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Iron Ore Market Research in the CIS

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Internet: www.infomine.ru
e-mail: info@infomine.ru

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Summary

The present report is dedicated to research of the current state of the iron ores and raw material market in the CIS, to forecasts of the iron ore enterprises of Russia development for the period till 2017.

The report consists of 7 parts, contains 324 pages, including 75 figures, 129 tables and the appendix. The given work is armchair research. As sources of the information the data Rosstat, the State statistics committee of the CIS countries were used according, Federal customs service of the Russian Federation, official statistical editions of Ukraine and Kazakhstan, information of Rudprom and Ukrrudprom, branch and regional press, annual and quarterly reports of securities emitters, and also Internets - sites of enterprises - manufacturers.

The first chapter of the report contains the analysis of IORM (iron-ores raw materials) position in world market.

The second chapter of the report is dedicated to the analysis of the iron ore the industry of the CIS state. Information on volumes of iron-ore extraction in the separate countries is submitted as well as manufacture of commodity iron ore, concentrate and iron-ore pellets.

The third chapter of the report is dedicated to the analysis of iron-ore raw-material base of Russia. The information on of iron ore reserves distribution by regions, and also on the largest deposits is submitted. Iron ore extraction in Russia, including regions producing commodity iron ore in the country (by regions and GOKs) as well and IORM consumption is analyzed. The analysis of Russia foreign trade with iron-ore raw material is submitted, the basic commodity markets are shown.

The significant attention in this chapter is paid to the analysis of the leading iron-ore enterprises of Russia: volumes of ore extraction and manufacture of commodity iron ore, pellets, the basic commodity markets, prospects of development, etc.

The fourth chapter of the report analyses the situation in the iron-ore industries of Ukraine: a raw-material base, extraction of iron ore and manufacture of commodity ore and pellets, consumption IORM, the basic commodity markets, work of some iron-ore enterprises.

In the fifth chapter the situation in the iron-ore industries of Kazakhstan is analyzed. In the chapter the ore base, extraction of iron ore in the country and manufacture of commodity output are studied, activity of basic IORM manufacturers, directions of export deliveries are analyzed, etc.

In the sixth chapter of the report the forecast of IORM demand in Russia for the period till 2017 and the iron-ore enterprises developments of Russia are presented.

The final chapter presents the sales estimation for iron ore produced at Kodinskaya group deposits both for internal and foreign markets, for medium-term and long-term periods.

Introduction

Iron ore is raw material for manufacture of ferrous metals. Development the iron-ore industries in many respects determines the tendencies in the world market of ferrous metals. It gets special importance in the situation of insufficient IORM offer as it takes place in the world market now. The rise in IORM prices in the three latest years has essentially affected production costs of the leading metallurgical companies which are compelled to make significant efforts to maintenance the requirements in IORM.

The CIS metallurgical companies are in favourable position as compared to manufacturers of ferrous metals in many countries.

Russia, Ukraine and Kazakhstan have significant reserves of iron ore that allows them not only to provide for metallurgical complex of the countries IORM needs completely, but also to deliver significant volumes to export.

The iron-ore industry belongs to industry branches with high capital intensity. It is necessary to invest significant means not only into the development of available mining and concentrating capacities, to carry out reconnaissance of new opportunities for manufacture of commodity iron ore expansion (sinter-ore, piecewise ore, blast-furnace ore, open-hearth furnace, iron-ore concentrate), but also in manufacture iron-ore pellets, including those for production of metallized raw material and agglomerate.

In the CIS, basically it concerns Ukraine, the struggle for iron ore actives between large industrial - financial groups has been proceeding. In Russia the given process has been practically completed already after Joint-Stock company "MMK" managed to get the large iron ores deposit for development.

IORM market quickly changes. In conditions of the high IORM prices in the world, many companies invested significant means in expansion of iron ore extraction and after 2010 it is possible to expect change of the price situation in IORM market. In the CIS projects of iron ore on extraction, development and expansion of available capacities for pellets and metallized raw material manufacture have been announced. But the commodity IORM market is limited to the CIS states and the situation will hardly change in long-term prospect.

1. Brief review iron ore raw material state at the world market

Iron ore is one of the major kinds of mineral raw material. Its extraction volume (over 1, 5 billion t/year) it complies only with coal and oil.

Iron ores resources are known in more than 95 countries of the world. By the beginning of 2006 the sum of global (looked-ahead and prospected) resources, by U.S. Geological Survey estimations, exceeded 800 billion t (230 billion t in terms of pure iron). Thus all iron ore deposits basically are concentrated in the several countries. Their big part is in Russia, the USA, Brazil, Australia, China, Canada, Kazakhstan, Ukraine, India, and Sweden. Share of these ten countries is 83, 3 % of the world prospected resources.

