Opportunities and Challenges for China’s Copper Industry

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I. Economic environment of China’s copper industry

II. Status quo of China's copper industry

III. Challenges for China's copper industry

IV. Opportunities and countermeasures for China's copper industry

V. Conclusion

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I. Economic Environment of China's Copper Industry
Macro economic environment: Growth of global economy declined

GDP Y-o-Y growth of major economies declined

- Euro zone
- USA
- Japan
- China

Countries depreciated currencies

Global trade protectionism emerged

Chinese export met resistance

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Macro economic environment: Manufacture enterprises are flowing out of China

- **Internal cause**
  - Decrease in demographic dividend
  - Mounting environmental pressure
  - Decrease in taxation benefits
  - Sluggish Chinese domestic demand
  - Adjustment of self strategy

- **External cause**
  - Weakened export
  - Trade protectionism
  - Developed countries stimulate employment
  - Advantages of Southeast Asia

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**Enterprise** | **Move to**
--- | ---
Adidas Suzhou Factory | Burma
Starbucks Ceramic Mug China Factory | USA
Jarden Carbon Fiber Bat, Safety Equipment Panyu Factory | USA
US headphone manufacturer Sleek Audio Dongguan Company | USA
US toy manufacturer Wham-O China Company | USA
US LED bulb manufacturer Seesmart LED | USA

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Macro economic environment: China’s going out efforts met resistance

External obstruction for Chinese economy

- China’s foreign exchange reserve cannot buy European and American hi-tech enterprises, technologies and products, investment of resources and mines met resistance, which forced China to buy European and American national debt, aircraft and agricultural products etc.

- In order to prevent robust growth of China’s export, trade rivals on the one hand implemented trade protectionism, and on the other hand forced RMB appreciation, resulting in reflow of many industries or transfer to Southeast Asia, so as bring hollow-out to China’s industry.

- In the raw material market, to resist efforts of Chinese enterprises in making huge investment in Africa to look for resources, rivals continually create and spread “China exports corruption and pollution, plunders resources” theory, trying to drive Chinese enterprises out of African raw material market.

Latest cases:
- Anti-dumping and countervailing investigation on PV industry
- Huawei and ZTE met overseas resistance
- Sany Heavy Industry investment project was confiscated

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RMB is marching steadily toward globalization

➢ In April 2009, the State Council decided to carry out RMB settlement pilot project for cross-border trade in Shanghai and four cities in Guangdong. In July 2009, the pilot project formally kicked off.
➢ In June 2010, the government canceled restrictions on overseas region, the business scope was clarified to cover RMB settlement for cross-border trade, service trade and other current accounts.
➢ In August 2011, the domestic scope of RMB settlement for cross-border trade extended to the whole country.
➢ By the end of 2011, the national total RMB settlement business amount for cross-border trade reached 2.6 trillion yuan.

![Graph showing RMB total remittance related to cross-border trade settlement (1 million yuan)](image)
Global copper industry situation: Future copper price faces pressure

**Macro environment**
- Growth of global economy slowed down
- European debt crisis fermented, American fiscal cliff

**Basic supply-demand**
- Due to release of earlier production capacity, the supply of copper concentrate picked up speed
- Growth of copper consumption slowed down

### Supply & demand data of copper concentrate & refined copper (1000 tonnes)

<table>
<thead>
<tr>
<th>Year</th>
<th>Copper Concentrate</th>
<th>Refined Copper</th>
<th>Consumption</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>16019</td>
<td>19651</td>
<td>19865</td>
</tr>
<tr>
<td>2012</td>
<td>16479</td>
<td>19950</td>
<td>20376</td>
</tr>
<tr>
<td>2013</td>
<td>17533</td>
<td>21140</td>
<td>20682</td>
</tr>
</tbody>
</table>

Data source: ICSG, figure of 2012 whole year and 2013 are forecast figures

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II. Status Quo of China's Copper Industry
Status quo of China’s copper industry

- China is the largest copper consumption country worldwide, its copper concentrate output also ranked top in the world. According to Antaike data, in 2011 China’s copper concentrate output was 5,197,000 tonnes, consumption was 7,330,000 tonnes, and therefore needed huge quantity of import. According to “The Twelfth Five Year Plan for Nonferrous Metal Industry”, by 2015 domestic copper concentrate production will be controlled at 6,500,000 tonnes, the apparent consumption will reach 9,700,000 tonnes.

