



Current situation & forecast of Chinese nickel industry

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Content

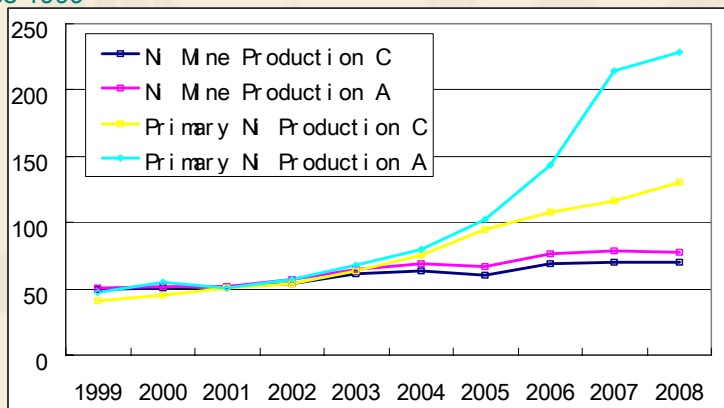
- ❖ Supply situation & forecast of Chinese nickel industry
- ❖ Production situation & forecast of Chinese stainless steel industry
- ❖ Nickel consumption & forecast in China
- ❖ Government policies to nickel market
- ❖ Conclusion

Supply situation & forecast of Chinese nickel industry

- ❖ Nickel products production since 1999
- ❖ Nickel products import situation
- ❖ Composition change of primary nickel
- ❖ Supply structure change of Chinese electrolytic nickel
- ❖ Introduction of nickel pig iron
 - 1、 Production
 - 2、 Advantage
 - 3、 Consumption
 - 4、 Cost
- ❖ Supply forecast of Chinese nickel products

Supply situation & forecast of Chinese nickel industry

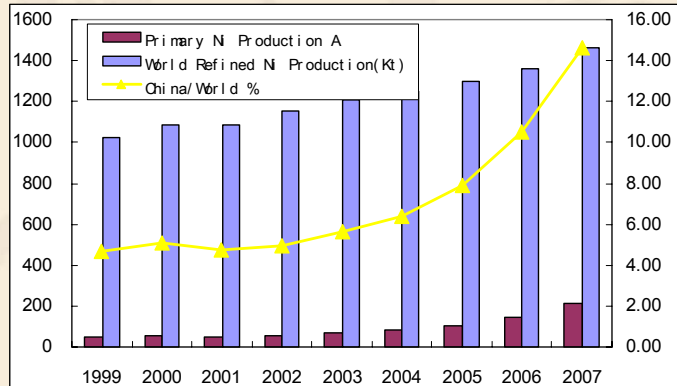
- ❖ Nickel concentrate (nickel content) & electrolytic nickel production since 1999



Sources : CNIA (C), Antaike (A).

Supply situation & forecast of Chinese nickel industry

In 1999-2007, global primary nickel production increased to 1.45 million tonnes from 1 million tonnes, while Chinese primary nickel production increased to 214,000t from 48,000t accounted for 14.6% of the total.

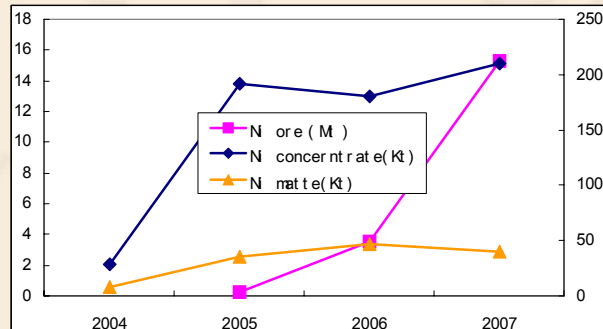


Sources : Antaike, WMSB

Supply situation & forecast of Chinese nickel industry

❖ Nickel products import situation

Increased primary nickel production irritated nickel mine, nickel concentrate and semifinished products production increasing sharply. In 2007, nickel mine imports and nickel concentrate imports were 15.28 million tonnes and 210,000t respectively in China, while high-grade nickel matte imports were 40,000t. This chart is about nickel mine (10,000t), nickel concentrate (1,000t) and semifinished products (1,000t) imports.