The total reserves of iron ores in the world were estimated to be 371, 5 billion t by the beginning of 2006. Thus the basic reserves of ore are concentrated in Brazil, Russia, and China, in Ukraine, in Australia and in Kazakhstan. The share of these countries is over 78 % of the total world reserves of iron ores. The data on ores reserves constantly change in connection with the fact that prospecting works are being actively carried out, especially actively in China, India, Brazil and Australia.

By the beginning of 2006 the **proven reserves** made up 160 billion t. Their big part also falls on Ukraine, Russia, Brazil, Australia and Kazakhstan - 77 % of the world **proven reserves**.

There is information on revision of iron ores reserves from a number of countries, including China.

Manufacture of iron ores. Lately the largest manufacturers of commodity iron ores were China, Brazil, Australia, Russia, India, the USA, Ukraine, Canada, the republic of South Africa. The share of these countries in the world is 93 % of IORM manufacture. Manufacture of commodity iron ore raw material (IORM) in these countries almost exceeds 30 million t/year (Tab. 1). It should be mentioned that China presents the ores extraction data. Recalculation of these data in terms of commodity ore (in terms of average world-wide iron content) in the given work seems inexpedient.

IORM manufacture in the world increased by almost 700 million t. It is necessary to take into account, that the data on China shows iron ore extraction. According to Australian institute ABARE (which takes into account IORM manufacture in China in terms of terms of average world-wide iron content in commodity ore), world IORM production in 2006 had 12 % increased in comparison with 2005 and made up 1,47 billion t.

Table 1: Commodity iron ore world production in 1997-2006, million t

Country	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Total, all over the world	**1061**	**1034**	**1010**	**1077**	**1044**	**1095**	**1201**	**1362**	**1533**	**1765**
Including:										
Brazil	188,0	183,1	188,7	209,5	210,6	215,2	233,3	258,3	277,6	311,5
China*	267,0	246,9	237,2	224,0	217,0	231,4	261,1	335,5	420,5	588,2
Australia	160,6	159,4	152,4	171,8	180.7	187,2	212,5	234,2	261,3	276,8
the CIS	136,3	131,9	138,4	157,4	148,1	158,5	171,6	181,2	181,9	195,5
Including the Russian Federation	70,6	72,1	80,5	86,6	82,5	84,2	91,7	96,9	96,8	103,9
Ukraine	*53,0*	*50,8*	*48,3*	*55,9*	*51,2*	*58,9*	*62,4*	*65,5*	*68,6*	*73,1*
Kazakhstan	*12,7*	*9,0*	*9,6*	*14,9*	*14,3*	*15,4*	*17,3*	*18,7*	*16,5*	*18,6*
India	69,4	71,7	70,2	74,9	79,2	86,4	99,1	120,6	145,5	153,9
the USA	63,0	62,9	57,8	63,1	45,9	51,3	48,2	55,5	55,3	53,6
The Republic of South Africa	33,2	33,0	29,5	33,7	34,8	36,5	38,1	38,5	39,5	40,5
Canada	38,2	38,9	34,0	37,7	29,0	30,9	33,3	28,4	31,6	34,2
Venezuela	18,7	17,2	17,6	17,9	16,5	18,5	19,2	20,0	22,1	23,0
Sweden	21,9	20,9	18,9	20,6	19,5	20,3	21,5	22,3	23,3	23,3
Mauritania	11,7	11,4	10,4	11,5	10,3	9,4	10,1	10,7	10,7	11,5

*Iron ore mining

Sources: AME mineral Economics, UNCTAD, Tax Report

Manufacture of commodity iron ore is concentrated in three countries: Brazil, Australia and China now. In 2006 the share of these countries was almost 58 % of the total amount of commodity iron ore manufacture. At the same time there is a fast growth iron ore mining in China.

Only in 2006 iron ore crop in China increased almost by 168 million t and made up 588, 2 million t. Nevertheless, China which mines basically poor ore is compelled to import escalating volumes iron ore raw material. Now China is the leading IORM importer in the world. In 2006 China imported 326, 3 million t of IORM that made up more than 40% of the global IORM import.

In the first half of 2007 the leading mining companies of the world continued to increase IORM manufacture and deliveries.

In the latest years iron ore extraction and production of commodity IORM have been increased by practically all the leading countries. IORM manufacture in Australia and Brazil, where the leading mining companies invest significant funds in expansion of available and construction of new capacities, is being developed especially quickly.

The mining companies of Australia carry out programs of expansion of capacities. In particular, Rio Tinto plans to increase the mining capacities up to 220 million t/year, and BHP Billiton − up to 155 million t/year. That is, only capacities of these two companies to manufacture IORM can reach 375 million t/year. The companies basically deliver lumpy ore and iron ore fines to the world market.

By the results of 2006 **BHP Billiton** company increased manufacture and deliveries of iron ore raw material most due to the mining enterprises in *Western Australia*. IORM manufacture had 2% increased in comparison with 2005 and had made up

107, 5 million t, and deliveries by 2, 7 % up to 108, 7 million t. By the results of first quarter 2007 BHP Billiton has 2,2% increased manufacture of iron ore at its assets in comparison with the first quarter of 2006, up to 24,896 million t. However the volume of ore shipments by the results of the first quarter has a little decreased (0, 8 % down to 24, 29 million t) that was connected with adverse weather conditions.

