



Basic facts on the world nickel industry

By Andreas Tegen

In 1950 monopoly power in the nickel industry was at its peak. Inco controlled nearly 90 per cent of the capitalist world nickel market. In 1967 Inco was still the unchallenged master of the industry. But since then dramatic changes in the structure of the nickel industry have taken place.

Andreas Tegen of the Raw Materials Group has compiled some background information on these changes.

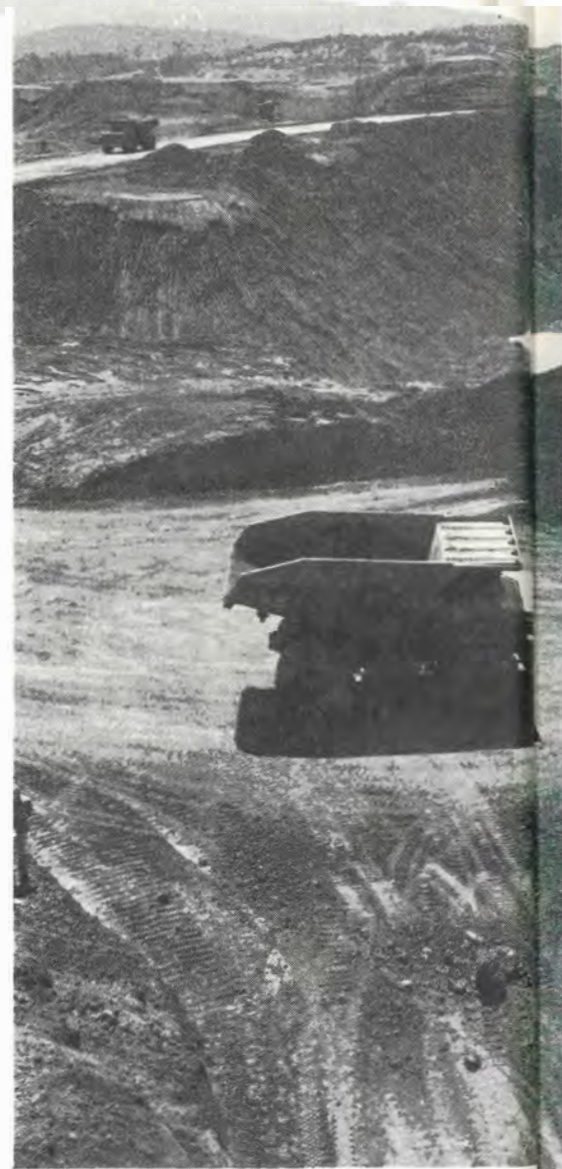
The nickel industry has been subject to profound changes in the post-war period, especially in the last decade. The mine and metal production is shifting to new areas of the world and the consumption pattern is beginning to change. This is reflected in table 1. The market situation is going through an even greater change. Many new producers have emerged and the exports from the socialist countries have increased. This has — combined with a general economic crisis in the capitalist world — led to a deep crisis in the nickel industry. The main producers in the capitalist world and their shares of world production are shown in table 2.

Geographical distribution

The *industrialized capitalist countries* have the largest share of world nickel production, especially the metal production. Canadian and Australian mines produce more than 3/4 of the nickel ore in the industrialized capitalist countries, Canadian and Japanese refineries more than half of the metal production. The consumption of nickel is even more concentrated to the industrialized capitalist countries. The steel industry and other consumers in the U S A, Japan and the F R G account for more than two thirds of the industrialized capitalist countries' consumption.

The industrialized capitalist countries' share of world mine and metal production of nickel is decreasing, however, as well as their consumption. Canadian mine production has decreased by almost 50 per cent in the last ten years. Metal production has dropped, mainly in Canada, but also in the UK. This reflects the deteriorating position of the former nickel monopoly Inco.