- According to Antaike data, in 2011 the domestic production of copper concentrate contained 1,267,000 tonnes of copper, import copper concentrate was 6,376,000 tonnes which contained 1,721,000 tonnes of copper; but according to the Twelfth Five Year Plan, by 2015 China will newly add domestic and overseas owned copper mine capacity 1,300,000 t/a.

- According to Antaike data, in 2011 China’s recycled scrap copper contained 680,000 tonnes of copper, imported scrap copper contained 1,120,000 tonnes of copper, import crude copper is 417,000 tonnes; according to the Twelfth Five Year Plan, by 2015 the percentage of secondary copper output will account for 40%.

Data source: ICSG

<table>
<thead>
<tr>
<th></th>
<th>10000 tonnes</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>China’s output of copper concentrate</td>
<td>373.9</td>
<td>412.3</td>
<td>457.8</td>
<td>519.7</td>
<td></td>
</tr>
<tr>
<td>Growth rate (%)</td>
<td>6.92</td>
<td>10.27</td>
<td>11.04</td>
<td>13.52</td>
<td></td>
</tr>
<tr>
<td>China’s net import of copper concentrate</td>
<td>136.3</td>
<td>311.1</td>
<td>288.3</td>
<td>267.8</td>
<td></td>
</tr>
<tr>
<td>Growth rate (%)</td>
<td>-0.49</td>
<td>128.3</td>
<td>-7.33</td>
<td>-7.11</td>
<td></td>
</tr>
<tr>
<td>China’s consumption of copper concentrate</td>
<td>490</td>
<td>610</td>
<td>680</td>
<td>733</td>
<td></td>
</tr>
<tr>
<td>Growth rate (%)</td>
<td>7.41</td>
<td>24.49</td>
<td>11.48</td>
<td>7.79</td>
<td></td>
</tr>
<tr>
<td>China’s supply demand balance</td>
<td>20.2</td>
<td>113.4</td>
<td>66.1</td>
<td>54.5</td>
<td></td>
</tr>
</tbody>
</table>

Data source: Antaike
Status quo of China’s copper industry

- China’s copper processing capacity has reached 12 million tonnes in 2011, ranking top worldwide for 9 consecutive years, but its capacity utilization rate is only around 80%. By 2015 its production capacity will reach 16 million tonnes, there is excessive surplus in production capacity.
- China’s copper processing industry has low concentration degree, enterprises are mostly small, resulting in weak competitiveness; their regional distribution is also uneven.
- The capacity of high-grade, precision and advanced products in China’s copper processing industry only accounts for 40%, a huge quantity of such products depend on import; whereas mid to low end products are exposed to serious extensive competition.

### Output of major varieties of China’s copper processed products (10000 tonnes)

<table>
<thead>
<tr>
<th>Variety</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>Y-o-Y %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sheet strip</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>板带材</td>
<td>154</td>
<td>151</td>
<td>178</td>
<td>200</td>
<td>12.11</td>
</tr>
<tr>
<td>Tube</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>管材</td>
<td>162</td>
<td>157</td>
<td>176</td>
<td>134</td>
<td>-23.97</td>
</tr>
<tr>
<td>Bar</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>棒型材</td>
<td>136</td>
<td>151</td>
<td>182</td>
<td>113</td>
<td>-37.83</td>
</tr>
<tr>
<td>Wire</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>线材</td>
<td>332</td>
<td>346</td>
<td>374</td>
<td>400</td>
<td>6.84</td>
</tr>
<tr>
<td>Foil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>箔材</td>
<td>20.4</td>
<td>23.8</td>
<td>29.9</td>
<td>41</td>
<td>37.29</td>
</tr>
<tr>
<td>Others</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>其它</td>
<td>31.8</td>
<td>45.7</td>
<td>44.5</td>
<td>45</td>
<td>1.15</td>
</tr>
<tr>
<td>Total output</td>
<td>837</td>
<td>874</td>
<td>985</td>
<td>933</td>
<td></td>
</tr>
</tbody>
</table>

Data source: Antaike
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III. Challenges for China's Copper Industry
Challenge: Domestic resource shortage, dependence on export

- China’s copper mine resource is heavily dependent on overseas supply. China’s copper reserve accounts for about 5% of global reserve, but our total copper consumption accounts for about 40% of global copper consumption, copper concentrate needs huge quantity of import.
- China’s scrap copper mainly relies on import, the scrap copper recycling in copper industry is one of the major source of raw materials, at present China’s waste metal recycling rate is still very low, and mainly depends on import to meet its demand for scrap copper.

