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# **The Chinese Nickel Quarterly**

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## Executive Summary

- ◆ The average LME nickel price was US\$26,898/t in Q1 2011, up by 33.84% m/m. 3-month nickel price was US\$26,915/t during the same time, up by 33.5% Q/Q. LME nickel stock dropped to 123.7kt in March 2011, down by 7,900t compared with early the year. Chinese domestic nickel price continued to be softer than international market. The spot nickel price was 204,000 yuan/t at Shanghai Changjiang market, up by 34% y/y
- ◆ Most institutes are not looking good about the nickel price for the rest part of the year due to the over surplus situation in 2011. It is estimated the world nickel output will reach 1.58mlnt in 2011, while the consumption is 1.56mlnt. Chinese domestic primary nickel output is expected to be 387kt, while the consumption is 600kt. The average LME nickel price is USD 24,000/t for 2011, and the Changjiang nickel price is about 190,000 yuan/t.
- ◆ Japan is a major nickel producer and consumer in the world. The earthquake affected much to the Hachinoe Smeltery. Thus Japanese ferronickel output dropped. It is expected the high grade nickel ore originally shipped to Japan will be transported to China, which is helpful to Chinese NPI production.
- ◆ Chinese nickel output continued to increase crucially in Q1 2011. However, import and export of refined nickel both dropped during the same period. The investment and financing demand was eased. Thus the apparent consumption of nickel is much close to the real nickel consumption.

## Overview of the Nickel Market in Q1 2011

LME nickel price went strong in Q1 2011 due to the ease US monetary policy and launch of nickel ETF. After Chinese traditional lunar New Year, China continued to raise bank reserve rate. LME 3-month nickel fell back from USD 29,300/t. the average LME nickel price was USD 26,898/t in Q1 2011, up by 33.84% y/y. the average 3-month price was USD 26,915/t, up by 33.5% y/y. LME stockpile had dropped to 123.7kt by the end of March this year, dropping by 7,900t compared with early 2011.

The rising trend of nickel was slowed down obviously, compared with copper and tin metal. The world nickel market faced severe supply pressure. The global nickel output is estimated to increase 187kt in 2011. The global nickel market will be 20kt over surplus in 2011.

**Table 1 Global Nickel Market Supply and Demand Balance in 2009-2011 (kt)**

	2009	Q1	Q2	Q3	Q4	2010	2011
<b>Output</b>							
China	278.0	72.3	89.1	79.6	85.1	326.1	387.0
Global	1335.3	337.9	348.2	342.2	368.1	1393.0	1580.0
<b>Consumption</b>							
China	449.0	130.0	131.0	120.0	134.0	515.0	59.9
Global	1300.4	368.5	372.2	353.5	368.0	1471.7	1560.0
<b>Balance</b>	34.9	(30.6)	(24.0)	(14.8)	(5.9)	(75.3)	20.0
Price(\$/t)	14,649	20,100	22,365	21,225	23,500	21,797	24,000

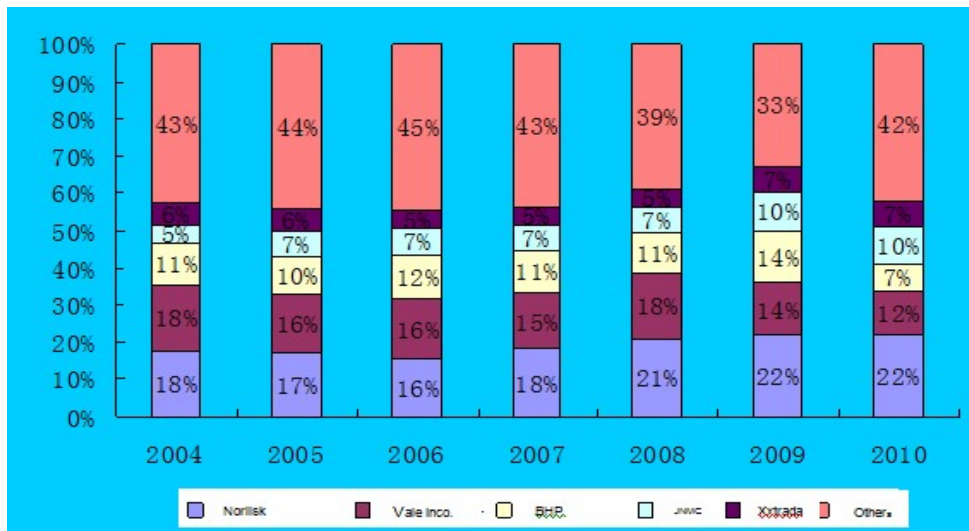
Source: Antaike, CUR

## International Market

### Global supply starts to boost

Nickel production concentration is the highest among the six base metals. The nickel output of top 5 nickel producers represented for 57% of the world total output in 2004. The ratio increased to 67% in 2009. But such situation was broken by Chinese NPI production in 2010. More and more people start to pay attention to the Chinese NPI market. In addition, refined nickel producers also planned to make expansion. New capacity will be released in 2011.