Sources : CNIA, Antaike

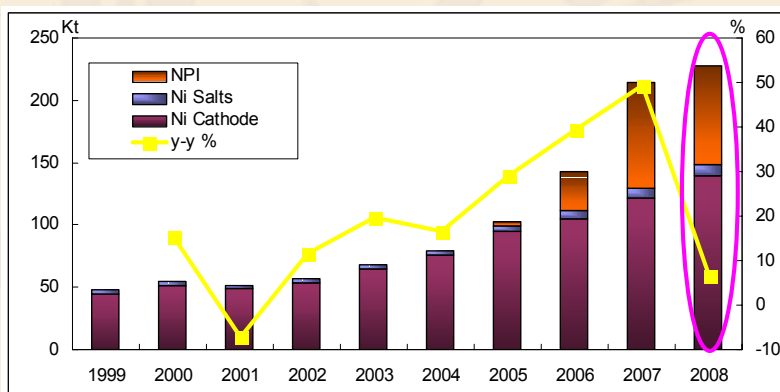
Supply situation & forecast of Chinese nickel industry

❖ Composition change of primary nickel

In 2007, primary nickel production increased to 214,000t in China from 48,000t in 1999, while production is expected to be 238,000t in 2008 with sharply decreased. Currently, primary nickel includes electrolytic nickel, nickel salt and nickel pig iron and nickel pig iron production accounted for 39.7% of primary nickel production as significant component of China/World nickel supply.

Supply situation & forecast of Chinese nickel industry

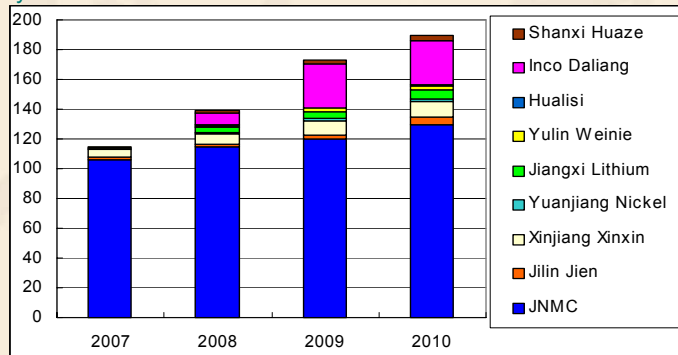
The chart below is about composition change of primary nickel since 1999.



Sources : Antaika

Supply situation & forecast of Chinese nickel industry

- ❖ Supply structure change of Chinese electrolytic nickel
- ❖ In the past Chinese electrolytic nickel was produced from JNMC, but some private enterprises and overseas-funded enterprises were commissioned while Jien Nickel Industry and Xinxin Mineral Industry expanded the production in recent years.



