

2008 Annual Report on Magnesium market

1. Property, Distribution and Application of Magnesium

1.1 Property

Magnesium is a ductile, silver-white, chemically active metal. It is one of the most abundant minerals in the earth. Its density is only two thirds of aluminum's, two fifth of titanium's and one fourth of steel's. Magnesium alloy weighs 36% less than aluminum alloy, 73% less than zinc alloy and 77% less than steel. With a density of only 1.738 grams per cubic centimeter, it is the lightest structural metal known. It lacks ductility when worked at lower temperatures. In addition, in its pure form, it lacks sufficient strength for most structural applications. However, the addition of alloying elements improves these properties to such an extent that both cast and wrought magnesium alloys are widely used, particularly where light weight and high strength are important.

1.1 Distribution

The fourth most abundant metal element in nature, magnesium constitutes 2.1-2.7 percent of the earth's crust. It is found in abundance in the minerals carnallite, brucite, magnesite and dolomite. It is also found in asbestos, meerschaum, serpentine, and talc. Magnesium chloride is found in seawater, brines, and salt wells. China is one of the countries that are abundant in magnesium, taking up 22.5% of the magnesium reserves in the world. Dashiqiao, Liaoning abounds in magnesite. Salt lakes mainly locate in Chaidamu Basin in Qinghai. Dolomite, the raw material for magnesium metal by Pidgeon Process is widely distributed in China's Shanxi, Ningxia, Henan, Jilin and Qinghai, etc.

China produced of 630,700 tons of primary magnesium in 2008, taking up for over 85% of the world total production. Other major primary magnesium producers outside China are: Solikamsk Magnesium Works and Avisma Magnesium-Titanium Works in Russia, Isreals's Dead Sea Magnesium, US Magnesium, Rima Magnesium, and the Malaysia's first magnesium plant in Malaysia invested by Ho Wah Genting Bhd (HWGB) which was started early 2008.

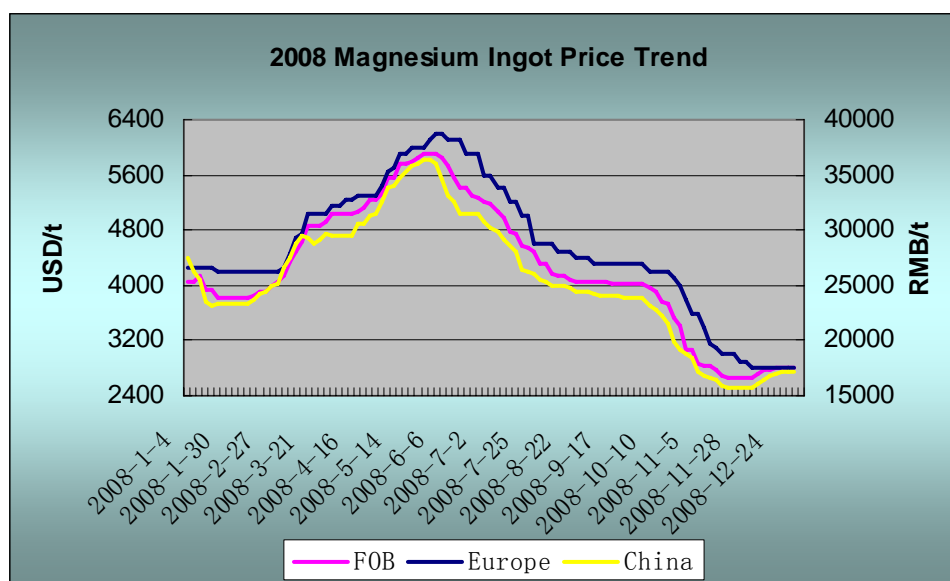
1.3 Application

By far the greatest uses of magnesium are as an alloying element in aluminum, as

desulfurizer in steel-making, and in die-casting sector. As an important alloying agent, magnesium is widely used in adding to strength of aluminum, copper, zinc, etc. With the titanium industry expanding in recent years, magnesium, as a reductive agent in titanium production is in increasing demand.

The mechanical properties of magnesium improve when it is alloyed with small amounts of other metals. Magnesium alloy is considered to be the green structural material in 21st century thanks to its lightness and high performance in damping, molding, electromagnetic radiation shielding and easily-recycling. It is widely used in automotive and autocyte, 3C products, manual and electric tools, aerospace, national defense and military industries. With the advancing of magnesium alloy production and producing technology, the domestic demand for magnesium has been increasing in recent years. For example, the demand for magnesium alloy profile has been strengthening from bicycle frame, wheelchair, medical instrument, rehabilitation and Fitness equipment.