**Chart 1 Global Nickel Production Distribution in 2004-2010**



Source: Antaike

The following table shows the capacity that will be put into production or resume production this year. However, it is uncertain whether these projects will under operation on schedule, especially for some projects using hydrometallurgy technology. The world nickel market will have smaller pressure on supply if so.

**Table 2 Projects to Start Production or Resume Production in 2011 (Kt)**

Project	Country	Product	Capacity	Time	Output
Ambatovy	Madagascar	Nickel	60	Mid,2011	15
Taguang	Burma	Ferronickel	22	H2,2011	5
Onca Puma	Brazil	Ferronickel	52	Q1,2011	20
Barro Alto	Brazil	Ferronickel	40	Q2,2011	20
Goro	New Caledonia	Intermediate product	50	Q4,2011	5
	Papua New				
Ramu	Guinea	Intermediate product	33	H2,2011	5
Ravensthorpe	Australia	Intermediate product	40	Mid,2011	5
NPI	China	NPI			60
Santa Rita	Brazil	Ore			6
Falcondo	Dominica	Ferronickel			10
Sudbury&Voisey's					
Bay	Canada	Ore			50
Talivarra	Finland	Nickel			20
Total					221

Source: Antaike

The world nickel giants all post a strong will to expand production. Vale Inco produced 179kt of nickel in 2010, down by 4.2% y/y. Voisey Bay project of the

company mainly provides material to Clydach and Thompson plants.

A furnace in Sudbury plants of Vale exploded in February. The plant is expected to shut down for 16 weeks, and the output loss will be 15kt, accounting for 5% of the company's total output. Onca Puma project of the company in Brazil will commission the second production line in H2 this year. Its capacity is 58kt/y.

**Table 3 Main Production of Vale in 2009-2010 (kt)**

	3Q10	4Q10	2009	2010	Y/Y
Sudbury	6	8	43	22	-48.50%
Thompson	5	8	29	30	3.50%
Voisey Bay	10	25	40	42	6.60%
Sorowako	22	20	69	78	13.90%
Others	2	3	6	6	
Total	44	65	187	179	-4.20%

*Source: Vale yearly report*

Russia Norilsk Nickel Company plans to raise its nickel output to 300-313kt in 2011. Norilsk produced 297kt of nickel in 2010. It disclosed a joint venture of the company in South Africa will be able to produce 20kt nickel by the end of 2012, and its current output is around 6kt.

Anglo American Plc. Barro Alto nickel project in Brazil is produced the first batch of ferronickel product in March this year. The company will strive to lift the capacity utilization rate of the project in the rest of the year. Nickel output of Anglo American is expected to be doubled by the end of 2011.

Xstrata resumed production of Falcondo project in Dominica. The company once expressed it would resume production in March 2011 and would further open more capacity. The Koniambo nickel project in New Caledonia will be put into production in 2012 and reach full capacity by 2014.

### **Effect of Japan earthquake to nickel market**

Japan is a country who is lack of nickel resource. But Japanese production and consumption both occupy a standing place in the world. According to data from INSG, Japan produced 164.6kt of refined nickel in 2010, representing 11.4% of the world total output. Nickel consumption of Japan was 147kt in 2010.

Japanese nickel output maintained stable in the past years, while consumption post a descending trend. Japan mainly produced refined nickel, ferronickel and a little

nickel salts.

