton of steel produced. Hence, explained why the slowdown in steel production growth had not have major impact on demand for refractory.

Demand for steel to be sustained with railway projects boosting consumption. In the past 4 years, China steel production has been growing at a CAGR of 20% surpassing the other region average growth of 5% pa. Chinese government 11th Five year plan has earmarked 1.5 trillion yuan for railway network and trains upgrade in the country for 2006-2010. The Eleventh Five-Year Plan on Railway Development said the country will construct 17,000 km of new lines of which 7,000 is for passenger transport. Furthermore, 8,000 km of the existing single line railway system will be double tracked and 15,000 km electrified. The country's railway is expected to reach 90,000 km. We believe the planned development for the railway sector should help lift the demand for steel production and hence CRE's refractory materials.

Steel industry consolidation need not be a bad thing for CRE. Chinese government announced the demolishing of the outdated steel-smelting ovens of 26 steel firms in a move to modernise the industry. National Development and Reform Commission's (NDRC) said China will scale back iron and steel production by about 100 million tons in the next five years by eliminating energy inefficient and redundant plants. The beneficiaries of this move are the large steel producers who happened to be CRE's key customers. Supply cut will firm up prices and increase demand for these companies, making better demand for CRE's refractory materials. Prices of major products for the company have remained stable.

FINANCIAL AND FORECAST

Turnover and EPS forecast to growth 13.2% and 16.9% CAGR respectively between 2006-2009. We expect topline to expand 13.2% CAGR for 3 years to 2009 on the back of the followings: -

- Stronger growth in the refractory business in view of the expansion into high purity magnesium grain production. The company is expected to invest in high purity magnesium grains, a key material for the production of high temperature ceramic. The initial capacity upon completion of phase 1 by early 2007 is 50,000 ton pa while phase 2 & 3 will increase capacity to 150,000 tpa by end 2007. We conservatively forecast 45,000 tpa magnesium grains sales for 2007 and 100,000 tpa for 2009. This investment is expected to be margin enhancing given that high temperature ceramics have a gross margin of 40% versus 30% for traditional refractory materials. Moreover, magnesium grains are commanding even higher margin of 50%.

- **Magnesium grains expansion plan to boost margins.** Having the fattest gross margins of 50% among the products, the plan to invest in high purity magnesium grain to eventually boost a production capacity of 150,000 tons per annum by end 2007 will enhance the overall margins for the company. The management guided that 30% of the supply will be consumed internally. Incorporating this increase in capacity and conservatively assuming that the gross margins of magnesium grains to fall from 50% in 2006, 48% in 2007, 46% in 2008. We expect average margins for the refractory products to improve to 36.7% in 2007 before stabilizing at 37.5% in 2008.

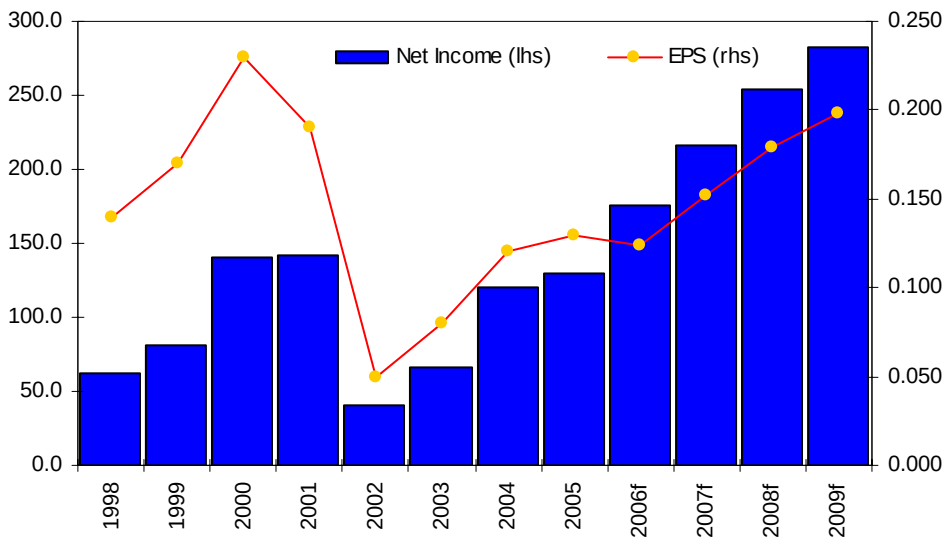
- **Changing product mix.** Rare earth sales rose 24% in 1H06 despite a 5% decline in tonnage as shift toward better product mix has successfully positioned the company to take advantage of product prices to raise sales and increase margins. Currently, downstream products accounts for only 15% of the revenue, the company plan to boost this share to 50% by introducing and developing more high end products. Expansion of the trichromatic phosphor production capacity, increase production of polishing agent and development of catalysts for automobile exhaust gas treatment should allow this to materialise. Higher downstream product sales will also boost earnings as mid-stream products yield average gross profit margins of 17-18% while downstream products generally command gross margins of 25-30%, giving at least a 10 ppt improvement in the margins.