2. Market Review



The magnesium market slowed down at the end of 2007 after keeping strong through out the year. The imposition of 10% export duty on magnesium, effective on 1st January, 2008 and the year-end holidays were attributable to the market turnaround. The mainstream price of magnesium ingot in Chinese domestic market fell steeply to 22,500-23,500/t in late January when China was hit heavily by the snowstorm from RMB29,000-29,500/t ex works on the eve of the Christmas in 2007. Owing to the

transportation chaos resulted from the severe weather, magnesium smelters were unable to replenish raw materials. The magnesium price, therefore, rebounded in some regions of China, and the price increase soon spread to other production bases. As consumers who did not supplement stocks before the Spring Festival were unable to obtain materials due to the unexpected disaster, the supply of magnesium turned tight after the Chinese New Year, which caused the price to rise from RMB23,000-24,000/t ex works to 29,500-30,000/t ex works at the end of March. The export market came into a standstill after the tax regulation. Despite the efforts that producers made to raise the price, the export price declined from USD4,000-4,100/t FOB China seen at the beginning of 2008 to USD3,750-3,850/t FOB in late January. In accord with the price increase in the domestic market, the export market warmed up gradually after the Spring Festival with prices advancing to USD5,000/t FOB China when March closed.

Prompted by producers' high expectations, the magnesium market in the second quarter kept in an upward trend. The prevailing price hiked to RMB36,500-37,000/t ex works in the middle of May while some smelters claimed deals as high as RMB37,000-38,000/t ex works. In the meanwhile, the export price also skyrocketed to USD5,900-6,000/t FOB China with some suppliers inking contracts at USD6,200-6,300/t FOB China.

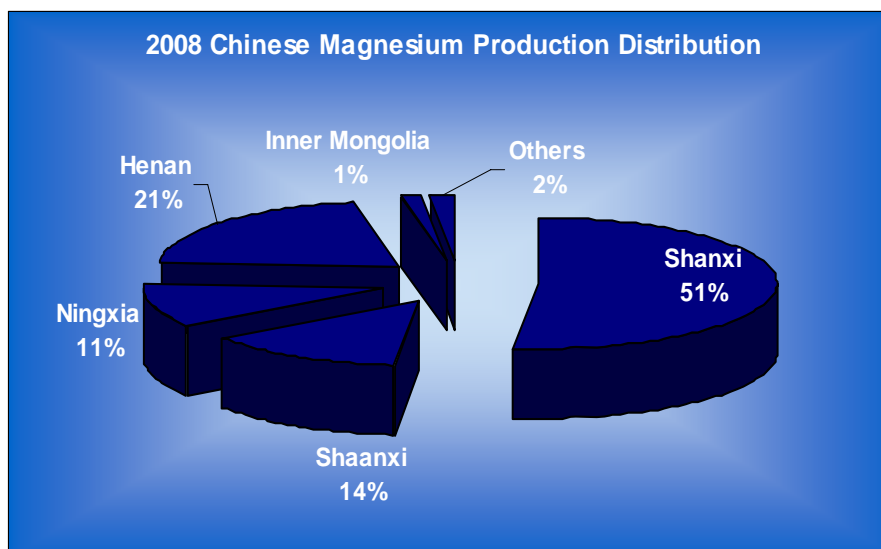
However, concerns for a sudden price drop grew in line with the price increasing. Participants worried that the crackdown on enterprises with high pollution before the Olympic Games, the realization of new capacities, the over-active purchases made by foreign buyers before the Games would have some negative impact on the market in the second half of the year. Although most consumers and traders were still active in the market in the first half of the second quarter, most of them were trying to fulfill the signed contracts. Some end users had already reduced the consumption of magnesium ingot and switched to substitute materials, and traders were reluctant to accept new orders. The market showed some signs of dropping in late May, and the price finally started to go down at the end of May. In the following two weeks, the magnesium price plummeted from RMB31,000-32,000/t ex works from RMB36,500-37,000/t ex works, and some small-sized smelters began to sell off at below RMB30,000/t due to difficulty in capital turnover. Meanwhile, the export price slumped to USD5,500-5,600/t FOB China. However, in order to enhance consumers confidence, some large smelters still put their offers at RMB33,000/t ex works or higher levels. Thanks to their efforts, the magnesium price stopped rising and even bounced up slightly in some producing areas. The export market, however, kept weak at the same time. On account of the increasing stockpiles in the spot market and the consumers' involvement, further price decrease was expected.