The company constantly increases IORM extraction and shipment at the expense of projects for capacities expansion. By the end of 2007 the company plans to increase IORM manufacturing capacities in Western Australia up to 129 million t/year owing to realization of Rapid Growth Project 3 (RGP3), and by 2010 - up to 155 million t/year (project RGP4). Input of the project RGP3 is expected in October - December, 2007 (in April the project was 53% completed). Investments into RGP3 are estimated to be $1, 3 billion, RGP4 - $1, 85 billion.

Besides BHP Billiton owns 50% of shares in Brazilian company Samarco which carries out construction of the third pelletizing factory with the capacity of 7, 6 million t/year. The end of the pelletizing factory *in Brazil* will increase BHP Billiton capacities for pellets manufacture up to 21, 6 million t/year. In April the factory was 61% completed. Start-up is expected in January - June, 2008, investments are estimated to be $590 million (BHP Billiton share).

In Table 2 the data on the basic projects in the field of IORM extraction and manufacture which are carried out by BHP Billiton Company (Australia) is submitted.

Table 2: Projects implemented by the BHP Billiton Company, Australia

Project	BHP Billiton part in project, %	Start-up date	Production capacity, million t/year
West Australia			
RGP3	85,0	October-December 2007	20
RGP4	86,2	January-June 2010	26
Brazil			
Samarco, 3 balling enterprise	50,0	January-June 2008	7,6

Source: corporation data

Rio Tinto Company is one of the largest world manufacturers iron ore raw material. In 2006 it 7% increased IORM manufacture in comparison with the previous year, up to 132,8 million t (124,5 million t a year before). Growth of IORM manufacture by the company is connected with the increasing demand from the metallurgical enterprises that allowed to 9,5 % raise the price for lumpy ore and iron ore fines in 2007. The major part of iron ore actives of the company is located in Australia. Besides the company has assets in Brazil and Canada.

The basic iron ore assets of Rio Tinto Company:

- Hamersley Iron, Australia;
- Robe River, Australia;
- IOC, Canada;
- Corumba, Brazil.

Australian companies invest significant funds into the development of transport infrastructure (ports, railways). In particular, Rio Tinto has been implementing the project of mining capacities expansion of the enterprise Yandicoogina (Rio Tinto − 100 %) from 36 up to 52 million t/year (will be finished at the end of the third quarter of 2007); expansion of through capacity of Dampier port (completely belongs to Rio Tinto) from 116 up to 140 million t/year. The project was approved in 2005 and planned to have been finished at the end of 2007, etc.

The last project which was approved at the beginning of 2007 embodies expansion of through capacity of Cape Lambert port (share of Rio Tinto makes up 53 %) from 55 up to 80 million t/year. Implementation of the project which is expected to be completed at the end of 2008, will allow essential expanding of export opportunities of the mining enterprises of this company in Australia. Investments into the given project are estimated to be $860 million. The company's share in the project will amount to $456 million.

Significant funds are being invested into the development of iron ore extraction by the Brazilian **CVRD.** The company is the leading world IORM manufacturer. In 2006 the company more than 12, 8% increased IORM manufacture up to 271 million t.

CVRD plans to increase IORM manufacture up to 450 million t in 2011. It approximately 66% exceeds the level of the current manufacture. Now the company carries out 3 projects aimed to increase iron ore extraction, including expansion of mining in Carajás area up to 130 million t/year.

By 2007 the CVRD has increased its investment budget from $6,33 billion up to $7,35 billion. Under the new budget of capital investments, $5,356 billion will be invested into group development, and $4,904 billion will be spent on implementation of various projects. Investments into iron ore extraction and processing expansion are stipulated at the rate of $1,869 billion (it used to be $1,64 billion). In particular, the investment program of the company plans to expand the ore extraction capacities in Carajas up to 100 million t/year with possible further increase up to 130 million t/year.

The USA is a large manufacturer iron ore raw material in the world. The USA belongs to one of the few countries, where well-developed ferrous metallurgy (the country stands in the third place in the world by manufacture volumes after China and Japan) basically meets the IORM requirements with the help of its own manufacture. At the same time, volumes of commodity iron ore manufacture (pellets mostly) in the USA is inferior to many countries, including Russia and Ukraine.

The largest IORM manufacturer in the country is *Cleveland-Cliffs Inc*. It is worth mentioning, that Cleveland-Cliffs Inc is the largest manufacturer of iron ore pellets not only in the USA, but also in the countries of Northern America. Basically the company delivers production to the metallurgical companies of the USA and Canada.