Sources : Antaika

Supply situation & forecast of Chinese nickel industry

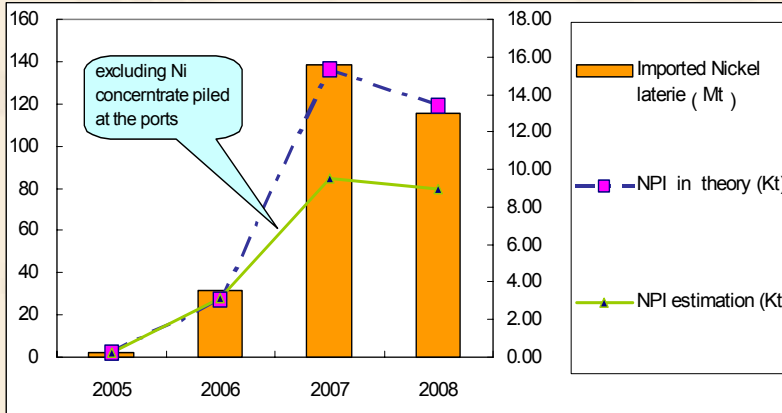
❖ Introduction of nickel pig iron

1、 Production

As significant part of Chinese nickel production, nickel pig iron restricted high nickel price and Chinese stainless steel enterprises reduced the cost after using nickel pig iron. In 2007, Chinese nickel laterite imports were 15.28 million tonnes with producing 134,000t of ferronickel and overstocked nickel laterite were 8 million tonnes in major ports in 2008 from 5 million tonnes in the end of 2007. We estimated that nickel pig iron production decreased to 80,000t in 2008 of metal content from 85,000t in 2007.

Supply situation & forecast of Chinese nickel industry

The chart below is about imported nickel laterite, NPI in theory and NPI in estimation in 2005-2008.



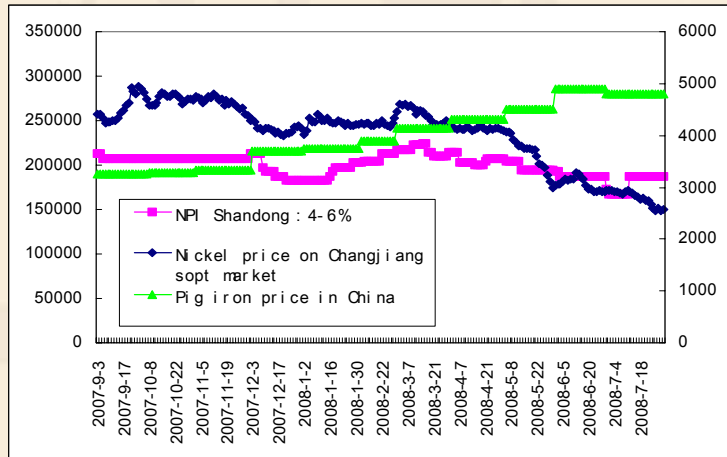
Sources: Antaika

Supply situation & forecast of Chinese nickel industry

2、Advantage

The advantage of NPI is cheap price and the chart on next page is about Shandong NPI (4-6%Ni) price and Changjiang nickel spot price since Sep. 2007. The chart shows that NPI price discount shrank gradually and NPI price has no discount with premium in middle May 2008 because of rising coke & electricity & domestic pig iron price. NPI price premium meant that steel plants paid for a part of iron in the NPI.

Supply situation & forecast of Chinese nickel industry



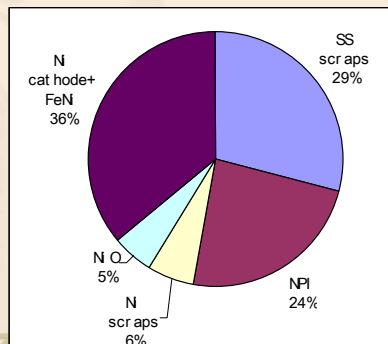
Sources : Antaika Unit : yuan per tonne

Supply situation & forecast of Chinese nickel industry

3、Consumption

Stainless steel began to buy NPI as materials due to its price advantage. In 2007 nickel consumption was 350,000t while 35% of stainless steel scraps & nickel scraps, 36% of electrolytic nickel & ferronickel and 24% of NPI.

Sources : Antaika



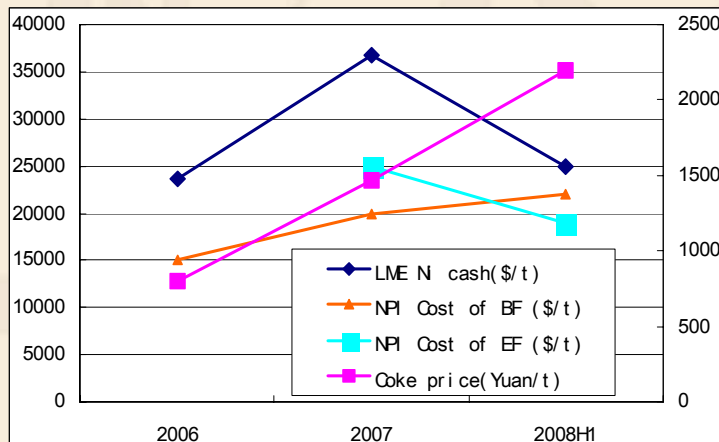
Supply situation & forecast of Chinese nickel industry

