

THE MINERAL INDUSTRY OF

ROMANIA

By Walter G. Steblez¹

Romania remained a modest producer of copper, iron, lead-zinc, manganese ores, and bauxite during 1994. However, by European standards, the country's output of petroleum was substantial despite a continuing decline caused by both the depletion of mineral resources and a lack of technology needed for increasing the recovery of petroleum. In 1994, industrial production apparently stabilized with the output of most minerals reaching and/or slightly exceeding levels achieved in 1993. This was in marked contrast to major downward shifts in output in 1990-92, which followed the political revolution in 1989 and the subsequent dissolution of rigid economic controls that had been imposed under the country's system of central economic planning. In 1994, the Government of Romania continued to promote policies aimed at developing a market-based economic system. Major activities in the country's minerals industry in 1994 included new increased facility utilization in the aluminum industry, rationalization programs for the steel sector, and the development of new capacities in Romania's salt mining operations.

Government Policies and Programs

The Government of Romania continued to rationalize and denationalize the country's industry, generally in accordance with guidelines developed by international financial institutions. The National Agency for the Privatization and Development for Small and Medium Sized Enterprises was the Government's designated sales agency. Formerly centralized state-owned enterprises were grouped into state-owned commercial companies, joint-venture enterprises with foreign participation, and the so-called "Regies autonomes." The designation "state commercial company" included small-to mid-sized enterprises that were to be in the process of denationalization. The "Regies autonomes" included utilities, such as telecommunications, electric power industry, postal services, and mass transportation; military industries; and mining and mineral industries. "Regies autonomes" were to continue to be owned and operated by the Government, but could lease or sell some assets to increase profitability. In 1994, the Government of Romania reportedly approved plans to restructure the country's steel and coal industries. Foreign joint-venture participation in these sectors reportedly would be encouraged.²

Environmental Issues

In Romania, primary environmental regulations, contained within the 1973 Law on the Environment (Law No. 9), outlined the basic provisions concerning the country's environmental protection. Many of the environmental protection provisions in this legislation generally had been considered too strict to be enforceable, especially those pertaining to ambient air quality standards. After 1989, the Government of Romania established the Ministry of the Environment (Law 264/1991, Ministerul Mediului); its principal responsibilities were to include enforcement of environmental regulations through inspections and levies of fees and fines. Given the current lack of comprehensive emission standards from industrial point sources of pollution, enforcement often has proved problematic. Additionally, effective inspections by agencies of the Ministry of the Environment were reduced further by the assessment of fines that reportedly were too low to be consequential.³ Although new comprehensive environmental legislation was reportedly in draft stages in late 1993, the adoption of the final form of the new law(s) were not available in 1994.

Production

In 1994, the production of most minerals in Romania appeared to have stabilized. The sharp curtailment of state subsidies to industry during the 1990-92 period, especially for purchases of energy that were significantly below world market prices, resulted in a radical readjustment of output goals of most of the country's mineral industries. In 1994, the output levels for most minerals reflected energy input prices that were more in accord with world market values. Additionally, shortages of foreign exchange required for imports of raw materials continued to adversely affect industry as well. In 1994, Romania's entire mineral industry continued to be owned and operated by the state either as directly government-owned entities or as state-controlled corporations or companies in the process of denationalization. (*See table 1.*)

Trade

According to trade data available for 1993, the value of exports of mineral products (industrial minerals and mineral fuels) amounted to US\$574 million, a slight increase

compared with those of 1992.⁴ Exports of mineral products to European Organization for Economic Cooperation and Development (OECD)-member countries amounted to about 51% of total exports from this category. Imports of "mineral products" amounted to US\$1.9 billion, a decline of about 7.7% compared with those of 1992. Romania's exports of metals (ferrous and nonferrous) in 1993 reached US\$959 million, an increase of about 30% compared with exports of the same category in 1992. Similarly, Romania's exports of metals to OECD countries amounted to about 25% of total exports from this category in 1993. The value of Romania's imports of metals in 1993 amounted to US\$278 million, a slight increase compared with those of 1992. About 52% of Romania's total imports of metals was obtained from OECD countries.