At present Cleveland-Cliffs Inc incorporates six mining divisions, located in the USA and Canada. Besides it owns 80% of Australian IORM manufacturer - Portman

Limited which delivers lumpy iron ore and iron ore fines mostly to the Asia markets. Besides the Cleveland-Cliffs Inc. owns 30% of shares of the Amapá iron ore project in Brazil.

The Cleveland-Cliffs Inc. assets:

The USA

Empire Iron Mining Partnership
Tilden Mining Company L.C.
Hibbing Taconite Company
Northshore Mining Company
United Taconite

Canada

Wabush Mines

Australia

Portman Limited
Sonoma Project

Brazil

Amapá Project

Capacity of the company assets in the USA and Canada amounts to 37 million t/year, the Cleveland-Cliffs Inc share makes up 23 million t/year in accordance with its shares.

In the first quarter of 2007 Cleveland-Cliffs reached the agreement to purchase 30% of shares of the joint iron ore project of the Amapá Company and the MMX Mineração and Metállicos. The project should be put on stream already at the end of 2007. The Amapá production capacities to manufacture iron ore concentrate will make up 6,5 million t/year. In June 2007 the company declared sale of 26,8% of the shares of Wabush Mines companies Consolidated Thompson Iron Mines Ltd.

The data on pellets manufacture by Cleveland-Cliffs Inc in 2006 and the first half-year of 2007 are submitted in Table 3.

Company Cleveland-Cliffs carries out deliveries of its production on the basis of long-term contracts. In particular, in the current year two long-term contracts to deliver IORM have been signed with the local companies. The 7 year contract on pellets delivery has been signed with AK Steel. Annual pellets deliveries of the given company will make up 0,9 up to 1,4 million t. Pellets deliveries to *Republic Engineered Products* company will be carried out up to 2011. The volume will make up from 400 up to 800 thousand t/year. Now the company produces 13 types of pellets with the iron contents starting with 59,61 up to 66,10%.

Table 3: Production of rolled briquettes by Cleveland-Cliffs Inc in 2006 and the first half of 2007, million t

Mining companies	2006	2007*	1st half 2006	1st half 2007
Empire	5,0	5,1	2.5	2.5
Tilden	7,0	7,8	3,5	3,8
Hibbing	8,4	7,6	4,2	3,4
Northshore	5,2	5,2	2,5	2,6
United Taconite	4,4	5,4	2,4	2,6
Wabush	4,2	4,9	1,8	2,2
All in North America countries	**34,1**	**36,0**	**17,0**	**17,2**
Cleveland-Cliffs Inc part	21,1	22,7	10,7	11,0
Other actives				
Koolyanobbing	7,0	7,7	3,0	3,9
Cockatoo Island	0,7	0,7	0,3	0,3
Total Cleveland-Cliffs Inc	**28,8**	**31,1**	**14,0**	**14,2**

*Projection

Source: corporation data, Tex Report

In 2006 the share of 15 world largest manufacturers was 47% of the global of iron ore production. At the same time, if we pool resources of IORM manufacture within the Russian and Ukrainian holdings and include the Chinese iron ore extraction in terms of commodity production, the situation will essentially change. In 2006 market share of Brazilian CVRD in world ore production reached 15,5%, the share of three world largest companies including Rio Tinto and BHP Billiton was about 31,6% of the total IORM output. The data on the world largest manufacturers of iron ore are presented in Table 4.

Table 4: Largest worlds commodity iron ore manufacturers in 2006

Companies	Production, million t	Specific weight in world's production, %
Total all over the world	**1765**	**46,78**
Including:		
1. CVRD (Brazil)	273,3	15,48
2. RioTinto (Great Britain / Australia)	168,2	9,53
3. BHP Billiton (Great Britain / Australia)	115,4	6,54
4. Cleveland-Cliffs (The USA)	40,9	2,32
5. Kumba Resources (Republic of South Africa)	32,0	1,81
6. NMDC (India)	28,0	1,59
7. LKAB (Sweden)	23,3	1,32
8. CVG Ferrominera Orinoco (Venezuela)	23,0	1,30
9. JSC « Lebedinsky of GOK » (Russia)	21,0	1,19
10. US Steel (The USA)	21,0	1,19
11. JSC «Mikhailovsky GOK» (The Russian Federation)	20,1	1,14
12. CSN (Brazil)	16,0	
13. SAIL (India)	15,9	0,91
14. Anshan Iron and Steel (Chinese People's republic)	14,4	0,90
15.SSGPO (Kazakhstan)	13,2	0,82

Source: AME

Consumption. Iron ore is used basically in ferrous metallurgy for manufacture of pig-iron and metallized raw material and, in insignificant quantities, directly for steel smelting.

The world market of iron ore has two large segments - the countries of Asia and the country of Europe which show the largest IORM consumption.

In 2006 the Asian countries consumed 67,3% of the total IORM consumption. In comparison with 2000, in 2006 consumption of iron ore in the region more than doubled, having made up 1188 million t. Basic IORM consumption fell on two countries - China and Japan.