4、 Cost

The market participants estimated nickel price bottom level according to NPI production cost and NPI cost structure was changed because of decreasing nickel price and increasing energy sources price. Electric ferronickel price was around RMB160,000-180,000 yuan per tonne. Blast furnace ferronickel producers almost stopped production because of government policy and bottom nickel price.

Supply situation & forecast of Chinese nickel industry

The chart is about LME nickel price & NPI cost in 2006-2008.



Sources : Antaike

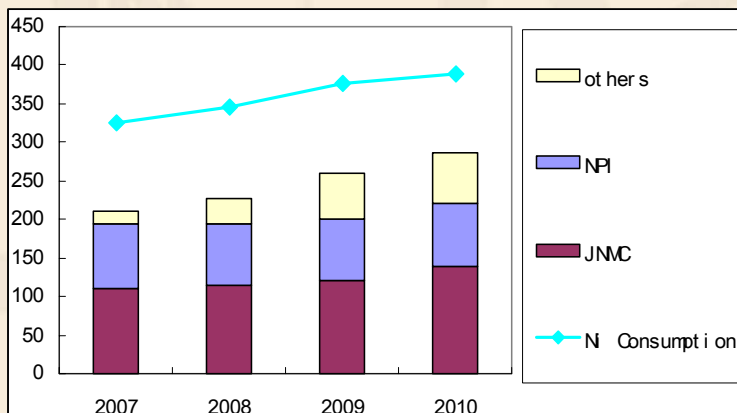
Supply situation & forecast of Chinese nickel industry

❖ Supply forecast of Chinese nickel products

Although lower nickel price, Chinese primary nickel production will increase slightly to 80,000t because of commissioned NPI projects of steel plants. Estimated Chinese primary nickel production was 225,000t in 2008 and 287,000t in 2010 while Chinese primary nickel consumption will reach 390,000t.

Supply situation & forecast of Chinese nickel industry

The chart below is about primary nickel production & NPI production & nickel production of JNMC & primary nickel consumption.



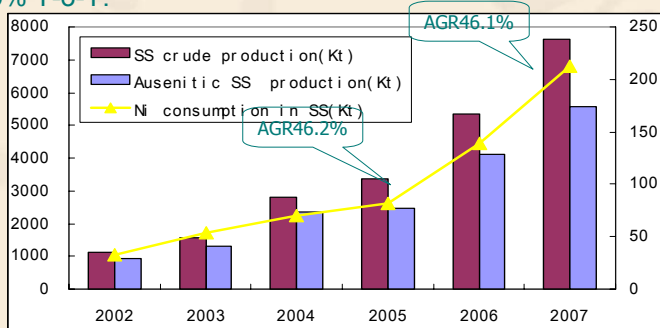
Sources : Antaika Unit : kiloton

Production situation & forecast of Chinese stainless steel industry

- ❖ Stainless steel production
- ❖ Stainless steel production structure
- ❖ Stainless steel production & production capacity forecast

Production situation & forecast of Chinese stainless steel industry

- ❖ Chinese stainless steel production increased to 7.61 million tonnes from 1.14 million tonnes while nickel consumption increased to 220,000t from 33,000t between 2002 and 2007. Nickel consumption increased speed is lower than that of stainless steel due to 400 series SS production growing gradually. Nickel consumption in SS is 240,000t, up by 9% Y-o-Y.