Structure of the Mineral Industry

The information provided in table 2 lists the names of administrative bodies as well as subordinate production units of the chief branches of the country's mineral industry. (*See table 2.*)

Commodity Review

Metals

Aluminum and Bauxite.—Romania operated both open pit and underground bauxite mines at Dobresti-Oradea. The Tulcea refinery exclusively produced metallurgical-grade alumina, while the Oradea refinery produced a small quantity of hydrated alumina in addition to the metallurgical-grade product; the country's only primary aluminum smelter was at Slatina in the southeastern part of the country. In 1994, Conef SA, Romania's state-owned nonferrous metals holding company, reported plans to restart operations of one of the two idle smelters at Alro SA's Slatina Aluminum Enterprise.⁵ The Slatina Aluminum Enterprise had an installed capacity of 150,000 metric tons per year (mt/a) from six potlines, each rated at 25,000 mt/a. In 1990, two of the enterprise's smelters were idled because of sharp reductions of electricity from the country's power grid. Reportedly, Slatina's operations have been modernized since 1990, which has allowed the aluminum enterprise to meet modern industrial standards.

Copper.—Copper was mined in the northeastern part of Romania that included mines at Baia Sprie, Cavnic, and Lesul Ursului, and in the southwestern part of the country, with major mines at Moldova Noua, Rosia Poieni, and Rosia Montana. Generally, the grade of ore was low, with major producing mines (Moldova Noua and Rosia Poieni) hosting ore grading about 0.35% copper or less. Concentrates from these areas have been smelted and refined at Baia Mare and Zlatna. Serious pollution problems continued to be associated with the country's copper and other metals sectors. The volume of fugitive flue and other gases at the Baia Mare

smelter reportedly continued to be severe, as was the volume of dust leaked into the environment. Although the country's total output of refined copper in 1994 increased by about 6% compared with that of 1993, domestic demand required additional imports of 8,000 metric tons (mt) of metal. To meet this demand, Conef SA reportedly conducted negotiations with foreign companies to toll smelt their ore at Romania's smelters in exchange for copper metal.⁶

Iron and Steel.—In March, the Government of Romania approved a reorganization plan for the country's steel industry for the 1994-2002 period. The general provisions of the plan envisage the reduction of steelmaking capacity from 17.8 million metric tons per year (Mmt/a) to 12 Mmt/a by 2002. Similarly, rolling mill capacities during this period would be reduced from 18.2 Mmt/a to 13 Mmt/a. Facilities scheduled for decommissioning considered too modern to demolish would be placed on a care and maintenance basis for possible future use. The cost of restructuring Romania's steel industry would be about US\$2.6 billion and by 2002 exports of steel reportedly would constitute about 49% of Romania's steel production.⁷ In early 1994, it was reported that officials representing Nippon and Kobe steel companies of Japan would visit Romania's Sidex SA and Galati SA integrated steelworks to complete detailed technical studies that would increase the efficiency of energy consumption at these facilities and also abate the pollution generated by them. Company officials and technical specialists from Japan visited Romania in late 1993 as part of a joint venture with Romanian interests to conduct detailed preliminary research at Galati's and Sidex' facilities.

Reportedly, Eurofer, the European Union's (EU) iron and steel federation, registered its concern to the EU's Commission about growing imports of steel from Romania and other Eastern European countries to the EU market.⁸ During the first quarter of 1994, Romania's exports of hot-rolled coil to the EU reportedly increased 20 times compared with the first quarter of 1993. Romania's exports of plate to the EU market also rose by about 2.7 times during this period.

Lead and Zinc.—Relatively low-grade ore was produced at underground mines in the Baia Mare, Borsa, Certej, and Rodna districts, grading from 0.4% lead and 0.6% zinc to 1.0% lead and 1.2% zinc. Moreover, Romania's lead and zinc ores also contained copper (0.35%), as well as associated antimony, bismuth, cadmium, gold, and silver. Owing to the complex mineralogy of the lead and zinc ores, concentrates produced from these ores were of uneven quality. Lead and zinc recovery in concentrate reportedly have ranged between 50% and 75% lead and zinc. In January, it was reported that Romplumb SA's lead smelter at Baia Mare in the Transylvania region was closed down following an accident that destroyed the plant's filters. The failure of the filters caused high levels of pollution in the region, resulting in 12 times the acceptable levels of cadmium and lead in the atmosphere.⁹

Uranium.—Romania's government-owned Rare Metals Enterprise has mined uranium underground in the Apuseni Mountains near Baita Bihor since 1980. Reportedly, total mine production in 1994 was about 125 mt of uranium oxide contained in 110,000 mt of ore. The country's production of uranium has been earmarked for use in at the Cernavoda nuclear powerplant upon completion. All of Romania's uranium ore was designated for shipment to the Feldiora Mill in Brasov for processing, which uses an alkaline-based circuit to produce a uranium concentrate with a 60% uranium content. The concentrate is further treated to produce a sintered uranium oxide that is suitable for fabrication into fuel.¹⁰

Industrial Minerals

Romania's extensive output of industrial minerals apparently was sufficient to meet most domestic needs. Barite, bentonite, diatomite, feldspar, graphite, gypsum, kaolin, and limestone, among others, were mined at about 60 deposits throughout the country. Industrial minerals were expected to play an increasingly more important role in the country's economy. The need to modernize the country's economy and infrastructure will increase demand for asbestos, cement, clays, dimension stone, and other industrial minerals.