**Table 4 Major Nickel Producers in Japan and Source of Raw Material**

Company	Address	Product & Capacity	Source of Material
Oyama Smelter	Miyacu Kyoto	FeNi /13ktpy	Southeast Asia
Hitachi Refinery	Hitachi	Nickel/3.3ktpy	Australia
Tsuruga Smelter	Tsuruga	Sintering Oxidation Nickel/5ktpy	New Caledonia
Shimura Refinery	Tokyo	Nickel/9ktpy' FeNi/1.9ktpy	New Caledonia
Hachinoe Smelter	Hachinoe	FeNi/44ktpy	Southeast Asia
Hyuga Smelter	Hyuga	FeNi/21ktpy	Southeast Asia
Niihama Refinery	Niihama	Nickel/60ktpy	Southeast Asia
Matsuzaka Plant	Nickel Matsuzaka	Nickel/60ktpy	Indonesia

Source: Antaike

Japan's Pacific metal Co., LTD, the largest ferronickel producer in Japan, was affected much by the earthquake. Its Hachinoe Smelter had to be shut down due to damage of equipment. Pacific owns 3 plants in Japan, and Hachinoe Smelter is the largest among the three, with 44ktpy production capacity. Half output of the company exported to South Korea, China mainland and China Taiwan.

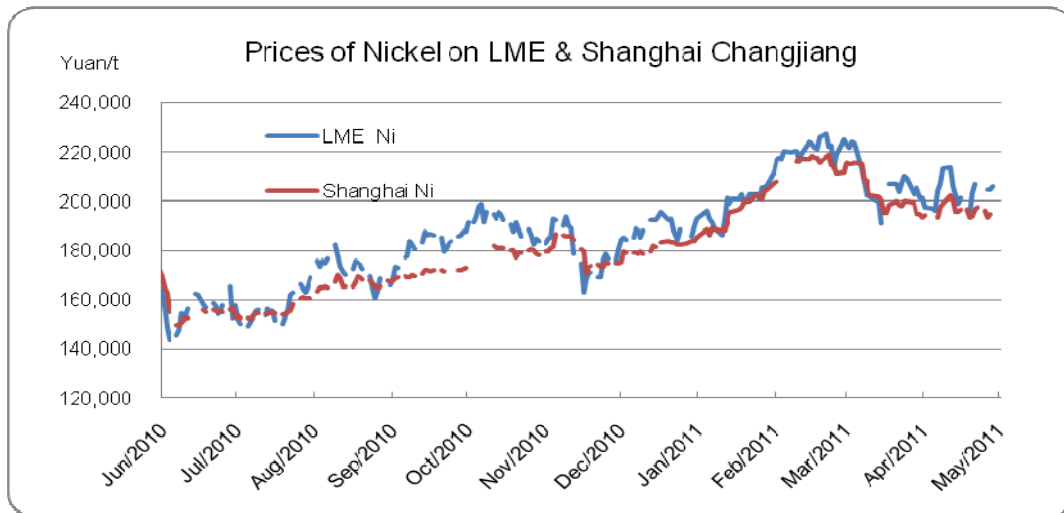
## Chinese Nickel Market

### Nickel price stronger at LME than China market

LME nickel price has been higher than Chinese domestic price since 2010. The economy has been recovering in Europe and America. On the other hand, Chinese domestic capital flow was tightening, while the stock pressure increased. The average LME nickel price was USD 26,900/t in Q1 2011, up by 34% y/y, while the domestic nickel price was RMB 204,000yuan/t, up by 35% y/y. The price gap between LME and China market was RMB 20,000 yuan/t.