- **Greater sales to multinational companies.** The strategic alliance with General Electric with technical support for its rare earth business and tie-up with a major Korean customer for the supply of fluorescent materials will boost its market share of the multinational companies for its rare earth products. Its partnership with Nippon Steel in refractory material production will increase its export to Japan and also boost its standing.

- **New applications of rare earth to drive demand and tighter supply to support strong price trend.** Given the wider adoption of rare earth usage and measures by the Chinese authorities to tighten supply, the prices of rare earth are expected to remain firm supporting the margins for the company. Recent industry consolidation and closures of small plants as well as licensing restriction have cut supply. Stronger rare earth prices have historically been good for the company's margins.

- **Up and down stream integration provide cost synergies.** By integrating its up stream operations, the company is able secure supply at lower cost. It Suhai acquisition is one good example. Its downstream expansion will expand its average gross margins. We expect overall gross margins to improve 2.5ppt for rare earth products and 4ppt for refractory.

Figure 14: Net Income and EPS Trend

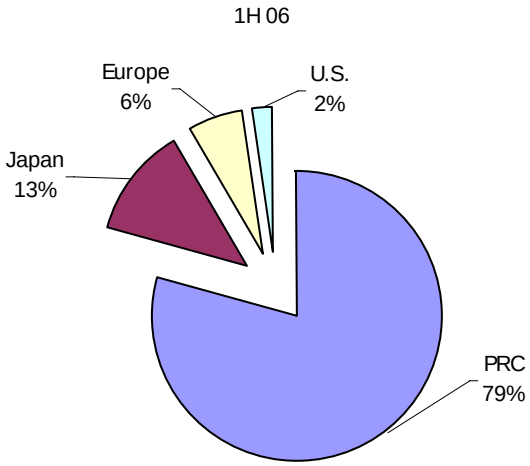


Source: OSK ASIA, China Rare Earth Information Centre, Various

IMPACT OF RENMINBI APPRECIATION

78% of sales are domestic, only 2% net exposure to USD risk. The company sold nearly 78% of its products in the domestic market while exports to Europe and Japan constitute 19%. We reckoned the net forex exposure of its sales is only 15% i.e. those products export to the U.S. and Japan. Euro has been appreciating either in tandem or faster than RMB, hence forex exposure to this segment is unlikely to be significant.

Figure 15: Segmental Sales By Geographical Distribution



Source: OSK

Bottom line impact insignificant. The net direct impact of a 10% depreciation of the U.S. against RMB will cut sales by a mere 2% at most, in our view. EPS impact of this 10% depreciation is negligible. However, the indirect effect arising from the slowdown of the global growth as a result of the USD weakness is unquantifiable. Although this remain a risk to the company's sales.