China is not only the largest manufacturer of iron ore, but also the largest consumer. In 2006 IORM consumption in the country made up 914,2 million t. In comparison with 2000 IORM consumption in the country more than tripled. The share of China in total IORM consumption in 2006 amounted to 51,8%.

IORM consumption in Japan is more stable, since 2000-2006, depending on volumes of steel manufacture in the country made up from 126 up to 137 million t. The previous year the share of the country in the global IORM consumption made up 7,8%.

The share of the European countries in 2006 was 10,7 % of the total IORM consumption, which made up about 190 million t. The largest IORM consumers in the region are Germany (40,1 million t in 2006), France (19,8 million t), Italy (17,8 million t), the Great Britain (16,4 million).

Lately IORM consumption in the countries of America, where the USA and Brazil are the largest consumers, is stable enough.

IORM consumption in the CIS countries has basically grown due to Russia and Ukraine which have increased pig-iron manufacture in the latest years.

The largest ore volumes stream from Australia to Japan, China, the countries of Western Europe and South Korea; from Brazil ore is shipped to the countries of Western Europe, China, Japan and South Korea, and the CIS (Russia and Ukraine) delivers ore basically to the countries of Eastern Europe. IORM deliveries to China from Ukraine and Russia gain in breadth. India exports IORM to China, Canada - to the countries of Western Europe.

Leading positions in the structure of world IORM **export** are occupied by Australia, Brazil and India which provide for over 75% of total IORM deliveries. Changes in IORM export structure of the separate countries can take place only in long-term prospect when India plans for development of ferrous metallurgy will be put into practice because that can lead to partial or total India disappearance from IORM market. At least deliveries of rich iron ore from India to the world market will sharply be reduced, that is evident from the recent information from this country. According to the latest forecasts, in 2020 steel manufacture in India can reach 200 million t that will lead to a sharp increase in IORM demand from the local metallurgical companies. And though iron-ore companies of the country consider, that they can meet internal IORM needs and maintain high volume of export deliveries, most likely export IORM deliveries from India will be essentially reduced, that will allow

companies from Australia, Brazil and the CIS to occupy the niche of Indian suppliers (mainly to China).

Leading positions in the IORM deliveries to the world market belong to three companies: CVRD, Rio Tinto and BHP Billiton. Their share is over 70% of total IORM export. The situation will hardly dramatically change, though essential increase in iron ore manufacture is expected in China and India. But, alongside with increase in IORM manufacture, the further growth of consumption iron ore raw material is expected in these countries too. In general it is impossible to speak about IORM export from China which even in the long-term prospect will remain the largest world importer of this material. India, as has been already mentioned, will experience problems with ore export connected with the active position of national metallurgical companies which all support restriction of IORM deliveries to the world market. For the time being the government of the country is not going to limit ore export, though insignificant iron ore export duties were entered in February 2007 that was extremely negatively taken in China. The China metallurgical companies even refused to purchase Indian ore and preferred to increase import from the third countries.

Significant investments which have been planned or have been already implemented by leading mining companies of the world with the purpose to increase iron ore extraction and manufacture of pellets that are meant for deliveries to the world market should be also taken into account.

Russian and Ukrainian mining enterprises cannot render a serious competition to the leading mining companies in the world market as their transport costs are very high (in particular deliveries to China), that sharply reduces profitability of operations in the given market; higher IORM production costs; lower raw material specifications, necessity to maintain the growing requirements of the domestic metallurgical enterprises, compensation of worked-out deposits, etc. The basic region of Russian IORM sales in medium term prospect will remain the European countries, mainly, Eastern Europe. We can expect expansion of IORM deliveries from Russia and Ukraine, and also Kazakhstan to China market.

Growths of ferrous metals manufacture causes increase in IORM demand in the world from the leading metallurgical companies. In 2006 pig-iron world production reached 872 million t, that 7,1% exceeded parameters of the previous year. In comparison with 2000 manufacture of pig-iron in the world in 2006 more than 51 % increased. Manufacture of metallized raw material in 2006 4% increased in comparison with 2005 and made up more than 60 million t. In comparison with 2000 metallized raw material production increased by 16 million t in the world.

Steel smelting in the world in 2006 made up almost 1240 million t, that had essentially exceeded parameters of 2000 (847,7 million t).

Since basic pig-iron and steel manufacture is concentrated in the countries which do not have large reserves of iron ore of their own (Japan, the European countries) or cannot completely satisfy the internal needs (China, the USA), IORM import has been rapidly increasing.

In the latest years IORM **import** has grown from 565 million t in 2003 up to 753 million t in 2006. By available estimations, by 2007 results IORM import in the world can reach 810 million t.

In the world market there are two largest markets where basic volumes of IORM impport are concentrated: the countries of Europe and the countries of Asia. In 2006 IORM import to Asian countries made up 527 million t, that is almost 70% of the total iron ore import. In comparison with 2003 IORM import to the Asian countries almost 53 % increased (Tab. 5).