The downward movement dominated the magnesium market almost through out the second half of 2008. The financial tsunami triggered by the bankruptcy of Lehman Brothers Holdings in September hit heavily the financial sectors of many countries, and then the influence spread rapidly to other industries, among which the automotive and steel sectors were the first to be struck. The steel and automobile market recession dealt the magnesium industry a heavy blow and fuelled the price decrease. During less than six months starting mid-June to early December, magnesium price dropped by 50% from RMB31,000-32,000/t ex works to RMB15,000-16,000/t ex works which was seen at the start of 2007.

3. Supply & Demand

3.1 Production Status

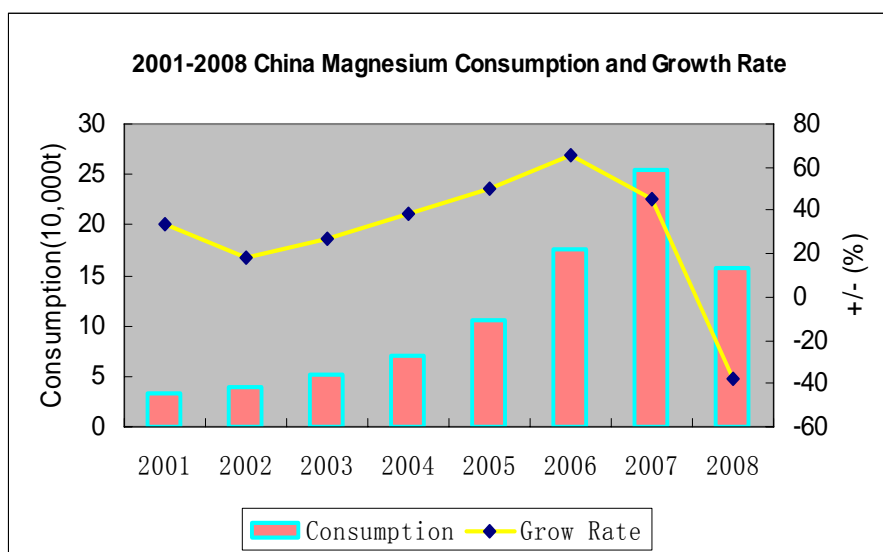
According to statistics issued by China Non-ferrous Metals Industry Association, China produced 630,700 tons of primary magnesium in total in 2008, increased slightly by 0.54% year on year. The production increase which has been lasted from 2003 to 2007 slows down this year. The output in Shanxi, Shaanxi and Ningxia is 325,900 tons, 86,200 tons and 68,200 tons respectively.



3.2 Consumption Status

Chinese domestic consumption of primary magnesium totaled approximately 160,000

tons in 2008, around 38% down compared to the previous year. It is the first time the consumption decreases year on year since 2003.



