Trends of titanium industry and market in China

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Before we start to talk about titanium industry in China, please allow me to take some time talk about the economy development in China.

1. THE ECONOMY DEVELOPMENT AND GDP OF CHINA IN THE PAST 10 YEARS

The average increasing of Chinese GDP is 10.7% in the past 10 years, the amount of the economy become the top 2 in the world. The average increasing of Cargoes import and export amount is 21.7%, China become the world top 1 export country and world top 2 import country. During the past 10 years, the average increasing of Above scale industry increase in value is 15.4%, especially in 2009 which is the worst suffered from the financial crisis, Chinese industry increasing still keep 11%. In the past 10 years, the scale of Chinese industry is more and more expended, become the most important part of world industry economy. According to the statistics, base on 500 kinds of industry products in the world, there are 220 which own world top 1 production capacity are made in China. In which the total products of steel, electrolytic aluminum, concrete, electrolytic copper, ship building, aircondition and refrigerator are over the half of world total products.

Actually, the key point to push the Chinese economy developing is the increasing of investment. After China join the TWO in November, 2001, the rapid development of international trading not only bring the huge increasing of export, but also the increasing of investment. Chinese investment rate was 38% in 2002 and till 2008 become 44%, almost the half of GDP in the year. Look at the investment contribute to GDP, investment always the main power to increase the Chinese GDP. From 2000 till now, the investment contribute to GDP average 45%, Please see the chart (Investment contribute to GDP)

2. THE DEVELOPMENT DIRECTION OF CHINESE ECONOMY IN THE NEXT 5 YEARS

In the next 5-10 years, Chinese economy is still keeping the high increasing, estimate 7.8-8.2%. The basic factors to prompt Chinese economy in high speed developing stably total no changing for long period, but the limit factors which restrict the high growing of Chinese economy is raising. So the Chinese economy is facing the process to
change the economy increasing way and economic structure. Looking forward to the future, the share of the manufacturing industry in the GDP will be decreased, service industry will be increased a lot. While in manufacturing industry internal, the supply chain structure will be changed to appropriate collecting produce and professional division produce. The consumer and domestic demand will instead of investment and export act as the main power of Chinese economy, the town city economy increasing will instead of industry economy increasing, the consumer investment will instead of producing investment.

In the past 30 years, China is top 1 country for the investment increasing, but the investment mainly in producing industry, mainly increase the capacity, the huge capacity investment must be change into the investment to the 3rd industry and new industry.

3. THE DEVELOPMENT OF CHINESE TITANIUM INDUSTRY IN THE PAST 10 YEARS

Chinese titanium industry developed by 4 periods, in 1950’s, titanium as the new material just be done the testing in the labs in some institute and research. In 1960’s, the only titanium sponge factory and mill products factory be built and started to producing. In 1980’s-1990’s, titanium started to be accepted more and more by the end users in chemical industry and metallurgy industry, Chinese titanium industry access the primary developing period. In the new millennium, benefit from Chinese GDP continues fast developing, Chinese titanium industry enter the fast growing period. Along with the using application more and more wide for titanium, and the demand of titanium was more and more from the different application, Chinese titanium industry producing chain was more and more complete, the companies who involved in titanium industry also more and more, in 2008, the reach the top of the history. Till the end of 2012, there are still remain 14 factories for titanium sponge, 23 factories for titanium ingot, 33 factories for mill products, 11 factories for titanium equipment.

In the past 10 years, along with the Chinese macro economy continues fast developing, from aerospace industry to all industries demand big quantity of titanium, Chinese titanium consumer increasing average over 30% every year. (see the chart)

We will find out that the Chinese titanium industry developing is synchronized with Chinese GDP development, while the fixed assets investment is the most important influence for titanium industry. Especially in 2010 and 2011, the GDP increasing is 10.4% and 9.2%, the fixed assets investment is 59.1% and 54.2%, even in the top of the history.
During this 2 years, titanium industry also got good development, but in 2012, the GDP increasing only 7.8%, the titanium consumer increasing only 1.2%.

Conclusion: In the past 10 years, Chinese titanium industry development supported by the fixes assets investment.

4. THE CURRENT SITUATION OF CHINESE TITANIUM INDUSTRY

The titanium sponge capacity reach 100,000 tons, the exact products are 57,000 tons, over capacity 79%. The titanium ingot capacity was 90,000 tons, exact products was 50,000 tons, over capacity 79%. Titanium mill products quantity was 51,000 tons, titanium equipments using less than 5,000 tons. We can see in Chinese titanium industry chain the upstream companies are too much, heavy over capacity.

More and more companies involved titanium industry cause the over capacity, then cause the low price competition with same quality, then cause the low quality with the low price.. We must say No! It's the time to change the current situation of Chinese titanium industry! (Ok, how to change? Let's see the outlook of Chinese titanium industry in the next 5 years)

5. THE DEVELOPING TRENDS OF CHINESE TITANIUM INDUSTRY IN THE NEXT 5 YEARS

The most important using application of titanium are aerospace industry, chemical industry, oil & gas industry, Power plant industry, medical industry, metallurgy industry, sports industry etc which are the important departments of national economy, so the relationship between titanium industry and the national economy are so close. In the recent 10 years, the high speed development of Chinese titanium industry benefit from the continues fast developing of national economy and investment of producing and manufacturing, but the GDP increasing will be slowly in the next few years, estimate the decreasing is about 2-3%, additionally, the investment direction also be changed, from the heavy chemical industry to the 3’rd industry (service industry) and new industry, the market demand for titanium may decreased about 5-6%, in this case, the structure of Chinese titanium industry must be changed.