Table 5: Iron ore import in the world in 2003-2007, million t

Countries / Regions	2003	2004	2005	2006	2007*
Total all over the world	**565**	**640**	**700**	**753**	**810**
Including:					
European countries	171	179	168	172	170
North American countries	23	24	25	21	18
Central and South America countries	10	11	9	9	9
Middle East and Africa countries	16	16	25	21	24
Countries of Asia	345	409	472	527	586
Japan	*132*	*135*	*132*	*134*	*133*
South Korea	*43*	*44*	*43*	*44*	*45*
China	*148*	*208*	*275*	*326*	*383*
Taiwan	*16*	*16*	*15*	*15*	*16*
Other countries of Asia	*6*	*7*	*6*	*7*	*8*
Oceania	1,5	2,3	1,5	2,5	2,5

*Forecast

Source: AME mineral Economics, UNCTAD, Tex Report

The largest world IORM **importer** is **China**, in 2006 its share was 43,3% of the total world import. And the share of China in world IORM import tends to growth. That is connected with extending escalation of ferrous metals production in the country. Taking into account that the basic steel smelting method in China is oxygen - converter and growth of pig-iron rate is observed, we can predict the further increase of IORM import in the country. The high price level for ferrous metals scrap in the world market as well as the deficiency of the electric power in the country leads to restrictions on electric furnace steelmaking development in the country.

In 2006 China imported 326 million t of IORM, it more than twice surpasses parameters of 2003 (148 million t). Growth of IORM import to China takes place at the background of substantial growth of country own extraction. In January - July, 2007 China imported 221 million t of IORM, that 19% has exceeded parameters of the similar period of the previous year.

In the latest years the second place among the countries in terms of IORM import volumes was traditionally occupied by Japan. IORM import of the country is stable enough and makes up 132-135 million t/year.

The basic iron ore suppliers to Japan is Australia, and to China - Australia, Brazil and India.

Large IORM importers are also Germany, South Korea, France, Spain, the Great Britain, Taiwan, and Belgium with

Luxembourg, the USA.

Prominent feature of **price tendencies** in world IORM market is price increase (except for the insignificant decrease of pellets price in 2005). Price increase in many respects is caused by insufficient IORM offer in the world market, mainly, in connection with sharp growth of demand from China. Global growth of demand for ferrous metals is accompanied by construction of new large metallurgical enterprises, especially in China.

In these conditions the mining companies have managed to achieve increase of IORM price level for three years on end (2005, 2006 and 2007). And if in 2005 and 2006 the process of IORM price level settlement took several months, the special feature of getting the prices for IORM deliveries in 2007 fiscal year (FY) was a fast achievement of agreement between the world leading mining companies and large metallurgical companies. Admirably quickly Brazilian CVRD reached an agreement with the Chinese party which was represented by the Baosteel company. It considerably facilitated negotiating process with other participants of the world IORM market who consented to the new price increase.

Negotiations of the price level for IORM deliveries in 2007 FY between CVRD and Baosteel were completed already by December 21, 2006. According to the achieved agreement the price for iron ore fines for 2007 FY deliveries from Carajas (SFCJ) and Southern system (SSF) area 9,5% increased on FOB Ponta da Madeira and Tubarao ports, up to $0,7320/unit of Fe (SFCJ) and $0,7211 (SSF).

At the beginning of 2007 Brazilian CVRD continued negotiations of the IORM price level with large consumers. In particular, the agreement with Italian company Lucchini had been achieved; the company agreed to 5,28% increase of blast furnace pellets prices with deliveries in 2007.

The leading metallurgical company of Italy - Ilva agreed to the IORM price level increase in December, 2006. Ilva Company gets the major part of pellets from the enterprise Itabrasco which is owned jointly by the Ilva and CVRD.

Thus, a new pellets price level with delivery in 2007 FY has reached $1,1796 per unit of iron content in a ton FOB Tubarao and $1,2108 per unit of iron content FOB Ponta da Madeira (pellets from enterprise Sao Luis). CVRD has also reached agreements to increase the pellets prices (by 5,28%) with Nippon Steel, JFE, Sumitomo Metals, Kobe Steel and Nisshin Steel (Japan), Baosteel (China), Posco (S. Korea), Erdemir (Turkey). In turn Nippon Steel, JFE, Sumitomo Metal Industries and Nisshin Steel (Japan) have agreed to increase of BHP Billiton and Rio Tinto prices: 9,5 on lumpy ore % and iron ore fines for 2007 FY shipments. The same price increase for CVRD iron ore fines is observed. In Table 6 the data on the signed IORM delivery contracts is submitted.