3.3 Export Status

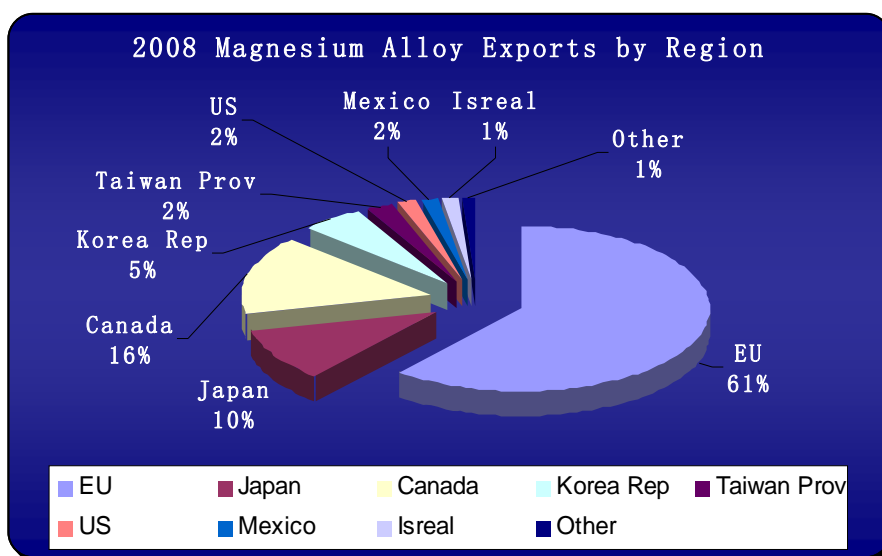
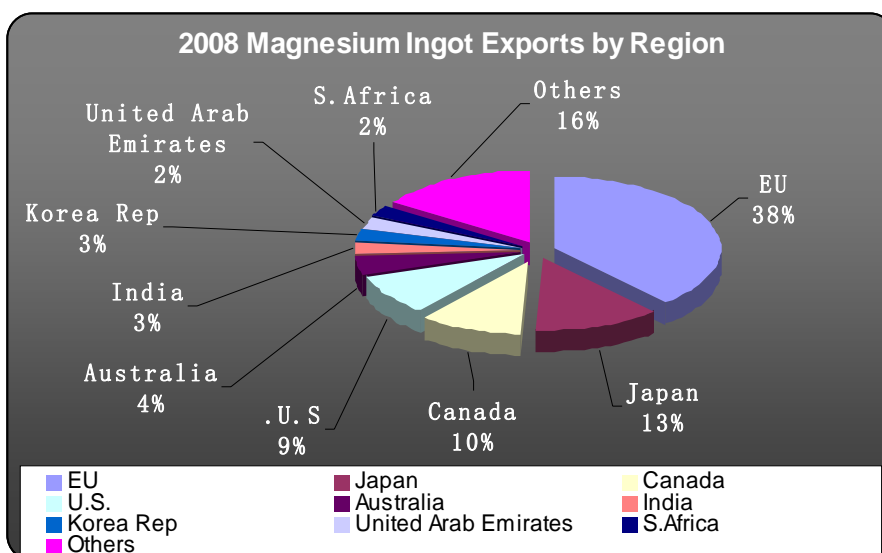
Magnesium products Exports in 2008								
Item Region	Mg ingot		Mg Alloy		Mg Powder and Granule		Mg Scraps	
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
Bahrian	4,590,338	17,643,127	90,274	306,932	—	—	—	—
Bangladesh	13,750	40,141	7,000	36,600	—	—	—	—
Korea,DPR	6,590	30,540	—	—	—	—	—	—
Hong Kong	22,885	94,615	116,816	564,147	—	—	—	—
India	5,432,071	23,457,068	121,000	602,990	2,489,000	11,090,249	—	—
Indonesia	916,215	3,714,787	32,175	129,745	35,160	170,346	—	—
Iran	—	—	1,288,191	5,808,792	5,000	32,470	—	—
Israel	1,431,393	6,081,273	75,000	349,449	510	5,770	—	—
Japan	24,814,399	100,839,250	10,353,734	49,870,090	8,747,474	34,426,191	—	—
Kuwait	19,954	65,848	—	—	—	—	—	—
Malaysia	459,867	1,748,695	40,386	131,420	260,100	1,120,321	—	—
Oman	24,982	149,392	—	—	—	—	—	—
Pakistan	67,627	269,680	—	—	9,982	91,873	—	—
Palestine	22,823	99,965	—	—	—	—	—	—
Saudi Arabia	218,341	949,880	1,000	4,300	—	—	—	—
Singapore	—	—	16,756	68,348	76,000	330,609	—	—
Korea Rep	5,290,512	20,548,868	5,145,294	23,854,433	1,921,265	8,609,926	—	—
Thailand	908,690	3,771,188	134,203	697,120	7,100	36,460	—	—