**Chart 2 Nickel Price at LME & Shanghai Changjiang Market in 2010-2011**



Source: Antaike

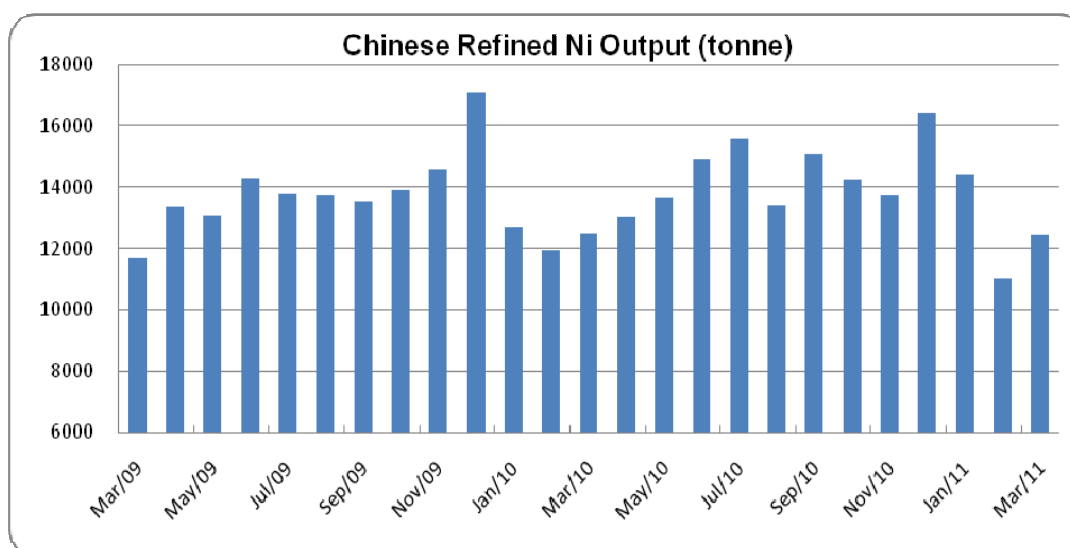
## Chinese Nickel Production

### Chinese primary nickel output grows quickly

China produced 14.8kt of nickel in concentrate in Jan-Feb 2011, up by 3.15% y/y. The refined nickel output was 25.4kt during the same period, up by 3.21% y/y. Customs data shows China imported 3.52mlnt of nickel ore in Jan-Feb, 2011, up by 68.7% y/y. 2.68mlnt of ore was imported from Indonesia, up by 57.9% y/y, and 749kt of ore was imported from Philippines, up by 157% y/y.

Japanese earthquake forced the ferronickel plant to shut down in Hachinoe. The plant could produce 44kt of ferronickel each year. It cannot resume production in a short term. The plant imported 2.72mlnt of nickel ore in 2010. This amount of ore import is estimated to be transported to China instead, increasing Chinese high grade ore supply.

**Chart 3 Chinese Refined Ni Output in 2009-2011 Unit: t**

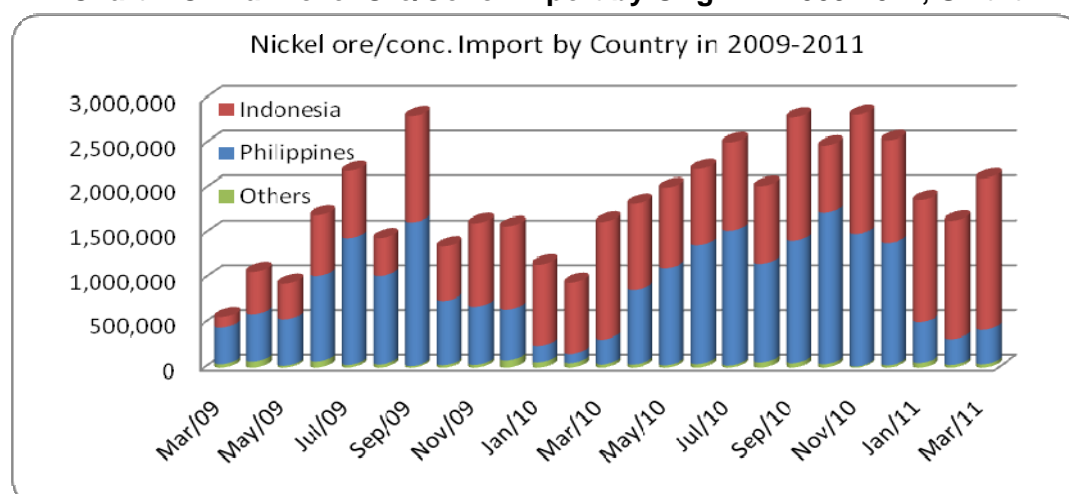


Source: CNIA

**Chinese apparent consumption of nickel falls back**

China imported 26.7kt of nickel in Jan-Feb 2011, down by 5.1% y/y. Ferronickel import was 26kt during the same period, up by 56% y/y. Nickel export was 3,567t, down by 51% y/y. Both import and export dropped in Q1 2011 because international nickel market was stronger than domestic market. Chinese apparent consumption of nickel is estimated to be 146kt in Q1 2011, and 613kt for the whole year of 2011.