Table 6: Contracts on iron ore raw materials delivery among the leading mining and metallurgical companies of the world

Date	Iron ore company	Metallurgical Companies	Production types	Grade	Price per unit Fe/t	Fluctuation, %
21.12.2006	CVRD	Baosteel Group	Ore fines	SFCJ SSF	73,20 72,11	+9,5 +9,5
22.12.2006	Hamersley Iron	Baosteel Group	Lump ore Ore fines	Hamersley	102,64 80,42	+9,5 +9,5
	BHP Billiton	Baosteel Group	Lumpy ore Ore fines	Mt Newman	102,64 80,42	+9,5 +9,5
26.12.2006	CVRD	Nippon Steel, JFE Steel, Sumitomo Metals, Kobelco Nisshin Steel	Ore fines	SFCJ	73,20	+9,5
		POSCO	Ore fines	SSF	72,11	+9,5
28.12.2006	CVRD	ILVA	Ore fines	SFCJ SSF	84,70 81,46	+9,5 +9,5
			Rolled briquettes	Ponta da Madeira Tubarao	121,08 117,96	+5,28 +5,28
11-12.01.2007	Hamersley Iron BHP Billiton	Nippon Steel, JFE Steel, Sumitomo Metals, Kobelco Nisshin Steel	Lump ore Ore fines	Hamersley, Mt Newman, Yandi, etc.	102,64 80,42	+9,5 +9,5
6.02.2007	MMTC NMDC	Nippon Steel, JFE Steel, Sumitomo Metals, Kobelco Nisshin Steel	Lump ore Ore fines	VON COH Basic Grade	101,11* 78,45*	+9,5 +9,5
22.02.2007	LKAB	Corus	Rolled briquettes Ore fines	BF Pellets Kiruna B Fines Malmberget A Fines	131,00 96,00 96,50	+7,2 +11,1 +11,0
26.03.2007	QCM	ThyssenKrupp Steel	Rolled briquettes Concentrate	Acid BF pellets Regular concs	122,58 86,40	+5,8 +10,42
4.05.2007	CVRD	Arcelor Mittal	Ore fines	SFCJ SSF	84,70 81,46	+9,5 +9,5
			Rolled briquettes	Ponta da Madeira Tubarao	121,08 117,96	+5,28 +5,28

* *per gross ton*

Source: AME, Tex Report

Before long duration of IORM price level negotiations, in low conjuncture state of ready made metal products market, used to be characterized with significant periods of negotiations.

Thus, in 2001 the base agreement was made only on March 19, and in 2002 precise prices of iron ore appeared only at the end of May after long and extremely difficult negotiations.

In conditions of low ferrous metals market conjuncture prices on iron ore raw material for 2002 were 3-9% lowered during price revision negotiations. Iron ore fines delivered to the countries of Western Europe by Australian company Hamersley Iron, fell in price by 8,8%. Prices for lumpy ore went down by 9,5%.

In Table 7 the prices for iron ore raw material in the markets of Europe and Japan are presented.

Further growth of ferrous metals manufacture in the world will lead to the increase of IORM demand. To tell the truth, in the nearest years reduction of steel manufacturing rates in the world is expected as well as of consumption of ready made metal products. If in 2006 in comparison with 2005 increase of global steel smelting made up 8,9 %, and consumption of ready made metal products - 8,4%, in 2007 expected growth rates - 5,9 and 4,6% accordingly. In 2008-2012 rates of steel manufacture increase, according to available forecasts, can go down to 2,9-3,3%, and in 2012 - to 1,5 %. Consumption of ready made metal products increase is expected to be at the level of 3,5-4,9%.

Table 7: Iron ore raw materials prices at the European and Japanese markets in 2002-2007 (in the USA cents per 1% of iron content in ore), on FOB terms

Company	Region	Ore type	2002	2003	2004	2005	2006	2007
European market								
CVRD, Brazil	Carajas, SSF	Iron ore fines	29,31	31,95	37,9	65,00	77,35	84,70
CVRD, Brazil	Itabira, SSF	Iron ore fines	28,62	31,04	36,45	62,51	74,39	81,46
Japanese market								
Hamersley Iron, Australia	Hamersley	Iron ore fines	28,28	30,83	36,57	62,71	74,63	81,72
Hamersley Iron, Australia	HI Yandi	Iron ore fines	26,58	28,98	34,38	58,95	70,15	76,81
BHP Billiton, Australia	Mt. Newman	Iron ore fines	28,28	30,83	36,57	62,71	74.63	81,72
BHP	Yandi	Iron ore fines	26,58	28,98	34,38	58,96	70,16	76,83
CVRD, Brazil	Itabira,SSF	Iron ore fines	25,36	27,64	32,79	56,23	66,91	73,27
CVRD, Brazil	Carajas	Iron ore fines	25,86	28,14	33,29	57,08	67,92	74,37

Source: UNCTAD, AME, Tex Report, corporation data

It is expected that start-up of large projects for IORM mining and manufacture that are being carry out by the leading iron ore companies of the world, will for the most part take place in 2007-2008. But it takes time to reach the designed capacity, and China cannot essentially increase iron ore manufacture, therefore, according to

estimations of a number of research institutes, groups, bank structures, mining companies, we can expect a new increase of IORM price level within the limits of 5-10% in 2008.