Global distribution of copper resources

- USA: 5%
- Australia: 13%
- Chile: 24%
- Peru: 14%
- Indonesia: 5%
- Mexico: 6%
- Russia: 5%
- Others: 23%

Domestic output of copper concentrate, import and percentage

- China's copper mine resource is heavily dependent on overseas supply. China's copper reserve accounts for about 5% of global reserve, but our total copper consumption accounts for about 40% of global copper consumption, copper concentrate needs huge quantity of import.
- China's scrap copper mainly relies on import, the scrap copper recycling in copper industry is one of the major source of raw materials, at present China's waste metal recycling rate is still very low, and mainly depends on import to meet its demand for scrap copper.

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Challenge: China lacks the pricing right of copper resources

China’s demand for copper resource is increasing day by day, which enables it to establish its irreplaceable position in the international market. Meanwhile, what has become a focal problem is China’s lack of final say in the pricing of copper resources, which is mainly manifested in the following aspects:

➢ Up till now, overseas rivals still controls monopoly advantages in capital\resource\info\drafting game rules\settlement warehouse cluster, and manipulates the market through monopoly\collusion\swindle.

➢ As a major buyer on the international market, China does not enjoy certain influence it deserves in the global pricing mechanism for copper resources, and has to passively receive the risk of price fluctuation on the international market.

➢ The price fluctuation risk suffered by Chinese enterprises is not only reflected in spot trade, it is also displayed in futures transaction. There are frequent cases of heavy loss sustained by Chinese enterprises through market corner by overseas institutions with advantages in capital and access to information.
Challenge: Lack of self-owned core technologies and equipment

- China’s copper industry lacks technology innovation ability, which is mainly reflected on inability to grasp core technologies and core equipment, lack of self-owned innovative core exclusive technology and technical equipment.

- In the aspect of copper production technology and equipment, China is now still repeatedly introducing overseas advanced technology and equipment. In the recent 20 plus years, China’s copper smelting industry has repeatedly introduced many times: Flash smelting technology, Noranda oxygen enriched smelting technology, and ISA oxygen enriched smelting technology.

- China’s copper processing industry did not start very late, but till today it still depends on import to introduce production technology and equipment for advanced copper high precision sheet & strip products. Currently, China’s copper industry production technology and equipment lag far behind overseas advanced standard, which directly affects industry’s core competitiveness.
Challenge: Excessively fast growth of copper smelting and processing capacity

- In recent years, China’s copper smelting and processing capacity have experienced a period of over-rapid development, extensive development mode is continuing, the growth in absolute volume of smelting and processing capacity is far higher than the growth in the supply of copper raw material, the investment tendency of smelting and processing capacity remained high, structural contradiction continues to worsen.

- According to statistics, in 2011, the structural ratio among China’s copper resource supply capacity and smelting capacity, processing capacity has increased to 1: 5: 10, which is grimmer than the 1: 4: 8 ratio in 2006.

- In a certain period in the future, smelting and processing capacity will resume rapid growth, the ratio will continue to worsen. According to statistics, the newly built capacity developed in recent two years has started production and reached designed production capacity recently, such situation of domestic copper smelting production reaching peak period will continue well into 2013.
Challenge: High copper price triggers substitute, which threatens copper demand

- In recent years, investment demand strengthened the financial attribute of copper price, the reform in copper price formation mechanism leads to violent fluctuation in copper price, price transmission cycle is prolonged —— which increased the price risk for manufacturers and processing enterprises, and reduced profit margin.

- The financial attribute also drives up copper price to remain at high level, it also brings price cut risk to the inventory of downstream processing enterprises —— which forces downstream enterprises to reduce stock, and use futures to avoid loss from stock depreciation loss.