In 1994, officials of Romania's salt-producing enterprise, Salrom SA, indicated that the country's exploitable resources of rock salt amounted to about 2,000 billion mt. Products associated with Salrom SA's salt mining operations included bentonite, chalk, and limestone. Reportedly, new investment in the salt mining sector was to include the opening of new mines at Ocnele Mari in Vicea County, with anticipated annual output of about 200,000 mt.¹¹

Mineral Fuels

Natural Gas and Petroleum.—According to industry spokespersons, total recoverable reserves of petroleum at deposits currently under exploitation in Romania amounted to about 206 Mmt, which would be sufficient to last more than 30 years at a production rate of 6.5 Mmt/a. It was believed that additional significant resources of both natural gas and petroleum could be found in structures at depths greater than 3,000 meters (m). Romania, perhaps the world's oldest petroleum producer, reached its apogee of both petroleum and natural gas production in 1976, when the country produced more than 14 Mmt of petroleum and 1.33 trillion cubic feet of natural gas. From 1976-89, Romania's output of both commodities had declined by reportedly more than 40%. The decline of production was attributed to depletion as well as to outdated oilfield technology.¹²

In April, the International Bank for Reconstruction and Development approved a US\$175.6 million loan to restructure Romania's natural gas and petroleum industries. The loan would be used to raise the output of natural gas and petroleum, improve environmental protection efforts, and

modernize the natural gas and petroleum transportation network.

Nuclear Energy.—Construction of Romania's Cernavoda nuclear powerplant continued in 1994. The first 685-megawatt (MW) Candu reactor unit was scheduled to begin operation in 1995. When the subsequent four 685-MW reactor blocks are completed, the Cernavoda power station would account for about one-third of the country's generated electric power. According to representatives of Romania's national electric company, approximately 250 domestic enterprises had contributed to the country's nuclear program. Both nuclear fuel and heavy water would be manufactured in Romania. Also, the country's uranium resources were reported to be sufficient to operate the Cernavoda nuclear powerplant for 30 years.

Reserves

In view of Romania's efforts to orient its economy to a market-based system, the country's mineral resources would have to be reevaluated from a market economy perspective. Reserves, as defined by market economies, are mineral deposits that can be mined at a profit under existing conditions with existing technology. In former centrally planned and other nonmarket economy countries, such as Romania, political directives to discover exploitable mineral resources may have resulted in possible overestimations and other distortions of collected field data.

Infrastructure

Romania's inland transportation system consisted of 85,798 kilometers (km) of railroads, highways, and inland waterways. The railroad system included 10,860 km of 1.435-meter-gauge track and 45 km of broad-gauge track; 3,411 km of track was electrified and 3,060 km was double track. The highway and road system consisted of 35,970 km of paved roads, 27,729 km of roads surfaced with gravel and crushed stone, and 9,100 km of unsurfaced roads. The country's inland waterways (Danube River) consisted of 1,724 km with riverine ports at Giurgiu, Drobeta-Turnu Severin, and Orsova. Seaports on the Black Sea coast were Braila, Constanta, Galati, and Mangalia. Romania's merchant fleet consisted of 262 ships with a total weight of 5,207,580 deadweight tons. Additionally, crude petroleum was carried in 2,800 km of pipeline, refined petroleum products in 1,429 km of pipeline, and natural gas in 6,400 km of pipeline.

Outlook

Low ore grades; severe environmental damage caused by the country's metals mining, processing, and smelting industries; and large-scale investments needed to modernize it have posed long-term problems for this sector of the country's mineral industry. However, the rationalization of

the country's existing economic structure would include the modernization of its infrastructure, giving added value and importance to the country's industrial minerals sector as well as an impetus to develop a more efficient steel industry. Also, the modernization of the country's potentially rich natural gas and petroleum industries could reduce substantially future imports of foreign mineral fuels.

¹Text prepared Aug. 1995.

²Metal Bulletin. May 16, 1994, p. 12.