Not all industrialized capitalist countries have lost market shares in the last decade, however. Australia has doubled its share of world mine production and more than doubled its share of world metal production. The United States has almost trebled its share of metal production and the F R G has increased its share of nickel consumption.



The position of the «Third World» as a raw material supplier to the industrialized world is obvious in the figures of its nickel production and consumption. The «Third World» has 30 per cent of world mine production, 13 per cent of world metal production but only 5 per cent of world consumption. The French colony New Caledonia is still the main «Third World» ore producer, but its share is rapidly diminishing. Instead the shares of the Dominican Republic, Indonesia, the Philippines and Botswana rapidly increase, making the total «Third World» share of world mine production larger.

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*Open cast laterite nickel mine
in Cuba 1979.*

Table 1
Geographical distribution of world nickel mine and metal production and consumption.

		Mine production			Metal production			Consumption		
		1971	1976	1981	1971	1976	1981	1971	1976	1981
Industrialized capitalist countries		50.4	50.9	40.8	68.4	62.6	57.5	74.0	71.4	66.3
Africa	South Africa	1.8	2.9	3.6	1.8	2.3	2.4	0.7	0.7	0.9
Asia	Japan	-	-	-	16.6	12.8	13.7	17.2	17.3	16.0
Europe	Total	2.1	3.0	3.0	16.8	13.8	13.8	28.0	28.5	27.7
	F R G	-	-	-	-	-	-	6.5	8.6	9.5
	Finland	0.5	0.8	1.0	0.6	1.0	1.9	0.1	0.2	1.1
	France	-	-	-	1.6	1.6	1.4	6.1	5.0	5.1
	Greece	1.5	2.1	1.7	1.7	2.2	1.6	-	-	-
	Norway	0.1	0.1	0.1	6.7	4.3	5.3	0.2	0.1	-
	Italy	-	-	-	-	-	-	3.4	3.3	3.1
	Sweden	-	-	-	-	-	-	3.6	3.6	2.5
	United Kingdom	-	-	-	6.2	4.7	3.6	5.9	4.6	3.4
	Others	-	-	-	-	-	-	2.2	3.1	3.0
North America	Total	41.3	35.3	23.6	30.8	27.6	21.6	27.4	24.2	21.0
	Canada	39.2	33.7	22.0	28.5	23.4	15.4	2.1	1.7	1.5
	U S A	2.1	1.6	1.6	2.3	4.1	6.2	25.3	22.5	19.5
Oceania	Australia	5.2	9.7	10.6	2.4	6.1	6.0	0.7	0.7	0.7
»Third world«		26.7	26.1	29.5	6.9	13.8	12.2	1.3	2.5	5.2
Africa	Total	1.8	3.7	4.8	1.3	2.9	1.8	-	-	0.1
	Botswana	-	1.6	2.6	-	-	-	-	-	-
	Zimbabwe	1.7	2.1	2.2	1.3	2.0	1.8	-	-	-
Asia	Total	2.3	3.7	10.6	-	2.4	3.4	0.7	1.0	3.1
	Indonesia	2.2	1.8	6.4	-	0.5	0.7	-	-	-
	Philippines	0.1	1.9	4.2	-	1.9	2.7	-	-	-
Latin America	Total	0.5	3.4	3.0	0.4	3.5	3.0	0.6	1.5	2.0
	Brazil	0.5	0.3	0.4	0.4	0.3	0.3	0.3	0.6	1.2
	Dominican Rep.	0.1	3.1	2.6	-	3.2	2.7	-	-	-
Oceania	New Caledonia	22.2	15.3	11.1	5.2	5.0	4.0	-	-	-
Socialist countries		22.9	23.0	29.7	24.7	24.5	30.3	24.7	26.1	28.5
	China	1.6	1.7	3.4	2.7	2.9
	Cuba	5.4	4.7	5.7	2.9	2.4	3.0	-	-	-
	Soviet Union	16.1	16.7	20.6	20.3	20.3	24.1	17.1	18.2	19.8
	Others	1.4	1.6	3.4	1.5	1.8	3.2	4.2	5.2	5.8
World total (per cent)		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
World total (kt metal content)		681	779	703	620	758	704	527	666	656

Source:
Annuaire Statistique Minimet (edition 1982).