- The high copper price also promotes the research, popularization and application of copper substitutes, such as using aluminum to replace copper, copper clad aluminum materials etc, which will threaten copper’s market demand. Electronic industry standard “Copper Clad Aluminum Wire” (SJ/T11223-2000) is being upgraded to become national standard, the electric industry standard “Copper Clad Aluminum Busbar for Power Transmission & Transformation Equipment” had been formally implemented on July 1, 2012; on October 28, 2012, Hebei Xinyi Power Cable Company’s rare earth-high iron-aluminum alloy power cable project with annual output value of 10 billion yuan has finished construction and launched into production.

- Long time high copper price might also activate the research and breakthrough in future superconducting materials and power transmission technology, which will bring still greater threat to the application and demand of copper and aluminum.

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IV. Opportunities and Countermeasures for China's Copper Industry

- Improve management
- Obtain resources
- Develop finance
- Formulate rules
- Develop technologies

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**Improve management**
- Organization reform and operation optimization of the Industry (borrow experience from Japanese conglomerates)

**Obtain resources**
- Actively invest and develop overseas resources, prioritize the selection of friendly regions and neighboring regions
- Offer the capacity of domestic copper industry in exchange for overseas resources
- Strengthen domestic refined copper reserve and copper mine development

**Develop finance**
- Actively develop copper related finance industry (copper ETF, industry fund, futures, option, derivative)

**Formulate rules**
- Explore the possibility of importing copper ore with RMB
- Strengthen financial and resource cooperation with BRICS countries
- Acquisition of LME through Hong Kong Stock Exchange and follow-up measures

**Develop technologies**
- Seek opportunities of copper industry based on “7 Major Industries and 20 Key Projects”
- In view of major future global trends, develop new copper products to meet the needs of new markets
Japanese conglomerates are the “parent” and organizer of various industries in Japan. Their stakeholders, and large shareholders are all financial institutions. There are six consortia in Japan, namely Mitsui, Mitsubishi, Sumitomo, Sanwa, Fuji and DKB. They often adopt the form of lateral combination, and consist of three core parts: Major banks, conglomerate, large manufacturing enterprises.

Japan’s conglomerates mostly originated from trade companies, which are basically positioned to provide transaction services: Assisting exporters to develop overseas market, provide market info to importers, supervising the commercial credibility of trading partners, and helping raise funds or arrange trade, or even provide global shipping services.

Conglomerates play integrated role in trade, investment, finance, talent, info and logistics, which enables them to become economic headquarters inside consortium or even the Japanese society. In the process of Japanese enterprises making overseas expansion, conglomerates will invariably enter a certain market ahead of others, one of their key functions is to open up local trade routes, and blaze the trail for the entry of manufacturing enterprises.

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Borrow Japanese experience:

- Manufacturer, trade firms, and government departments work in concerted efforts to develop complete resource purchase system.

- Industry capital, finance capital and commercial capital fulfilled perfect integration, so as to create maximum benefit.

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Resource acquisition: Actively invest & develop overseas resources, prioritize the selection of friendly & neighboring regions

- Judging from the status quo of China’s overseas copper mine investment, the focus of China’s overseas copper mine investment is Peru, Chile in South America and Zambia, The Democratic Republic of Congo in Africa. These four countries have huge copper reserve resources, in particular Peru and Chile account for very high percentages either in terms of project number and investment amount, which holds strategic meaning for China’s uninterrupted supply of overseas copper resources.

- At present, the implementation of “Walking Out” strategy is both facing opportunities and security challenges. In recent years, the international situation has become increasingly complicated, the situations in West and North Africa were in turmoil, European debt crisis continued to ferment, social security has become a worrisome issue. When evaluating the development of overseas resources, Chinese copper enterprises should pay attention to friendly regions and neighboring regions, such as Russia, Mongolia, and neighboring Central Asia and Southeast Asia.

- It is advisable to learn from the practice of Japanese conglomerates to enter mine development after cultivating long-term trade relation, signing long-term agreement, and acquiring mine ownership. For instance, to strengthen its strategic alliance with CVRD, Mitsui & Co mobilized its global resources in mine machinery, transport, and logistics.

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Chinese copper enterprises can explore the possibility of obtaining overseas resources by exchanging smelting or processing markets under the diplomatic support from the state government, if successful it will become innovative practice with huge significance.

The exchange method can be direct exchange through one-off negotiation, or long-term equity swap, which will both involve the pricing of each other’s object of transaction.