**Chart 4 China Nickel Ore/Conc. Import by Origin in 2009-2011, Unit: t**



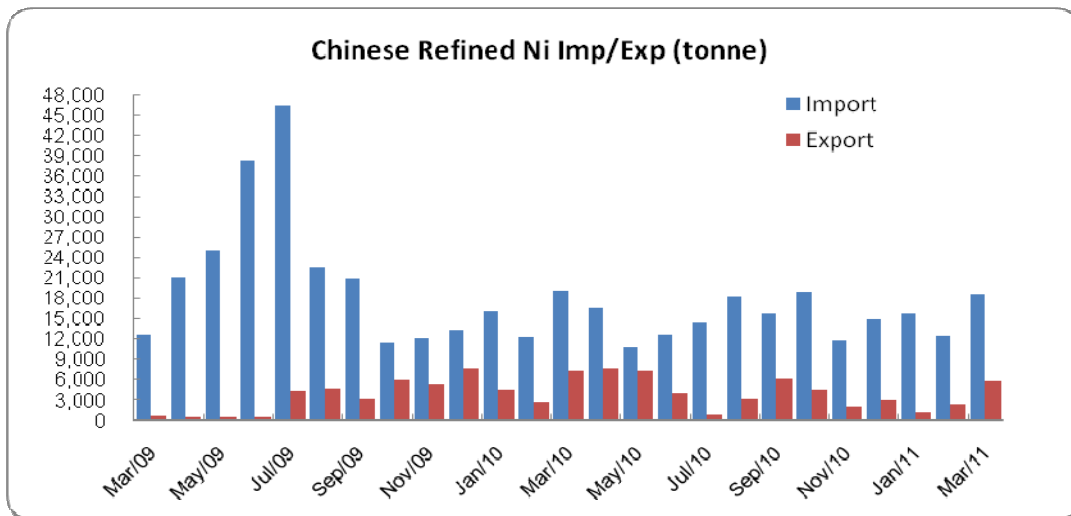
Source: Customs

**Table 5 Chinese Apparent Consumption of Nickel in 2010-2011**  
Unit: tonne

	2010	2011			
		Jan-Feb	Mar	Q1	2011
Output of Electrolytic Ni	157,538	27,743	13,220	40,963	178,000
Output of Jilin Ni Salts	7,800	1,500	750	2,250	9,000
Output of NPI	160,800	37,000	13,000	50,000	200,000
Output of Primary Nickel	326,138	66,243	26,970	93,213	387,000
Imports	252,205	38,718.26	19,000	57,718	248,000
Apparent Supply	578,343	104,961.3	45,970	150,931	635,000
Export	52,000	3,567	1,500	5,067	22,000
Apparent Consumption	526,343	101,394.3	44,470	145,864	613,000

Source: Antaike

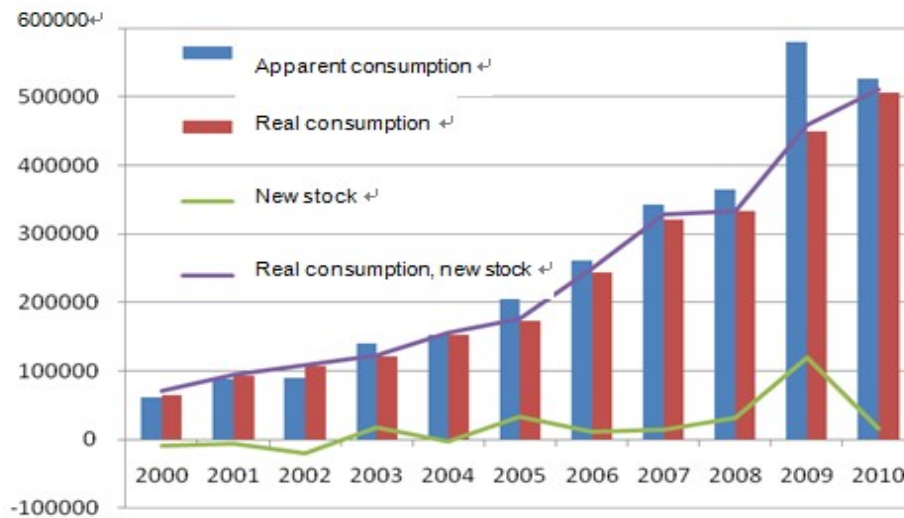
**Chart 5 Chinese Refined Nickel Import and Export in 2009-2011 unit:t**



Source: Customs

Chinese domestic nickel stock has been a focus since 2009. Antaike found that the newly added nickel stock was not much each year, even posed negative growth. The newly added nickel stock was 120kt in 2009. It was 6kt in 2010, down tremendously compared with 2009. However, the accumulated nickel stock was nearly 200kt in 2010. It will form strong pressure to nickel price.