The new producers the Dominican Republic and the Philippines together with New Caledonia have 3/4 of metal production in the »Third World«. Brazil and India have increased their consumption of nickel.

The *socialist countries* have a balanced share of around 30 per cent of both world mine and metal production as well as of world consumption. The USSR is the leading producer and consumer. The socialist countries metal production has increased as compared with total world production mainly due to new facilities in the USSR and Cuba.

In 1970 Inco built a giant chimney matching the height of the Empire State Building trying to curb the pollution problem at its Copper Cliff smelter.



The nickel companies

In 1950 there were three producers of nickel in two countries (Inco and Falconbridge in Canada and Societé Le Nickel in New Caledonia). Today, there are 44 producers in 26 countries. In 1950 Inco alone set the nickel price, today it is set on the »free« market and the London Metal Exchange. In 1950 Inco's market share was 85 per cent, today it is below 25 per cent.

No wonder Inco's chairman and chief executive Charles F. Baird complains about the situation. In a presentation in June 1983 in London for European investors Baird said: "... state support prevented the exit of uneconomic producers." Government subsidies may be one of the reasons for the depressed nickel market situation but it is also obvious that the earlier so profitable nickel industry has attracted many companies with long experience in mining.

The ownership analysis shows that out of a total of 44 producers, 18 major corporations account for 63 per cent of world mine output. This almost equals total production in the capitalist world.

Of the 18 producers listed in table 2, only 3 are state-owned, namely P T Aneka Tambang, Outokumpu and Societé Le Nickel, in which the French state recently bought a majority stake. Together these companies produce 8.7 per cent of the world's nickel ore and 10.6 per cent of its nickel metal.

Ten corporations of those listed in the table have entered the industry during the last two or three decades. They now account for 18.8 per cent of world mine output of nickel and for 23.4 per cent of world metal output:

- AAC is the world's largest mining house. It is the world's largest producer of precious metals and a major producer of copper and other base metals, uranium and coal.
- Amax is a large and diversified minerals producer. It is a major molybdenum, iron ore, copper, aluminium,

tungsten and agricultural minerals producer.

- *Freeport* is a major producer of copper, gold and agricultural minerals. It merged with the energy corporation McMoRan in 1981.
- *BP* is - besides its production of energy minerals - one of the world's largest copper producers through its majority holding in Kennecott.
- *Hanna* is a major iron ore producer.
- *Gencor* is a major gold, uranium, platinum and chrome producer. It was formed in 1980 in a merger between General Mining and Union Corporation. AAC has a 7 per cent interest in Gencor.
- *Rio Tinto-Zinc* is a large and diversified minerals producer. It is a major in iron ore, copper as well as a producer of other base metals, aluminium, uranium and gold. AAC has a 4 per cent interest in Rio Tinto-Zinc.
- *Western Mining* is a major bauxite and alumina producer through its 33 per cent stake in Alcoa of Australia.
- *Sumitomo* is one of the Japanese Sogo Shosha (see RMR Vol 1 No 1).
- *Nippon Mining* is a diversified minerals producer.

Other corporations are ready to start production of nickel, e. g. *Shell-Billiton*, a multi-mineral producer. Shell-Billiton is participating in the Cerro Matoso nickel project in Colombia, which has been delayed by the depressed market situation. Shell-Billiton's share is 35 per cent. Other shareholders are Hanna (20 per cent) and the Colombian state (45 per cent).

A big project which has been mothballed is Exmibal in Guatemala. It is owned by Inco (80 per cent) and Hanna (20 per cent).

Corporate concentration in the nickel industry has diminished, the earlier monopoly market has changed into an oligopoly situation. It remains to find out which are the forces behind this development.