The cooperation partners of the exchange can develop from two sides to multiple sides. The resource variety can develop from copper resources to other metal resources, or even extend to agricultural product resources or marine resources.
Resource acquisition: Offer copper industrial market in exchange for overseas resources

**Domestic capacity**

- Fully utilize copper refining & processing capacity
- Obtain reward in the form of copper resources

**Overseas resources**

- Copper resources are smelted and processed
- No need of cash, pay reward in the form of copper resources

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Resource acquisition: Strengthen domestic refined copper reserve and copper mine development

- According to news released in June 2012, China is considering implementing purchase policy for important resource products including copper, rare earth, and tungsten, and is considering adopting management methods similar to those for rare earth for some rare metals. This marked a major policy adjustment of the Chinese government to regulate resource products. The above-mentioned “important resource products” consist of two parts: One part refers to products that China has severe shortage and therefore needs to import, such as crude oil and copper; another part refers to products that have rich reserve and output in China and are massively exported by China.

- Currently on the global market, rare earth, tungsten, tin, and antimony resources are mainly supplied by China, therefore it can be estimated that the national material reserve only need to purchase 1/3 of China’s export, which will be enough to bring about sharp price increase in the international market, and bring considerable proceeds.

- Chinese copper enterprises can explore the possibility of setting up copper reserve, deploy and expand SHFE and LME settlement warehouses. Copper reserve can also earn profit through buy-low and sell-high transactions. Meanwhile, it is also possible to adopt scale operation to profit from arbitrage.
Resource acquisition: Strengthen domestic refined copper reserve and copper mine development

- In the past several years, the reason that Chinese demand has become important factor leading to price hike of international bulk commodities, to a certain degree can be attributed to inadequacy in China’s strategic reserve, which deprives it of the ability to use the reserve to minimize supply and demand contradiction, and keep down market prices. Furthermore, because the import dependence of some important resources keeps rising, in order to prevent control by others, it is also urgently necessary to set up corresponding strategic reserve system.

- China is a country with huge copper resources, especially in western regions, where the prospective resources is huge, making them the backup base for searching new copper mine resources. Increase investment in geological prospecting, apart form actively looking for blind ore body and concealed ore body in the depth of old mine areas and peripheral areas, efforts can be strengthened to continue mine search on important metallogenic belts, further intensify efforts in geological investigation and resource evaluation in regions with mine search potential, in this way it is feasible to discover new valuable copper resources and transform resources into reserve as soon as possible.

- For instance: East Tibet copper-gold metallogenic belt, Southwest Three River copper multiple metal metallogenic belt, and copper-gold metallogenic belt in Xinjiang East Tianshan region are all prospective areas and belts for prospecting.
Develop finance: Actively develop copper related finance industry

- **Copper mine prospecting & mining fund**: Set up seed fund, raise public and industry capital to invest in high-risk, high-return copper mine prospecting right and mining right. Use financial and market means, mobilize social resources, in order to promote the rapid development of prospecting and mining industry.

- **Copper industry fund**: “Anhui Copper Industry Fund”, a project jointly set up by Tongling Development Investment Group Co., Ltd and Shanghai V. Stone Investment Management Co., Ltd, successfully signed contract on September 12, 2012. This is the first copper industry fund in China, this contract amount involved RMB 1 billion yuan, in which 60% is used as investment in copper and copper based new materials downstream related sectors in Tongling City, it also focuses on new energy, new materials, energy saving and environmental protection, and modern industry sectors.

- **Copper option**: Overseas copper option has a long history, take LME as an example, in 1987 LME metal option was formally listed for trading, since then its transaction volume grew day by day. The domestic market should also actively introduce copper option, and expand the means and channels for the industry to avoid price risks.

- **Copper ETF**: On December 7, 2010, copper spot ETF of ETF securities companies was officially approved to enter the market. The domestic market can also introduce copper ETF at appropriate moment to meet public investment needs for copper.
Formulate rules: Explore the possibility to import copper mines with RMB