**Chart 6 Newly Added Nickel Stock at Chinese Market in 2000-2011**



## Market outlook

The global economy has been recovering after two years' recession. But some sudden events will no doubt block the world recovery. In Q1 2011, the unquiet political situation of Middle East and North Africa led the sharply rise of oil price and nonferrous metals price also followed the trend. Japanese government rescued the market when earthquake took place. The central bank of Japan injected JPY 41 trillion, equal to USD 50 billion. However, the expectation of inflation also rose. High price of oil will increase operating cost of the real economy.

Most institutes are not looking good to the 2011 nickel market due to the over surplus market expectation. The nickel price is seen to touch ceiling in 2011. Chinese strong demand in 2010 promoted the nickel price up by 38%. But commissioning of large scale NPI projects in the near term and production recovery of large international producers will drag the market into surplus. Meanwhile, the world stainless steel production is forecasted to slow down.

Michael Widmer from Bank of America Merrill Lynch predicted the average price of nickel in 2011 will drop to USD 20,875/t, down by 1.5% y/y. Shairaz Ahmed, chief analyst from GFMS, expressed the same viewpoint. He forecasted the price would drop since H2 2011 and the trend would continue in 2012. Ahmed thinks the average of nickel price will be USD 24,000/t in 2011 and USD 19,500/t in 2012 due to over surplus supply. China will continue to push up the nickel demand. Alan Heap from

Citibank expressed the global nickel market should watch closely at Goro nickel project in New Caledonia. New Caledonia owns nearly 1/4 nickel reserve of the world. The Goro nickel project with USD 4.5bln investment is designed to produce 60kt of nickel per year

Antaika thinks the world nickel output will reach 1.58mlnt in 2011, while the consumption is 1.56mlnt. Chinese domestic refined nickel output will be 387kt in 2011. The nickel consumption is expected to reach 600kt. It is estimated average LME nickel price is USD 24,000/t in 2011.

## Data

### Chinese Quarterly Nickel-in-Concentrate Output (tonne)

	2010					2011				
	Q1	Q2	Q3	Q4	Year	Q1	Q2	Q3	Q4	Year
Ni in conc.	21,33	20,833	16,815	19,981	79,577	22,138				

Source: CNIA, Antaika

### Production of Nickel-in-concentrate in China by Region (tonne)

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	Q1 2011
<b>Chinese Total</b>	<b>21,330</b>	<b>20,833</b>	<b>16,815</b>	<b>19,981</b>	<b>22,138</b>
Gansu	20,137	18,348	14,386	17,456	19,687
Jilin	476	413	792	873	606
Xinjiang	358	1,692	1,312	1,270	1,535
Yunnan	359	380	325	382	310

Source: CNIA

### Production of Electrolytic Nickel in China by Region (tonne)

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	2010	Q1 2011
<b>Chinese Total</b>	<b>37,132</b>	<b>41,616</b>	<b>44,058</b>	<b>44,416</b>	<b>171,338</b>	<b>37,910</b>
Zhejiang	0	0	0	0	-	-
Jilin	309	-	-	0	<b>3,945</b>	-
Jiangxi	1,595	2,495	5,143	6,013	<b>15,246</b>	1,960
Guangxi	1,695	3,186	3,265	3,666	<b>12,830</b>	2,291
Chongqing	0	282	304	10	<b>683</b>	-

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	2010	Q1 2011
Sichuan	0	-	-	385	<b>630</b>	337
Yunnan	462	713	747	342	<b>2,263</b>	332
Gansu	31,710	32,586	32,711	32,797	<b>129,804</b>	32,414
Xinjiang	1,361	1,684	1,688	1,203	<b>5,936</b>	576

Source: CNIA

### Chinese Import of Nickel Ores and Concentrates (tonne)

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	2010	Q1 2011
Import of nickel ores and concentrates	3,736,909	6,067,064	7,347,749	7,855,717	<b>25,007,441</b>	5,636,530

Source: China Customs

### Chinese Import of Nickel Mattes (tonne)

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	2010	Q1 2011
Import of nickel mattes	28,418	27,104	28,699	29,168	<b>113,390</b>	22,937

Source: China Customs

### Chinese Import and Export of Refined Nickel (tonne)

	Q1 2010	Q2 2010	Q3 2010	Q4 2010	2010	Q1 2011
Import	47,544	40,123	48,243	45,603	<b>181,514</b>	46,743
Export	14,596	18,994	10,086	9,492	<b>53,170</b>	9,257

Source: China Customs

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