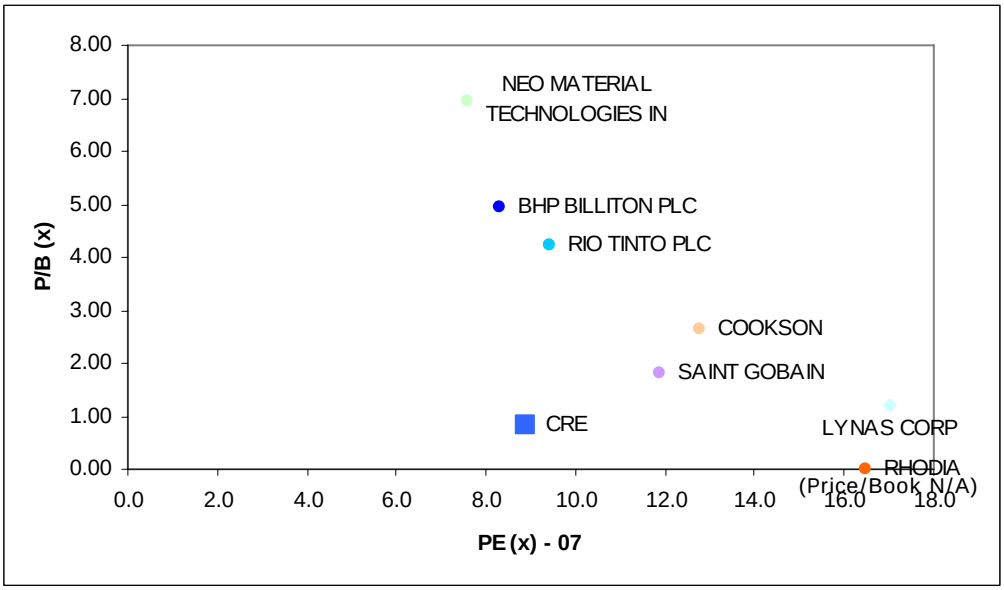
VALUATION

Valuation metrics. Valuing CRE posed several difficulties as local peer group valuation does not provide a meaningful basis. Despite the dominant position of China in rare earth and refractory production, there is only one domestic listed peer to compare. Even that yardstick is misleading in view of the large disparity of operating performance for these two domestic listed entities. DCF valuation itself is also inadequate to gauge the stock fair value given the difficulty and crudeness in predicting the rare earth (commodities) price trend over a long period of time. We believe an appropriate valuation metrics for CRE is by using the PER and P/B of wider peer group that includes China commodity majors, and cross checking this with its international peers.

COMPARABLES

Valuation undemanding. CRE is trading at 8.9x and 7.6x FY07 and FY08 EPS respectively and at 0.8x FY06 P/B. We think CRE should be trading at higher PER and P/B given its superior track record and outstanding execution of its business strategy, both of which have been unquestionably proven. Granted, its strong war-chest with near HK$700m cash should allow it to benefit from industry-wide consolidation and China's desire to influence the global rare earth industry. It is one of the two listed entities that the country can entrust to lead the industry. Clearly, at the present level, the share price does not fairly reflect this.