- In April 2009, the State Council decided to carry out RMB settlement pilot project for cross-border trade in Shanghai and four cities in Guangdong, in July 2009, the pilot project formally kicked off.
- In June 2010, the government cancelled restriction on overseas regions, clarified the business scope available for RMB settlement to cover cross-border cargo trade, service trade and other current accounts.
- In August 2011, the regional coverage scope for RMB settlement for cross-border trade extended to the whole country.
- By the end of 2011, the national total RMB settlement business amount for cross-border trade reached 2.6 trillion yuan.
- Chinese copper enterprises can explore the possibility of using RMB to import copper ore under government support. Using RMB as settlement currency for international trade will provide a new option for copper enterprises in international trade settlement, it will help increase trade convenience, improve trade efficiency. It will further help improve the ability of withstanding exchange rate risks, save the cost of exchange conversion, and will also promote RMB to become a global currency.
Formulate rules: Strengthen cooperation with BRICS countries

- In April 2012, BRICS countries signed “BRICS Bank Cooperation Mechanism Master Agreement In Extending Credit Facility” and “BRICS Multilateral Letter Of Credit Confirmation Facility Agreement”. The target of financial cooperation points to: Encourage BRICS countries to use respective currency in the future for settlement and payment in mutual trade and investment, gradually reduce dependence on USD and euro, diversify each country’s foreign exchange reserve, in order to be better prepared for the risks of American and European loose currency policy and excessively high debts.

- In June 2012, BRICS countries announced to kick off the construction of financial security network, and establish a shared reserve pool, which will be used when any country experiences sudden capital flight. This proposal is based on Chiang Mai Initiative among Asian countries, and far exceeds the coverage scope of existing agreements among the five countries.

- Chinese copper enterprises can develop cooperation by taking advantage of the finance and resources of BRICS countries; meanwhile, as the cooperation deepens, they can develop new investment and trade.

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Formulate rules: Acquisition of LME through Hong Kong Stock Exchange and follow-up

- As the pricing center of global nonferrous metals, LME occupies leader position in global nonferrous metal transactions. LME accounts for 80% of global base metal transaction volume, whereas China is a large consumption country of base metals, its consumption volume accounts for 40% of global aggregate. Therefore, acquisition of LME through Hong Kong Stock Exchange holds certain significance for Chinese consumers and futures market.

- After acquisition of LME through Hong Kong Stock Exchange, domestic enterprises and administration departments should manage to improve LME member structure and rules, in order to promote market fairness and impartiality.

- After acquisition of LME through Hong Kong Stock Exchange, domestic enterprises should try to become LME members.
In July 2012, the State Council printed and distributed “Development Plan for National Strategic Emerging Industries in the ‘Twelfth Five Year Plan’ Period”. “The Plan” gave a list of detailed development targets, major actions and key policies for 7 major industries with key support including energy saving & environmental protection, new generation information technology, biotech, high-end equipment manufacture, new energy, new material, new energy cars during the “Twelfth Five Year Plan” period.

By 2015 the growth increment of strategic emerging industries must account for 8% of GDP, by 2020 it must reach 15% of GDP. “The Plan” clarified key development directions of seven industries, drafted a road map for industry development, and put forward milestone targets for the development of each sector.

20 key projects are implementations and refinements of the task targets for seven industries. Copper enterprises can follow the “7 industries and 20 key projects” to look for cooperation partners and develop emerging markets.

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Develop technologies: In view of major future global trends, develop new copper products to meet the needs of new markets

- To cope with shortage of fresh water resource, develop copper products for sea water desalination industry
- To cope with outbreak of solar storm, develop electromagnetic shield copper products
- In view of people’s increasing demand for health, develop and apply anti-bacterial copper products
- To cope with extreme climate, develop relevant copper products
- To cope with energy shortage, develop copper products for energy-saving and new energy fields
- To cope with depletion of mineral resources, and preserve copper resources, develop copper recycling industry

Think today for the future
Case: To cope with shortage of fresh water, develop copper products for sea water desalination industry

- In the “Twelfth Five Year Plan” period, sea water desalination will experience a rapid development period. According to statistics, in 2011 China’s sea water desalination ability has reached 660,000 tonnes/day, by 2015 there will be nearly 3 folds of improvement space.
- Sea water desalination will need to use copper alloy seamless pipe for heat exchange.
Against adverse domestic and overseas economic environment, China's copper industry is facing a number of grim challenges, while at the same time there are also many development opportunities ahead.

With the support of Chinese civilization and wisdom spanning several thousand years, and the experience and fortitude of colleagues in China’s copper industry, we are confident to overcome obstacles to march forward and welcome a better tomorrow!

Thank you!