³Fischer, D. Paradise Deferred: Environmental Policymaking in Central and Eastern Europe. Royal Institute of International Affairs. London, 1991, pp. 59-60. Also, World Bank Background Reports on the Romanian Environment Romanian Ministry of the Environment. National Report of Romania to the UNCED, United Nations Conference on Environment and Development, Brazil 1992 (Bucharest, July 1991).

⁴Anuarul Statistic al Romaniei 1994 (The Statistical Yearbook of Romania for 1994), Comisia Nationala Pentru Statistica, Bucharest, pp. 593-649.

⁵Mining Journal. Sept. 16, 1994, p. 195.

⁶Work cited in footnote 4.

⁷BBC SWB EEW/0323, Mar. 10, 1994, p. WB/2, from Rompress Bucharest, 1906 gmt, Feb. 1994.

⁸Metal Bulletin. May 9, 1994, p. 18.

⁹Mining Journal. Jan. 27, 1995, p. 53.

¹⁰_____. Feb. 10, 1995, p. 99.

¹¹BBC SWB EEW/0339, June 30, 1994, p. WB/5, from Rompres New Agency, Bucharest, 1117 gmt, June 20, 1994.

Major Source of Information

Ministerul Industriei (Ministry of Industry, consisting of Departments of Metallurgy, Mines, Geology, and Petroleum) Bucharest, Romania

Major Publications

Anuarul Statistic al Romaniei (Statistical Abstract of Romania). Revista de Statistica (Statistical Review, monthly).

TABLE 1
ROMANIA: PRODUCTION OF MINERAL COMMODITIES 1/2/

(Metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993	1994 e/
METALS					
Aluminum:					
Bauxite, gross weight	247,000 r/	200,000	175,000	186,000 r/	184,000 4/
Alumina, calcined, gross weight	440,000	310,000 r/	280,000	293,000	303,000 4/
Ingot including alloys:					
Primary	168,000 r/ e/	160,000 r/ e/	112,000	116,000	120,000 4/
Secondary	10,000 r/ e/	7,000	6,710	3,700	3,000 4/
Total	178,000 r/	167,000	119,000	120,000	123,000 4/
Bismuth, mine output, Bi content e/	40	55	50	40	40
Cadmium metal, smelter e/	40	10	10	10	-- 4/
Copper:					
Mine output, Cu content	32,000	26,400 r/	24,700 r/	25,300 r/	25,500
Metal:					
Smelter:					
Primary e/	27,300 4/	27,800 r/	23,400 4/	25,200	25,000
Secondary e/	1,000	1,000	1,000	1,000	1,000
Total	28,300 e/	28,800 r/	24,400	26,200	26,000
Refined:					
Primary e/	40,300 r/	29,800 r/	21,000	22,000 r/	22,100 4/
Secondary e/	4,000 r/	4,000 r/	3,080	3,000	4,600 4/
Total	44,300 r/	33,800 r/	24,080	25,000 r/	26,700 4/
Gold, mine output, Au content kilograms	3,000 r/ e/	3,000	3,700 4/	4,000	4,000 4/
Iron and steel:					
Iron ore:					
Gross weight thousand tons	2,000	1,460 r/	1,230 r/	855 r/	950 4/
Metal content do.	275 r/	199 r/	180	130	180
Metal:					
Pig iron do.	6,360 r/	4,540	3,110 4/	3,190 r/	3,500 4/
Ferroalloys: e/					
Ferromanganese	20,600	20,400	6,980	3,910	3,890 4/
Ferrosilicon	40,000 r/	30,000 4/	23,300 4/	23,600	27,900 4/
Ferromanganese	60,000 r/	40,000 4/	27,100 4/	16,400	31,300 4/
Ferrosilicomanganese	30,000	30,000 4/	28,200 4/	22,000	35,800 4/
Silicon metal	4,000 r/	1,000 r/ 4/	430	400	300
Steel:					
Crude thousand tons	9,760	7,130 r/	5,380	5,450 r/	5,570 4/
Semimanufactures:					
Pipes and tubes do.	1,040	627 r/	449 r/	414 r/	420
Rolled products do.	6,790 r/	5,160 r/	3,870 r/	4,090 r/	4,450 4/
Lead:					
Mine output, Pb content	25,100 r/	16,200	16,700 r/	16,900 r/	15,000
Smelter, primary	12,500	10,300	13,900	13,500	12,000
Lead:					
Refined:					
Primary	15,700 e/	13,200	14,400	11,800	22,000 4/
Secondary	5,000 e/	4,000	1,750	5,610	4,000 4/
Total	20,700	17,200	162,000	17,400	26,000 4/
Manganese:					
Ore, gross weight thousand tons	213	120 e/	100	125	137 4/
Concentrate: 5/					
Gross weight do.	40	20	15	15	28 4/
Mn content do.	10	5	4	4	6
Silver, mine output, Ag content	80 e/	80	73	70	70 4/
Zinc:					
Mine output, Zn content	36,000	26,300 r/	25,800 r/	28,000 r/	25,000
Metal, smelter, primary and secondary	11,500 r/	8,740 r/	11,600 4/	14,100	18,500 4/
INDUSTRIAL MINERALS					
Barite	65,000 e/	70,000	118,000	12,100	105,000 4/
Cement, hydraulic thousand tons	9,470 r/	6,690 r/	6,270 r/	6,240 r/	6,680 4/
Clays: e/					
Bentonite	150,000	150,000	120,000	120,000	100,000
Kaolin	250,000	250,000	200,000	200,000	150,000
Diamonds, synthetic industrial e/ thousand carats	3,000	3,000 4/	-- 4/	-- 4/	--
Diatomite	40,000 e/	30,000	14,500	9,970	10,100 4/
Feldspar	45,000 e/	40,000	27,700	87,700	10,400 4/
Fluorspar e/	12,000	12,000	15,000	15,000	15,000
Graphite	6,000 e/	6,000	2,300 4/	3,160	2,070 4/