Conclusion 1: The titanium market demand will be decreased in the next 5 years
On the other hand, Chinese government issued the “Twelfth 5 years plan”, in this plan titanium as the very important material, government will pay more attention for developing. But in high grade, the specially high quality grade and keypoint projects including China Big Plane Plan, lunar probe program, The orbital station plan, nuclear station plan, offshore plan, desalination plan etc. For such keypoint projects, only high level titanium can be used, so it’s the main job for Chinese titanium industry to improve the quality of titanium products, develop the new products in order to meet the requirement of national construction.

Conclusion 2: The market demand high quality titanium products, request the companies own the core technical and R&D ability.

What kind of companies can stand in such historical period?

6. THE TECHNICAL IMPROVEMENT OF CHINESE TITANIUM COMPANIES

In the recent years, Chinese titanium companies adopt the new craft, new technical, to make the titanium more pure, more fine, more strength, more uniform, to make the products with special purity, special bigger size, special precision, special shape, special thin thickness, which means Chinese companies own the high level for the titanium high grade products. Like Huaxia adopt the new technical craft to make the ultra-finining grain (the grain size can be 1-3 \( \text{мкм} \)), successfully use in aerospace and medical industry. Huaxia also invested the high precision continues annealing furnace ( the temperature tolerance only 2 degree), to make the mechanical property more uniform.

We believe all the Chinese colleagues involved in titanium industry are same as Huaxia people, willing to regard improvement of Chinese titanium technical as our own target, willing to work hard to achieve the strong manufacturer country instead of big manufacturer country.
TRENDS OF TITANIUM INDUSTRY AND MARKET IN CHINA

------LINJIAN

SHANGHAI HUAXIA INDUSTRY CO., LTD
The economy development and GDP of China in the past 10 years

GDP Growing Rate

GDP Growing Rate


Helen Cao, General Manager

October 6-9, 2013 • Caesars Palace, Las Vegas, Nevada, USA
The average increasing of Chinese GDP is 10.7% in the past 10 years.

The amount of the economy become the top 2 in the world.

The average increasing of Cargoes import and export amount is 21.7%.

The average increasing of Above scale industry increasing in value is 15.4%.

The scale of Chinese industry is more and more expended, become the most important part of world industry economy.
The key point to push the Chinese economy developing is the increasing of investment.
2. The development direction of Chinese economy in the next 5 years

- Chinese economy is still keeping the high increasing, estimate 7.8-8.2%.
- The Chinese economy is facing the process to change the economy increasing way and economic structure.

- The share of the manufacturing industry in the GDP will be decreased, service industry will be increased a lot.
- The town city economy increasing will instead of industry economy increasing, the consumer investment will instead of producing investment.
Chinese titanium industry developed by 3 periods.
In the new millennium, benefit from Chinese GDP continues fast developing, Chinese titanium industry enter the fast growing period.
Chinese titanium consumer increasing average over 30% every year.
Titanium consumer follow up the development of GDP

- GDP Guide Line in China
- Titanium consumer increasing
<table>
<thead>
<tr>
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<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
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<tbody>
<tr>
<td>GDP Increasing Rate</td>
<td>9.2%</td>
<td>10.4%</td>
<td>9.2%</td>
<td>7.8%</td>
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<td>Fixed Assets Investment</td>
<td>43.2%</td>
<td>59.1%</td>
<td>54.2%</td>
<td>50.4%</td>
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<tr>
<td>Titanium consumer increasing</td>
<td>17.3%</td>
<td>43.9%</td>
<td>12.6%</td>
<td>1.2%</td>
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**Conclusion:** In the past 10 years, Chinese titanium industry development supported by the fixes assets investment
4. The current situation of Chinese titanium industry
Heavy over capacity cause low price competition.
5. The developing trends of Chinese titanium industry in the next 5 years

Main Application of Titanium in China

- aerospace industry
- chemical industry
- oil & gas industry
- power plant industry
- medical industry
- metallurgy industry
- sports industry
The GDP increasing will be slowly in the next few years, estimate the decreasing is about 2-3%.

The investment direction also be changed, from the heavy chemical industry to the 3rd industry (service industry) and new industry.

The market demand for titanium may decreased about 5-6%.
Conclusion 1: The titanium market demand will be decreased in the next 5 years.
The Twelfth years plan

- Lunar probe program
- The orbital station plan
- Nuclear station plan
- Offshore plan
- Desalination plan
- China Big Plane Plan

Only high level titanium can be used
Conclusion2: The market demand high quality titanium products, request the companies own the core technical and R&D ability.
Chinese titanium companies adopt the new craft, new technical, to make the titanium more pure, more fine, more strength, more uniform.

Huaxia adopt the new technical craft to make the ultra-fining grain 6Al4V sheets.

Huaxia also invested the high precision continues annealing furnace (the tempreature tolerance only 2 degree), to make the mechanical property more uniform.
Thank You!