Table 2
Corporate shares (per cent) of world nickel production 1982

Corporation	Share of mine production Producer (ownership %)		%	Share of metal production Producer (ownership %)		%
Inco	Total		22.0	Total		26.5
	Inco (100)	Canada	19.2	Inco (100)	Canada	22.7
	P T Inco Indonesia (97)	Indonesia	2.8	Inco (100)	U K	3.8
Falconbridge	Total		6.9	Total		7.3
	Falconbridge (100)	Canada	4.3	Falconbridge (100)	Norway	4.8
	Falc. Dominicana (66)	Dom. Rep.	2.6	Falc. Dominicana (66)	Dom. Rep.	2.5
ERAP ¹	Société Le Nickel (70)	N Caledonia	6.1	Total		8.2
AAC ²	Total		5.0	Total		3.7
	BCL ³ (30)	Botswana	2.8	Sherritt Gordon ⁴ (40)	Canada	2.1
	Rustenburg ⁵ (57)	South Africa	2.2	Rustenburg ⁵ (57)	South Africa	1.6
Western Mining	Western Mining (100)	Australia	4.8	Western Mining (100)	Australia	4.8
Marinduque	Marinduque (100)	Philippines	3.1	Marinduque (100)	Philippines	3.0
Amax	BCL ³ (30)	Botswana	2.8	Amax (100)	U S A	4.6
Freeport McMoRan	Queensland Nickel (50)	Australia	1.7	Queensland Nickel (50)	Australia	1.3
Metals Exploration	Queensland Nickel (50)	Australia	1.7	Queensland Nickel (50)	Australia	1.3
Aneka Tambang	Aneka Tambang (100)	Indonesia	1.7	Aneka Tambang (100)	Indonesia	0.7
BP	Agnew ⁶ (60)	Australia	1.5			-
Hanna	Hanna (100)	U S A	1.4	Hanna (100)	U S A	1.2
Larco	Larco (100)	Greece	1.1	Larco (100)	Greece	1.8
Gencor	Impala Platinum (49.6)	South Africa	1.0	Impala Platinum (49.6)	South Africa	0.9
Outokumpu	Outokumpu (100)	Finland	0.9	Outokumpu (100)	Finland	1.7
Rio Tinto-Zinc	Rio Tinto Zimbabwe (58)	Zimbabwe	0.6	Rio Tinto Zimbabwe (58)	Zimbabwe	0.4
Sumitomo			-	Sumitomo (100)	Japan	4.7
Nippon Mining			-	Nippon Mining (100)	Japan	1.8
Total ⁷			62.9			73.9

Notes:

¹ ERAP, the French state-owned energy group bought 70% of SLN in May 1983. Former owners of SLN, Imetal and Elf Aquitaine, reduced their shares to 15% each.

² AAC group. The head of the group is Anglo American Corporation of South Africa. Other important members of the group are MINORCO (Minerals and Resources Corporation, based in Bermuda) and De Beers.

³ Bamangwato Concessions Ltd. BCL is 85% owned by Botswana RST, in which AAC and Amax have a 30% stake each.

⁴ AAC group (through MINORCO) owns 29% of the British-based investment corporation Consolidated Gold Fields, which owns 25% of the US-based investment corporation Newmont Mining, which in turn owns 40% of Sherritt Gordon.

⁵ AAC directly owns 24% of Rustenburg. AAC group has another 33% stake in Rustenburg through 40% owned Johannesburg Consolidated Investment.

⁶ BP owns the British-based investment corporation Selection Trust, which owns 60% of Agnew. The balance is held by the US copper corporation ASARCO.

⁷ With the sources used there is a discrepancy of 4.2 percent between production of the non-socialist world in Table 1 and 2. This is mainly due to various difficulties in calculating Table 2.

Sources:

Roskill's Metal Databook 1983, Annuaire Statistique Minimet (edition 1982), Mining Annual Review 1982 and corporate annual reports.