Sources : Antaika Unit: Kt

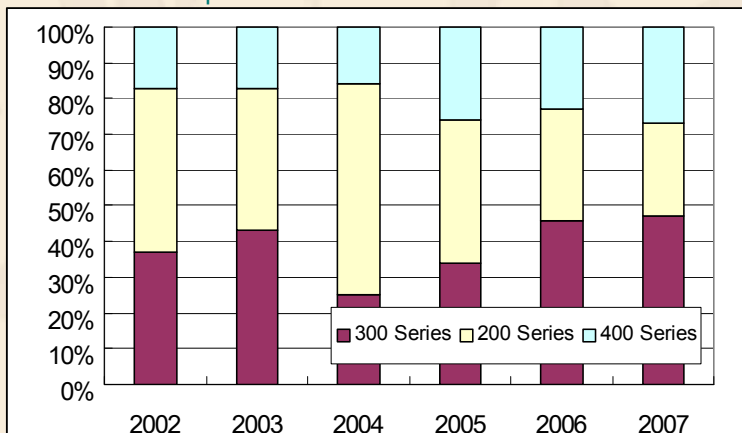
Production situation & forecast of Chinese stainless steel industry

❖ Stainless steel production structure

Austenitic SS production accounted for 73% of total SS production in 2007 compared with 83% in 2002. Meantime, 200 series SS production was more than 300 series. 300 series SS production rebounded gradually after 2005 because of commissioned SS projects of TISCO & Baosteel and so on. 300 series SS production accounted for 47% of total SS production while 200 series and 400 series accounted for 26% and 27% respectively in 2007.

Production situation & forecast of Chinese stainless steel industry

SS production structure chart in 2002-2007



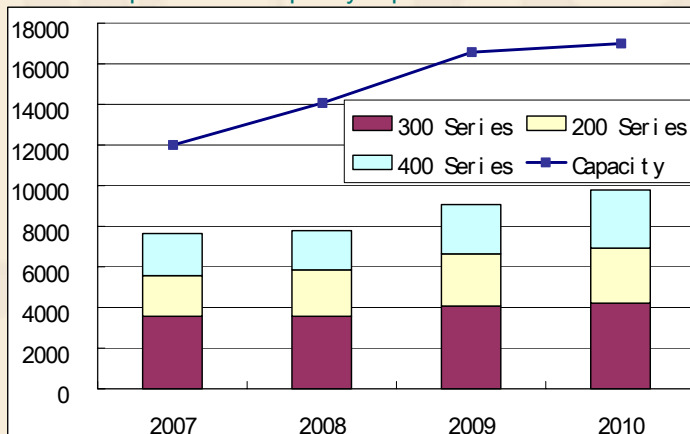
Sources : Antaike

Production situation & forecast of Chinese stainless steel industry

- ❖ Stainless steel production & production capacity forecast
Chinese SS smelting capacity has reached to 12 million tonnes in 2007 and SS crude steel production capacity is estimated to be 17 million tonnes in 2010. Domestic SS production growth decreased to 8-10% markedly and SS production capacity in 2010 will reach 9.8 million tonnes with 43% of 300 series SS, 28% of 200 series SS and 29% of 400 series SS, while SS production capacity will exceed 10 million tonnes.

Production situation & forecast of Chinese stainless steel industry

All series of SS production capacity & production forecast in the future



Sources : Antaika Unit : Kt

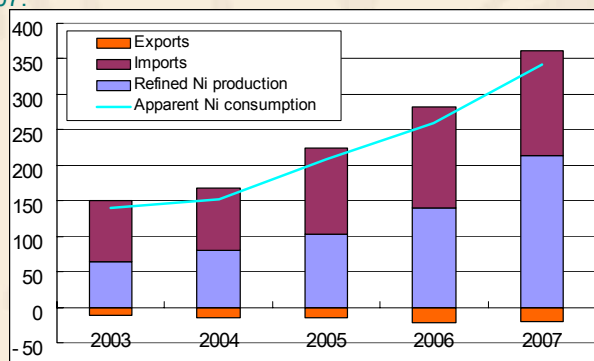
Nickel consumption & forecast in China

- ❖ Chinese nickel apparent consumption in past years
- ❖ Nickel consumption in SS industry
- ❖ Nickel consumption in plating industry
- ❖ Nickel consumption in alloy steel & manufacture industry
- ❖ Nickel consumption in battery industry
- ❖ Nickel consumption forecast in 2008