Turkey	1,413,966	5,816,901	44,000	218,031	6,319,651	28,150,650	—	—
United Arab Emirates	4,752,380	19,102,120	103,554	352,084	—	—	—	—
Vietnam	63,056	209,114	4,524	20,574	6,120	27,223	—	—
Taiwan prov	2,555,204	11,029,417	2,344,067	10,013,134	2,018,268	8,367,880	—	—
Kyrgyzstan	10,000	25,000	—	—	—	—	—	—
Egypt	2,247,977	9,608,282	—	—	—	—	—	—
Morocco	44,000	178,080	—	—	—	—	—	—
Nigeria	26,526	113,886	—	—	—	—	—	—
S.Africa	4,702,271	17,551,851	—	—	2,040,185	8,202,555	—	—
Belgium	5,257,834	19,778,483	941,256	3,434,943	98,700	455,097	—	—
United Kingdom	1,790,016	7,505,111	2,474,816	9,189,691	3,237,762	14,176,215	—	—
Germany,FR	3,138,925	12,693,087	2,314,985	10,067,271	5,312,963	23,124,469	84,000	406,620
France	2,447,625	10,241,206	3,381,145	15,928,161	672,000	2,928,428	—	—
Italy	4,798,951	18,680,190	4,958,328	22,657,133	442,000	1,991,435	—	—
Netherlands	52,060,152	199,067,809	38,802,074	183,538,870	14,649,400	62,337,189	180,000	647,100
Greece	1,387,598	5,032,652	43,997	137,159	—	—	—	—
Spain	354,892	1,509,451	3,932,867	18,188,248	590,003	2,404,682	—	—
Austria	210,636	700,422	151,594	505,859	190,900	956,466	—	—
Bulgaria	249,076	950,136	737,700	3,006,938	—	—	—	—
Iceland	1,395,163	6,238,914	—	—	—	—	—	—
Norway	7,204,960	30,400,649	—	—	—	—	—	—
Poland	422,000	1,826,450	168,802	742,575	—	—	—	—
Romania	687,461	2,736,128	2,026,343	9,844,728	—	—	—	—
Estonia	923,750	4,053,991	—	—	—	—	—	—
Sweden	—	—	654,250	3,327,277	—	—	—	—
Switzerland	—	—	—	—	2,242	15,871	—	—
Russia	842,004	3,430,753	39,487	153,999	2,352,000	10,862,265	—	—
Ukraine	66,000	316,800	82,000	372,697	702,300	3,137,069	—	—
Slovenia	1,887,065	6,933,185	1,151,582	5,675,517	2,880,000	11,841,933	—	—
Croatia	294,654	1,077,949	—	—	—	—	—	—
Montenegro	25,000	69,050	—	—	—	—	—	—
Argentina	2,104,224	8,248,263	48,000	192,377	724,500	2,863,898	—	—
Brazil	816,002	3,061,468	—	—	144,000	750,331	—	—
Chile	3,000	17,050	—	—	340,000	1,483,100	—	—
Colombia	119,640	422,303	—	—	—	—	—	—
Ecuador	20,000	90,800	—	—	—	—	—	—
Mexico	830,103	3,764,426	1,556,399	7,255,161	893,300	3,836,827	—	—
Peru	30,092	135,718	—	—	—	—	—	—
Venezuela	888,583	3,543,339	—	—	—	—	—	—

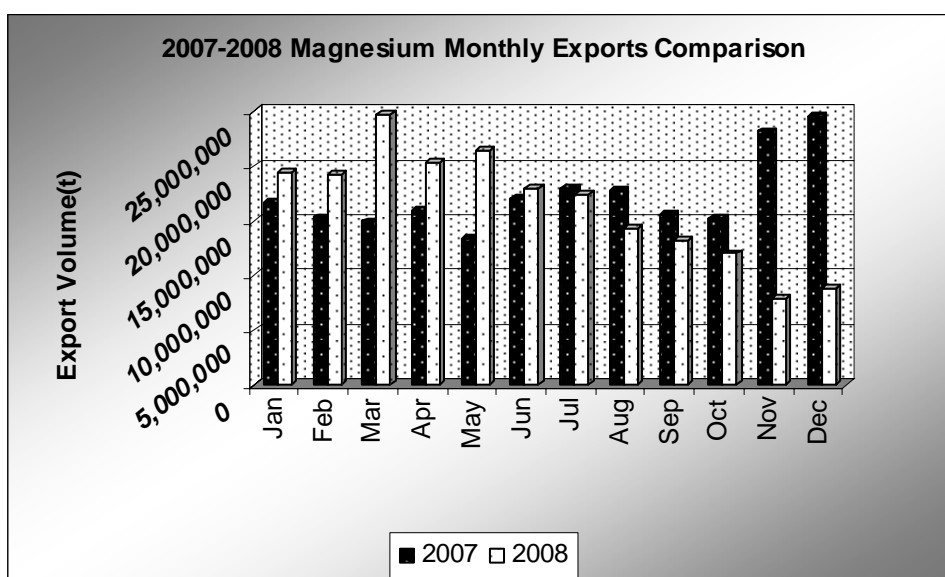
Canada	19,224,062	72,031,753	15,635,655	74,309,139	8,168,200	32,448,650	—	—
United States	18,122,214	71,806,887	1,640,984	7,917,311	20,174,985	82,073,815	11,063	36,876
Australia	8,301,045	31,059,354	152,897	798,298	416,050	1,784,077	—	—
New Zealand	1,100,263	4,013,550	1,000	4,600	—	—	—	—
Total	197,058,807	774,576,295	100,814,135	470,276,141	85,927,120	360,134,340	275,063	1,090,596