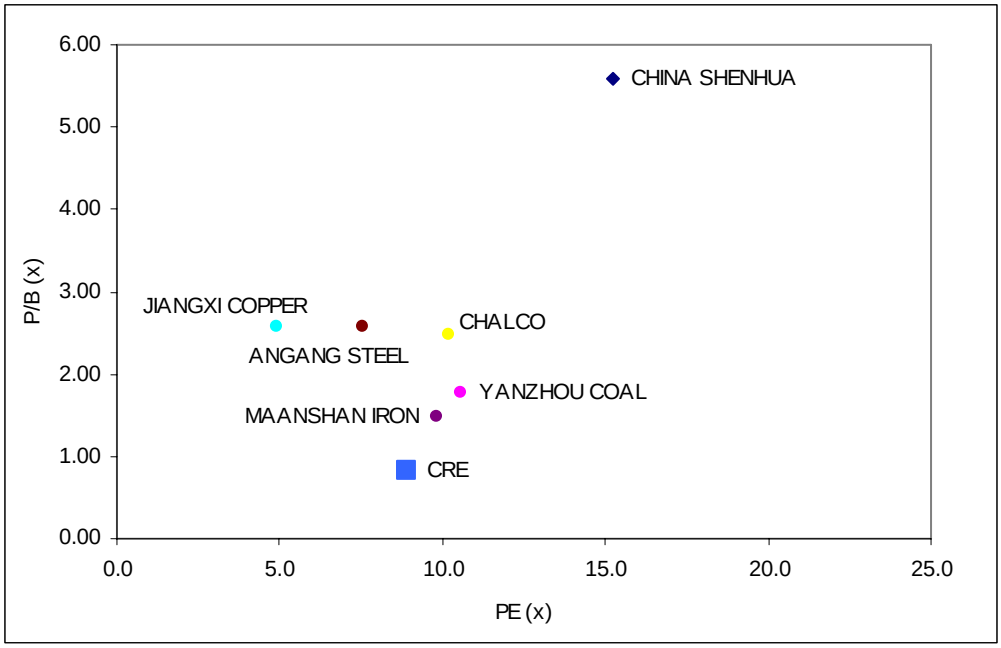
Figure 16: Global Peers Comparison



Source: Reuters, Bloomberg, Companies, Various

Global peers trade at way higher P/B. Average P/Book of global peers (excluding Forseco and Rhodia) is currently trading at 4.2x while the average FY07 PE is 13.3x. Both multiples appear to show that CRE is oddly out of line despite its superior profit track record. CRE trades at 33% discount to global peers sector PE and 81% to P/Book.

Figure 17: Domestic Peers Comparison



Source: Reuters, Bloomberg, Companies, Various

Domestic commodity peers as alternative benchmark. Offering better benchmarking given the number of listed entities, we are using domestic commodity companies such as Jiangxi, Shenhua, Yangzhou and etc as an alternative to value CRE. The average multiples for these stocks (including Inner Mongolia Baotou) are 17.4x FY07 EPS and 3.0x FY 06 P/B and 9.7x and 2.7x respectively if Inner Mongolia Baotou is excluded. However, the low PER represent the cyclical peak of their earnings and the falling commodity prices in recent time. Although some commodity stocks in China are trading at lower PER, they are subject to bumpier earnings risk. On the other hand, China Rare Earth is not a pure commodity stock as it is a mid-stream producer of rare earth products and refractories. It has remained profitable even during the relatively difficult period in 2002 and 2003. Comparing with the like peers, CRE is still an underperformer in term of share price.

On this benchmark, PER of 12x FY 07 and 10x FY 08 EPS should be fair. This value CRE at HK$1.82, a 24% upside. **INITIATE COVERAGE WITH A BUY.**

Table 1: Sector Valuation Comparables

	Price (Traded Currency)	FY/E	Currency	Core P/E (X)		PBR (x)		2-year EPS	ROE (%)		Div yield (%)	Net
				FY06E	FY07E	Recent FY		Cagr (%)	FY06E	FY07E	FY06E	Gearing (%)
CHINA SHENHUA	17.68	Dec	RMB	17.3	15.2	5.58		11.09	29.05	27.7	1.9	51.5%
YANZHOU COAL	6.35	Dec	RMB	10.9	10.6	1.77		0.84	15.1	14.5	2.5	Net Cash
CHALCO	7.34	Dec	RMB	7.3	10.2	2.49		6.07	29.45	16.9	4.1	23.9%
JIANGXI COPPER	8.08	Dec	RMB	4.9	4.9	2.58		55.3	46.95	32.9	6.1	22.3%
MAANSHAN IRON	4.23	Dec	RMB	12.4	9.8	1.47		-2.25	11.9	14.1	2.8	41.3%
ANGANG STEEL	9.85	Dec	RMB	9.0	7.6	2.58		34.37	31.04	26.1	5.2	8.8%
INNER MONGOLIA BAOTOU S	12.01	Dec	RMB	109.2	63.2	4.24		151.66	N.A.	N.A.	N.A.	24.2%
BHP BILLITON PLC	25.77	June	USD	8.8	8.3	4.93		19.13	40.0	31.4	2.1	35.2%
RIO TINTO PLC	76.39	Dec	USD	10.0	9.4	4.21		31.32	46.0	39	1.5	10.7%
LYNAS CORP	0.41	June	AUD	N.A.	17.0	*	1.21	N.A.	-13.0	-10	N.A.	Net Cash
NEO MATERIAL TECHNOLOG	2.36	Dec	CAD	8.7	7.6	6.94		-4.51	N.A.	N.A.	0.0	376%
RHODIA	2.64	Dec	EUR	24.0	16.5	N.A.		N.A.	N.A.	N.A.	0.0	-
RHI	37.85	Dec	EUR	9.1	13.0	10.7	**	13.72	N.A.	N.A.	0.8	-
FOSECO	195	Dec	GBP	14.0	12.5	37.2		13.86	97	62	2.5	1009%
SAINT GOBAIN	63.6	Dec	EUR	13.5	11.9	1.80		18.34	12.7	13.07	2.5	Net Cash
SHINAGAWA	403	March	JPY	14.8	24.3	1.0		N.A.	N.A.	N.A.	1.2	101%
COOKSON	626.5	Dec	GBP	14.2	12.8	2.65		15.47	13.45	16.4	1.4	65%
CRE	**1.40**	**Dec**	**HKD**	**10.9**	**8.9**	**0.83**		**22.13**	**9.1**	**10.4**	**3.0**	**5%**