Nickel consumption & forecast in China

- ❖ Chinese nickel apparent consumption in past years

Nickel apparent consumption increased to 342,000 tonnes in 2007 from 140,000 tonnes in 2003 with annual growth of 36%, while it will reach 375,000 tonnes in 2008. The chart below is about Chinese nickel apparent consumption in 2003-2007.

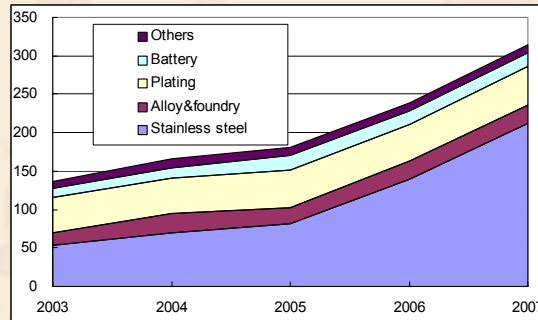


Sources: Antaika Unit : Kt

Nickel consumption & forecast in China

❖ Nickel consumption in SS industry

Nickel consumption in SS industry accounted for 67.3% of total Chinese nickel consumption in 2007, while 39.1% in 2003. The chart below is about Chinese nickel consumption structure change in 2003-2007.



Sources: Antaiko Unit : Kt

Nickel consumption & forecast in China

❖ Nickel consumption in plating industry

- ❖ Nickel consumption in plating decreased to 19.7% of total in 2006 from 33% in 2003 due to increased nickel consumption in SS industry, while it decreased further to 15.6% because of jumping nickel price.

There were many plating enterprises in Guangdong, but currently some enterprises have moved to other places home and overseas due to pollution. On the contrary, some enterprises with good profits expands production. The plating enterprises are lack of electricity all the time.

In short nickel consumption in plating industry is steady in some extent.

Nickel consumption & forecast in China

❖ Nickel consumption in alloy steel & machinofacture industry

Nickel consumption in alloy steel and machinofacture industry accounted for 8-12% of total in 2003-2007. Domestic high-temperature alloy steel & precise alloy steel production grew gradually, but heat-resistant SS production began to decline since reaching 50,000t in 2004. Nickel consumption of the there kinds of steel was 27,000t in China while far more than 27,000t oversea.

Nickel consumption & forecast in China

Nickel consumption in battery industry

Nickel consumption in battery industry decreased to 6.1% from 8.8% of total between 2003 and 2007 due to soaring nickel price leading technology development in battery industry.

High nickel price resulted in increasing nickel cost in battery industry, so some enterprises made research to reduce nickel dosage of battery. In 2007 nickel consumption in battery industry was 19,000t, up by 3.3% y-o-y lower than nickel consumption growth. Nickel consumption will not grow synchronously as increasing Ni-Cd & Ni-MH battery.

Nickel consumption & forecast in China

- ❖ Nickel consumption forecast in 2008

Average growth of domestic nickel consumption was 32.2% in 2003-2007 and nickel consumption will increase by 6.2% to 345,000t. SS production growing slowly and chromium series SS production proportion increasing will lead nickel consumption growth to release.

Government policies to nickel market

- ❖ Government policies in nickel products market
- ❖ Government policies in SS market
 - 1、 Export tax
 - 2、 Anti-dumping & anti-subsidy policy oversea

Government policies to nickel market

Since 2006 economy situation has changed home and oversea such as environmental protection request from EU and export rebates & increasing customs tax from China, influencing nickel market.

Government policies to nickel market

❖ Government policy to battery industry

On July 2006 EU improved request of environment protection resulting to exported battery cost increase significantly.