China exported a total of 384,075 tons of magnesium products, 2.84% down compared to last year. The export value summed to USD1.61 billion. The export quantities for magnesium ingot, magnesium alloy, magnesium scraps and magnesium powder are respectively 197,059 tons, 100,814 tons, 275 tons and 85,927 tons.

The EU, Canada, U.S., Japan, South Korea and India are still the main export counties and area for magnesium ingot and export.



MAGNESIUM PRODUCTS EXPORT STRUCTURE 2001-2008								UNIT(10,000T)
Item	2001	2002	2003	2004	2005	2006	2007	2008
Mg Ingot	9.22	11.54	16.20	22.83	18.19	17.32	20.76	19.71
Mg Alloy	2.51	4.27	7.04	8.05	9.29	8.57	10.66	10.08
Mg Scraps	0.51	0.31	0.24	0.34	0.33	0.19	0.11	0.03
Mg Powder, Granule and Chips	4.45	4.32	6.00	6.94	7.14	7.98	7.99	8.59
Total	16.70	20.44	29.48	38.16	34.95	34.05	39.52	38.41



4. Factors Influencing Prices

4.1 Demand Reduction

The magnesium price kept climbing up consistently during almost one and a half year starting the end of 2006 amid strong demand. However, the price increase led to higher production cost for magnesium alloy, magnesium powder, titanium sponge and other materials using magnesium as raw material. The magnesium downstream industry endured rising high pressure on in the increase in production cost. Many magnesium powder, magnesium alloy and titanium sponge producers were forced to limit or even halt

production, or use aluminum instead of magnesium for lower cost. Some enterprises who initially intended to invest on magnesium market quit. Furthermore, affected by the financial crisis, domestic steel makers reduced production in succession, resulting in a decrease in magnesium powder demand. More titanium smelters reduced output or closed down due to the worsening market, and therefore the demand for magnesium ingot declined accordingly. Going with the weakening demand, the stockpile of magnesium ingot increased in the spot market, resulting in a switch from seller's market to buyer's market.

4.2 Capacity Expansion

Driven by high profits, many magnesium smelters expanded their capacities. For example, Tongxiang, Yinguang, Hongfu, Hui-Ye, Huayuan, ect, who were among the top ten large magnesium producers in 2007, and smelters from Fugu and Shenmu of Shaanxi Province all carried out capacity expansion. In Shaanxi and Inner Mongolia, some smelters with a capacity of over 100,000tpy were under construction, some of which were planned to come on stream by the end of 2008. Additionally, some magnesium consumers, in order to guarantee to raw material supply, also started to set up their own magnesium ingot smelters.

Some of the expansion projects were put into production in the third quarter. However, many newly invested smelters failed to start production due to the sluggish market. Some new smelters hardly faced the danger of closing when they commenced production because of high operating cost. Furthermore, some new and expansion projects which were still under construction were out on a limb in light of the continued price decrease of magnesium.

4.2 Supply and Cost of Raw Materials

The fluctuation on magnesium price is much related to the price change of ferrosilicon, dolomite as well as coal. During the first six months of this year, magnesium smelters were active in purchasing raw materials stimulated by the accelerating price of magnesium metal, and the strong demand prompted raw materials suppliers to keep raising offers. When the magnesium ingot price reached the record high in May, the price of ferrosilicon 75% rose to as high as RMB11,000/t delivered. At the same time, the price of dolomite and coal also saw a sharp increase. However, once the magnesium ingot price began falling, the price of ferrosilicon and dolomite started to go down, and the

demand also weakened greatly in the second half of this year. During the period of Olympics, the thermal coal was in tight supply all over the country and ensured the coal price to stay at a high level. In the third quarter, many magnesium smelters still held raw materials purchased at high price levels, and thus kept production on high costs. High production cost coupled with fast decreasing price imposed higher pressure on magnesium smelters, some of whom reported the loss of business in August. The fact that the selling price was lower than the production cost had forced more smelters to reduce output or suspend production since August.