* 2009 consensus forecast ** 2008 consensus forecast

Source: Reuters, OSK Estimates

INVESTMENT RISK

Measure to slow capital investment growth may impact refractory demand. In the past two years, China has implemented a series of measures to slowdown the runaway growth of its capex investment. Although of late, it has said that the measures have successful tamed the sector, there is no telling whether further steps will be taken. Also, a slowdown in the economy may put a break to the impressive capital investment growth. A reversal in capital investment, hence demand for steel and glass industry will invariably reduce the demand for refractory materials.

Supply risk is a threat. The upstream business, rare earth mines, are predominantly controlled by state-owned companies. With the central government stepping up measures to curb low quality production, the source of supply will become increasingly important for CRE. Its size and connection will ensure that the company will continue to receive favourable supply from the upstream players. However, to reduce supply chain risk, it must secure a sustain source of its raw materials through investing in rare earth mines. Due to its status as foreign company, it has faced challenges to move into upstream as foreign companies are prohibited from owning mines in China. Negotiation is underway for it to expand into upstream but there is nothing concrete at this juncture.

Table 3: Summary

INCOME STATEMENT HK$'000	2004	2005	2006E	2007E	2008E
Total Revenue	**665.32**	**769.37**	**955.67**	**1,097.44**	**1,254.72**
Cost of Revenue Ex-depreciation	**(434.49)**	**(504.42)**	**(587.66)**	**(642.79)**	**(709.03)**
Depreciation	**(50.18)**	**(60.99)**	**(108.02)**	**(126.02)**	**(156.02)**
Gross Profit	**180.65**	**203.96**	**259.98**	**328.63**	**389.67**
Operating Expense	(39.25)	(32.29)	(29.34)	(33.72)	(37.85)
Operating Income	**141.40**	**171.67**	**230.64**	**294.91**	**351.81**
Interest Expense - Non-Operating	**(2.12)**	**(0.02)**	**0.00**	**0.00**	**0.00**
Net Income Before Taxes	**139.28**	**171.65**	**230.64**	**294.91**	**351.81**
Provision for Income Taxes	**(17.97)**	**(40.02)**	**(53.05)**	**(76.68)**	**(94.99)**
Net Income After Taxes	**121.31**	**131.63**	**177.60**	**218.23**	**256.82**
Minority Interest	**(1.65)**	**(1.42)**	**(1.78)**	**(2.18)**	**(2.57)**
Net Income	**119.66**	**130.21**	**175.82**	**216.05**	**254.26**

BALANCE SHEET HK$'000	2004	2005	2006E	2007E	2008E
Cash & Equivalents	227	153	710	487	559
Total Receivables, Net	204	339	378	470	530
Total Inventory	225	228	323	360	397
Prepaid Expenses	74	92	98	110	102
Total Current Assets	**730**	**812**	**1,509**	**1,427**	**1,588**
Property/Plant/Equipment, Total - Gross	714	815	1,049	1,384	1,634
Accumulated Depreciation, Total	(164)	(245)	(353)	(479)	(635)
Property/Plant/Equipment, Total - Net	550	570	696	905	999
Goodwill - Gross	137	200	200	200	200
Other Long Term Assets, Total	10	12	12	12	12
Total Assets	**1,426**	**1,594**	**2,418**	**2,545**	**2,799**
Accounts Payable	75	69	263	213	267
Payable/Accrued	26	44	51	56	63
Notes Payable/Short Term Debt	0	0	92	100	110
Income Taxes Payable	7	32	53	77	95
Total Current Liabilities	**108**	**145**	**459**	**446**	**536**
Long Term Debt	0	0	0	0	0
Minority Interest	17	19	25	27	29
Total Liabilities	**125**	**164**	**484**	**473**	**565**