Results : Some medium & small sized enterprises gave up EU market due to economy and technology .

On Feb. 2008 China environment protection bureau suggested to cancel 13% of export rebates for four kinds of battery. On July 30th 2008 nation revenue canceled 13% of export rebates for Ni-Cd battery, which will influence Ni-Cd battery production & exports and nickel consumption in battery industry.

Results : Since 2004 Chinese nickel cadmium battery exports have declined gradually with exports of 552 million in 20008 down by 23% y-o-y. Ni-Cd battery production will declined to 800 million in 2010 from 910 million in 2004.

Government policies to nickel market

❖ Government policies in nickel products market

Currently, import tax of unwrought nickel and sintered oxide nickel is 0 while ferronickel import tax is 1%. Import tax of nickel sulfur is 0 since 2006.

The government canceled export rebates of 8% for unwrought nickel and imposed 2% of export tax on Jan. 1st 2005. Electrolytic nickel export tax increased to 15% from 2% since Nov. 11th 2006. Nickel ore & nickel concentrate export tax increased to 15% from 10% and ferronickel export tax increased to 20% from 10%, while nickel scraps import tax appended 10% and export tax of unwrought non-alloy nickel & unwrought alloy plating nickel anode & plating nickel anode are 15%.

Results : Chinese unwrought non-alloy nickel exports reached 23,000t in 2006, then it began to decline to 17,500t in 2007 and 6,500t in 2008.

Government policies to nickel market

❖ Government policies in SS market

In 2007 Chinese SS exports were 1.3 million tonnes, but in 2008 SS exports fell greatly influencing SS production & nickel consumption in SS industry due to anti-dumping & decreasing export rebates & increasing export tax.

Government policies to nickel market

1、 Export tax

In 2007 the government held 5% of export tax for HR & CR medium, heavy plate and increased export tax for 200 series HR SS coil (thickness:3-4.75mm) & 200 series HR sheet (thickness<3mm) to 10% from 5%, while SS ingots export tax is 15%.

SS seamless pipe : Since July 1st: export rebates 13-5%

SS welding pipe : Since July 1st: export rebates 13-5%
Since Aug. 1st: export rebates 5%-export tax 15%

Government policies to nickel market

2、 Anti-dumping & anti-subsidy policy oversea

In 2008 EU/Argentina took anti-dumping policy for Chinese SS and USA sued for Chinese SS exports anti-dumping & anti-subsidy:

On July 9th, EU announced that anti-dumping research for Chinese seamless steel pipe did not involve SS seamless pipe.

Zhangyuan Metal company declined subsidy for ring-shaped austenitic SS welding pipe to 105.73% slightly and other companies increased to 53.04% from 1.47% greatly.

Results : SS exports decreased.

Conclusion

- ❖ 1、 In the recent years Chinese nickel mine production increased slightly while refined nickel production grew significantly accounting for 14.6% of total in 2007. In 2008 Chinese refined nickel production is estimated to be 238,000t including 40% of NPI.
- ❖ 2、 NPI is the chief factor of global supply-demand balance to influence nickel price as low price nickel materials. Some NPI enterprises can not live due to low nickel price but Chinese NPI enterprises will improve in environment protection & production scale after commissioned projects of some steel plants.

Conclusion

- ❖ 3、 World nickel consumption grew rapidly because china's stainless steel production increased sharply in the past few years to 7.61mln tonnes in 2007, up by 42% Y-o-Y.
We estimated that China's stainless steel production was only 7.8mln tonnes in 2008 due to the sluggish global economy and the government carried out macro-control policy while China's stainless steel production capacity has become surplus.
- ❖ 4、 In 2007-2008, Chinese government took tight finance policy and canceled/declined export rebates for 300 kinds of commodities involving SS products & battery, resulting in lower nickel consumption growth. It is estimated that nickel consumption will reach 345,000t up by 6.2% y-o-y.



Thanks !