4.3 Policies

The magnesium export market fell stagnant on the announcement that China would impose 10% export tax on magnesium ingot, magnesium alloy and magnesium scraps, effective on 1st January, 2008. With export business in a standstill, the supply in domestic market kept increasing, which triggered the price decrease early this year.

Influenced by the price increase of crude oil in international market, National Development and Reform Commission (NDRC) announced on 19th June that the government would increase the price of gasoline and diesel oil on 20th June. Additionally, in order to ease the traffic pressure in Beijing before and during the Olympics, motor vehicles driving into Beijing were requested to detour according to the plan made by the Ministry of Public Security, bringing higher cost on transportation.

4.4 The Olympic Games

The Beijing 2008 Olympic Games brought about more uncertainties on magnesium market. Before the Games, local governments took more stringent measures to crack down environment unfriendly enterprises and shut down many smelters that did not comply with the environmental standard. In order to welcome the Olympic Torch Relay, high-pollution enterprises along the relay route were asked to close, but it is not affect the market much. Electricity was transmitted to Beijing from the nearby Hebei, Shanxi, Inner Mongolia in order to guarantee the power supply during the Games. As a result, many high energy consuming enterprises including some magnesium ingot smelters suspended production due to power shortage. The powder brownout not only led to an output decrease but also made the production cost increase. The tight power supply in many cities of Shanxi covered by the North China Power Grid also caused tightness in railway transportation. Additionally, many magnesium powder producers also suspended

production or cut down output as magnesium powder, considered to be the inflammable and explosive dangerous goods, was being restricted in transportations for safety concerns before and during the Olympic Games.

Other than the influence on production and transportation that the Olympic Games caused, the psychological factors related to the Games also had impact on the market. Many buyers in the international market booked more than enough magnesium ingot in the first five months, fearing the supply might be tight in summer, but the little buying activity has been seen in the market since June. The significant price decrease at the end of the second quarter was obviously connected with the decreasing demand in the international market.

4.5 Others

Chinese exporters were depressed by the continuous appreciation of renminbi in the first three quarters. Exporters suffered losses on the frequent exchange rate fluctuation. Many suppliers suspended export business due to both concerns for currency appreciation as well as low demand from abroad.

The price floor policy adopted by the customs restrained the exports of magnesium metal. As the limit price set by the customs was much higher than the market price and thus exporters had to pay export tax based on the limit price, many exporters ceased the export business.

There is no doubt that the global financial crisis makes the magnesium market worse. Steel makes all over the world reduced output one after another. Automotive industry in western world is suffering. The demand for electric tools and electronic products has dropped dramatically. All these factors are having negative influence on magnesium market.

5. Market Outlook

As the financial crisis continues to plague the steel, automotive, energy and other industries, the magnesium market is not expected to warm up in the first half of 2009. As a majority of smelters halted production in the fourth quarter of 2008 as the price dropped below the production cost, the supply may decrease significantly. Therefore, a short-lived price rebound cannot be ruled out. However, the low demand is likely to restrain the

markup.

Although many smelters plan to resume production after the Spring Festival, few of them are expected to restart in February considering that the current price is almost on a par with the production cost. A few smelters in Shanxi's Taiyuan and Shaanxi's Fugu and Shenmu stopped production not only because of the low price but also lack of coal gas. Therefore, whether those smelters can resume production or not depends on the coal and coke market situation. However, smelters, including some newly invested ones and the expansion project will commence operation once they think the time is ripe. Therefore, it is still to be seen that whether the price of RMB16,500-17,000/t ex works is the bottom or not. Danger that the magnesium price may drop further in 2009 still exists.

Additionally, many foreign buyers no longer sign long-term purchase contracts due to the great price ups and downs in 2008. Therefore, the market is bound to be more changeable with fewer long-term contracts in the market.

China issued a series of policies to stimulate domestic consumption and export business in third and fourth quarter of this year, and the policies have taken effect on spurring the economy. Some steel products and nonferrous metals market warmed up to some extent, helping regain the consumer confidence. However, considering adequately the sequent influence caused by the financial crisis, the magnesium price may not go to either side far away from the production cost.