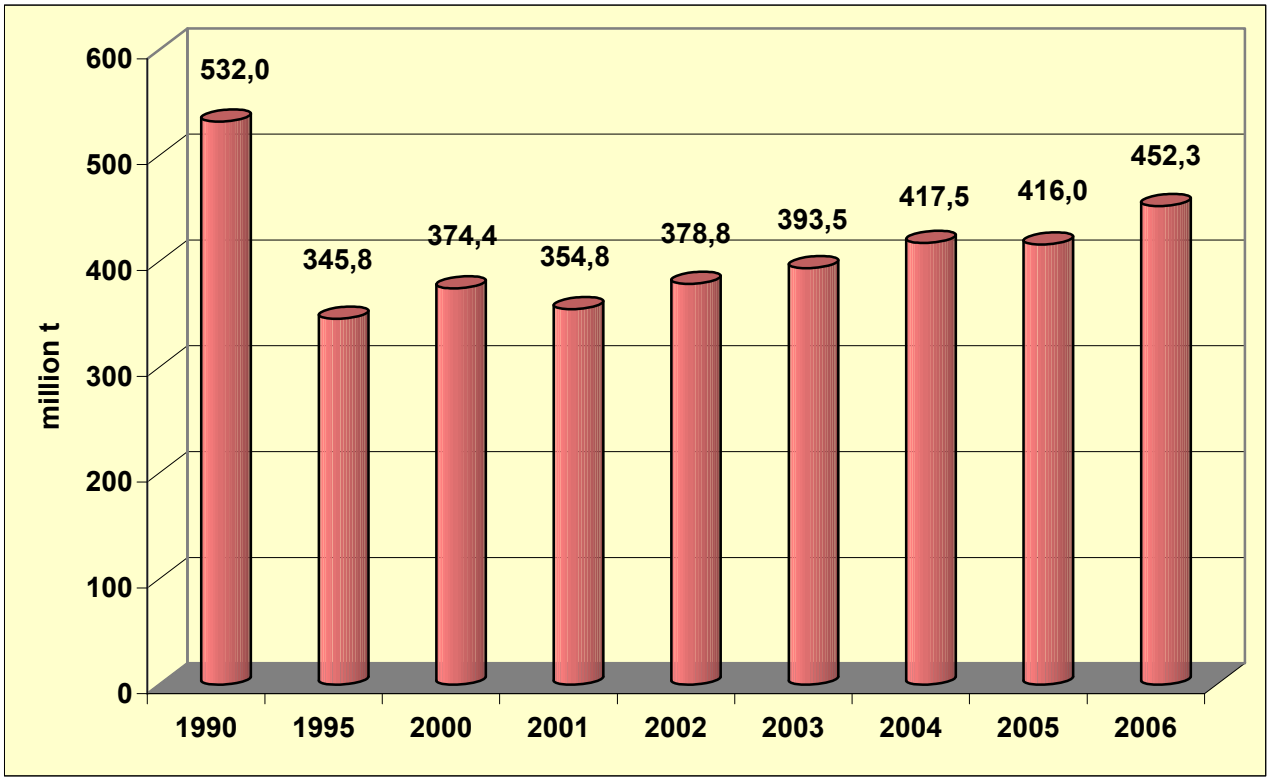
Under the Credit Suisse Group latest forecasts, iron ore prices will be at a high level till 2013. Such situation is connected with the fact that the leading iron ore companies of the world, including CVRD, cannot completely cope with the China growing needs for raw material.

Macquarie Bank that earlier forecast 15% iron ore depreciation in 2008 now expects 10% price increase, Citigroup - 7%, Goldman Sachs - 5%, Deutsche Bank - 10%, and UBS - 10%.

2. The CIS iron ore industries state

In the CIS countries iron ores mining is carried out by Russia, Ukraine and Kazakhstan. Until recently Azerbaijan also extracted iron ores, however in 1996 extraction was stopped because of the lack of demand. Volumes of iron ores extraction in the CIS states in 1990, 1995, 2000-2006 are submitted in Figure 1 and Table 8

Figure 1: Iron ore mining dynamics in the CIS countries in 1990, 1995, 2000-2006, million t



Source: Rudprom, Infomine

After decrease of iron ore extraction volumes in 2001, since 2002 the steady increase of extraction is observed in the CIS. For the period of 2000-2006 iron ore extraction in the CIS 20,8% increased including in Russia - 21,9%, in Ukraine - 15,8%, in Kazakhstan - 31,4%.

In 2006 in comparison with the level of 2005 iron ore extraction in the CIS had 8,7 % increased and had made up 452,3 million t. In the first half of 2007 increase of iron ore extraction volumes in the CIS countries has been going on and has made up 5,7% in comparison with the corresponding period of 2006. And, the greatest increase rates during this period have been noted in Ukraine - 10,4 %. In Russia the increase made up 3,8 %, in Kazakhstan - 3,6 %.