



The status of nickel resources in the world and the development of mineral resources in MCC

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The status of nickel resources in the world

	Reserves (Million T)	Grade (Ni) (%)	Metal Content (Million T)	%
Sulfur Nickel	10500	0.58	62	28
Laterite Nickel	12600	1.28	158	72
Total	23100	0.97	220	100



The status of the laterite nickel in the world

Laterite technology	Reserve s Million T	Grade (Ni) (%)	Content of nickel Million T	%
Pyrometallurgy	4000	1.55	60	38
Hydrometallurgy	8600	1.15	98	62
Total	12600	1.28	158	100



The production & consumption of nickel in the world (000'T)

	2001	2002	2003	2004	05.1-3
Nickel of Mine	1212.4	1215.1	1257.8	1277.9	320.4
Nickel of refined	1154.6	1185.5	1227.3	1274.7	332
Refined Consumption	1159.6	1221.7	1276.7	1314.8	373.5
Stocks of nickel	100.4	97.8	98	97.6	86.3
Trade of nickel	144.8	179.3	218.8	216.6	47.6



Main countries of mine nickel

(000'T)

	2001	2002	2003	2004	05.1-3
Russia	272.8	267.3	300.7	304	74.3
Canada	194.1	189.3	163.2	186.5	46.9
Australia	197	188.2	191.6	185	50.1
New Caledonia	112.5	99.9	111.9	118.2	23.9
Indonesia	84.8	103.7	103.5	96.6	21
Cuba	76.5	75.2	74	75.5	19.5
China	51.5	53.7	61.1	63.3	12.9
Columbia	38.4	44	47.9	48.8	13.3



Main countries of refined nickel

(000'T)

	2001	2002	2003	2004	05.1-3
Russia	248	243	273.3	277	67.5
Japan	151.4	156.1	160.6	167.3	39.3
Canada	140.6	144.5	124.4	151.5	36.9
Australia	128	133	129	124	33.9
China	49.7	52.4	64.7	71.5	23.6
Finland	54.6	55.3	52.5	49.6	12.3
Columbia	38.4	44	47.9	48.8	13.3
New Caledonia	45.9	48.7	50.7	43	11.7
Cuba	41.2	41.8	42	42	10.5
South African	36.4	38.5	40.8	39.9	10.7



Main countries & regions of consumption nickel (000'T)

	2001	2002	2003	2004	05.1-3
Japan	199.1	169.6	181.7	186.3	41
American	129	121	126	151.6	43.6
China	85.4	84.2	132.8	139.5	55.7
South korea	59.1	95.6	112.5	122.6	30.2
Germany	102.7	117.8	94.3	106	34.7
Chinese Taiwan	91.8	103.6	102.6	91.4	21.2
Finland	47.7	68.2	89.7	78.3	20.8
Italy	62.8	71.6	70.5	70.3	27.6
Sweden	48.3	49.7	48.4	48.3	13.8
British	55.8	58.9	39.2	44.6	2



The average consumption of stainless steel in the world

Country (region)	Kg/per capita. a	Country (region)	Kg/per capita. a
Chinese Taiwan	35	American	7.3
South Korea	23.5	British	5
Italy	22.8	China	3.3
Japan	17.2	South African	3.1
Spanish	12.8	Thailand	3
France	10.1	Brazil	1.6
Canada	7.2	India	0.5



The operating laterite nickel projects in the world

Country	Mine	capacity (T)	Country	Mine	capacity (T)
Cuba	Moa Bay	42000	Indonesia	Pomalaa	11000
Australia	Murrin Murrin	10000	Colobia	Cerro Mastoso	29000
Australia	Bulong	9000	Venezeula	Loma de Niquel	17000
Australia	Cawse	9000	Philippine	Rio Tuba	10000
Indonesia	Soroako	45000			



Basic views of development of the laterite nickel in the world

1. It is an inexorable trend to expeditiously develop and utilize the laterite nickel resources due to the decrease of sulfur nickel ore resources and the increase of demanding for nickel resources.



Basic views of development of laterite nickel in the world (cont.)

2. The saprolite nickel is normally recovered by pyrometallurgical technology in which it consumes more energy and needs the high grade of saprolite. With the high grade of the saprolite decreasing and increasing of the price of energy, the proportion of recovery of the saprolite by pyrometallurgical technology will be gradually decreased in the recovery of the laterite nickel resources.



Basic views of development of laterite nickel in the world (cont.)