Total Asset Net Total Liabilities	**1,301**	**1,430**	**1,933**	**2,071**	**2,234**
Share Capital	700	700	1,090	1,090	1,090
Retained Earnings	602	730	843	981	1,144
Total Equity	**1,301**	**1,430**	**1,933**	**2,071**	**2,234**

CASHFLOW STATEMENT

HK$'000	2004	2005	2006E	2007E	2008E
Net Income	139.3	171.7	175.8	216.1	254.3
Depreciation	50.2	61.0	108.0	126.0	156.0
Changes in Working Capital	(59.6)	(151.6)	(114.4)	(114.6)	(56.9)
Cash from Operating Activities	**136.5**	**79.7**	**169.4**	**227.5**	**353.3**
Net Purchase of Fixed Assets	(125.9)	(28.8)	(160.0)	(280.0)	(150.0)
Acquisition of Business	3.4	(115.0)	(100.0)	(100.0)	(100.0)
Purchase of Investments	28.5	(0.3)	0.0	0.0	0.0
Other Investing Cash Flow	0.6	2.9	0.0	0.0	0.0
Cash from Investing Activities	**(93.4)**	**(141.1)**	**(260.0)**	**(380.0)**	**(250.0)**
Other Financing Cash Flow	(3.4)	(0.0)	0.0	0.0	0.0
Cash Dividends Paid - Common	(19.7)	(19.7)	(63.3)	(77.8)	(91.5)
Sale/Issuance of Common	0.0	0.0	618.1	0.0	0.0
Short Term Debt, Net	(47.2)	0.0	92.2	8.0	10.0
Long Term Debt, Net	0.0	0.0	0.0	0.0	50.0
Cash from Financing Activities	**(70.3)**	**(19.8)**	**647.1**	**(69.8)**	**(31.5)**
Foreign Exchange Effects	0.0	7.3	0.0	0.0	0.0
Net Change in Cash	**(27.3)**	**(73.9)**	**556.5**	**(222.3)**	**71.8**

FINANCIAL RATIO

	2004	2005	2006E	2007E	2008E
Growth					
Revenue	45.56	15.64	24.21	14.84	14.33
EBIT	90.97	21.89	35.78	27.86	19.30
Net Profit	79.72	8.82	35.03	22.88	17.68
Profitability					
Gross Margin	27.15	26.51	27.20	29.95	31.06
EBIT Margin	20.94	22.08	24.13	26.87	28.04
Pre-tax Margin	20.93	22.31	24.13	26.87	28.04
Net Margin	17.99	16.92	18.40	19.69	20.26
ROE	9.20	9.11	9.10	10.43	11.38
Balance Sheet					
Gross Debt/Equity	0.00	0.00	0.05	0.05	0.05

Net Debt/Equity	0.00	0.00	0.00	0.00	0.00
Interest Coverage (X)	0.00	0.00	0.00	0.00	0.00
Inventory Turnover Days	123.57	108.35	123.45	119.72	115.50
Accounts Receivable Turnover Days	105.83	151.10	144.47	156.33	154.04
Payable Turnover Days	54.27	41.59	43.80	43.80	43.80
Fixed Asset Turnover (X)	0.93	0.94	0.91	0.79	0.77
Per Share Data					
EPS	12.00	13.00	12.37	15.20	17.89
DPS	2.00	4.00	4.45	5.47	6.44
Payout Ratio	16.50	36.38	36.00	36.00	36.00
Book Value per share	1.32	1.45	1.63	1.75	1.89
Valuation Ratios					
PER	8.50	6.31	10.91	8.88	7.55
Div. Yield	1.96	4.88	3.30	4.05	4.77
P/B	0.77	0.57	0.83	0.77	0.72
EV/EBITDA	4.25	2.92	3.04	2.99	2.35

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