3. with the gradually improvement of pressure acid leach technology, It will be a main development trend to develop and utilize low grade of the limonite nickel resources and It will have a broad prospects



The principle of development mineral resources for MCC

1. taking advantage of self-superiority,
2. Meeting the demand of economic construction of the country
3. operating in diversified manners
direct investing , cooperating, operating by leasing, operating committed by owner, exchanging resources by EPC,
4. improving common development.



The status of development mineral resources for MCC

1. Operating Project:

Sandark Copper Mine in Pakistan

2. Constructing Project:

Duddar Lead & Zinc Mine in Pakistan

3. Signed Agreement Project:

Ramu Nickel Project in Papua New Guinea

4. Negotiating Project:

FMG Iron Ore Mine In Australia

5. Following Project:

MURCHISON Iron Ore Mine In Australia



Overview map of Sandark copper mine in Pakistan



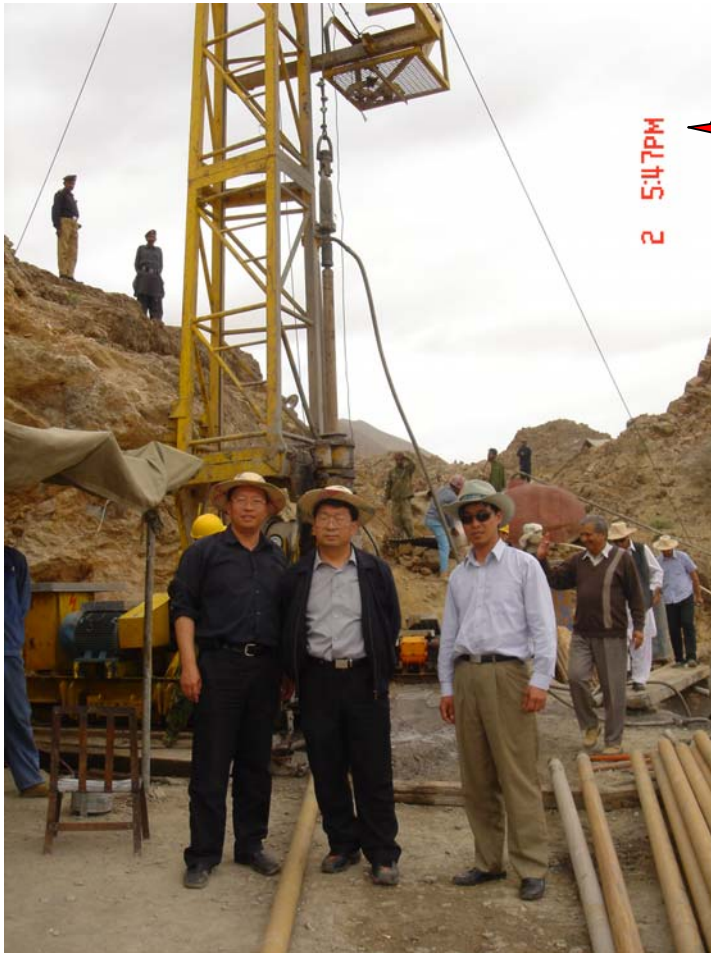


The status of production of Sandark copper mine

	Capacity of design	2003	2004	2005 1-6	2005 Predict
Mining (MT)	425	215.37	431.43	247.7	450
Stripping (MT)	1275	943.18	1341.2	878.2	1450
M&S (MT)	1700	1158.6	1772.7	1125.9	1900
Strip ratio	3	4.38	3.11	3.55	3.2
Beneficiation (MT)	425	214.6	431.4	247.7	450
Concentrates (MT)	7.118	3.248	6.581	3.848	7.2
Blister(T)	15500	4843.8	12986	10160	16000



The location of Duddar Lead & Zinc Mine



the location of Mixed Shaft



The area of water collecting in the mine



The design program of Duddar lead & zinc Mine

1. Reserves: Ore: 9.4376 Million T,
2. Grade: Zn 10.37%, Pb 3.72%
3. The content of zinc: 978.3 thousand tones,
4. The content of lead : 350.9 thousand tones
5. The capacities of mining & beneficiation : 660 thousand tones per year.
6. The period of construction : 2.5 year
7. The serves time of the mine : 14 years
8. The ramp up time : 3 years



The design program of Ramu nickel project

1. The capacity of mining : 4.635million t/y
2. The capacity of beneficiation : 4.635million t/y
3. The capacity of PAL : 3.21million t / y
4. The intermediate products :
Sulfur nickel & cobalt :58790 t / y
 The content of nickel : 32334 t / y
 The content of cobalt : 3257 t / y
5. The period of construct : 24 months ,
6. Ramp up time : 24 months

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