See footnotes at end of table.

TABLE 1--Continued
ROMANIA: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1990	1991	1992	1993	1994 e/
INDUSTRIAL MINERALS--Continued					
Gypsum e/	800	800 r/	800	100	-- 4/
thousand tons					
Lime	3,030	2,330 r/	1,950 r/	1,740 r/	1,700
do.					
Nitrogen: N content of ammonia	1,790 r/	1,130 r/	1,430 r/	1,330 r/	-- 4/
do.					
Pyrites, gross weight	900 e/	900	965	560	560 4/
do.					
Salt:					
Rock salt e/	2,000 e/	1,000	966 r/	808	892 4/
do.					
Other	2,260 e/	2,260 r/	1,590 4/	1,380	1,310 4/
do.					
Total	4,260 r/	3,260 r/	2,560 r/	21,880	2,200
do.					
Sand and gravel e/	1,500	4,000	4,000 4/	4,400 4/	467 4/
do.					
Sodium compounds, n.e.s.:					
Caustic soda	552	461 r/	372 r/	330 r/	350
do.					
Soda ash, manufactured, 100%					
Na ₂ CO ₂ basis	632	471 r/	452 r/	371 r/	350
thousand tons					
Sulfur:					
S content of pyrites e/	350 r/	350 r/	385 4/	225	225
do.					
Byproduct, all sources e/	300 r/	250	200	200	200
do.					
Total e/	650 r/	600 r/	585	425	425
do.					
Sulfuric acid	1,110	745 r/	572 r/	527 r/	550
do.					
Talc	20,000 e/	10,000 e/	6,330	9,000	9,100 4/
do.					
MINERAL FUELS AND RELATED MATERIALS					
Carbon black	58,000	47,000 r/	27,000 r/	27,400	25,300 4/
do.					
Coal:					
Run of mine:					
Anthracite and bituminous	5,950	5,410 r/	5,620 r/	5,760 r/	5,500
thousand tons					
Brown	677	645 r/	622 r/	601 r/	450
do.					
Lignite	34,200	29,100 r/	35,000 r/	36,100 r/	36,000
do.					
Total	40,827	35,155 r/	41,242 r/	42,461 r/	42,000
do.					
Washed (produced from above):					
Anthracite and bituminous:					
For coke and semicoke production	1,350	953 r/	1,030	465	300
do.					
For other uses	3,100	2,880 r/	3,070 r/	3,760 r/	1,200
do.					
Brown	640	612 r/	610 r/	573 r/	330 4/
do.					
Lignite	33,100	28,000 r/	33,700 r/	35,000 r/	35,200 4/
do.					
Total	38,200	32,400 r/	38,400 r/	40,000	37,000
do.					
Coke:					
Metallurgical	3,700 e/	2,390 e/	2,640	2,400	2,660 4/
do.					
Other	242 r/ e/	300 e/	260	198 r/	-- 4/
do.					
Total	3,940 r/	2,610 r/	2,900 r/	2,600 r/	2,660
do.					
Fuel briquets (from brown coal) e/	500	450	400	70 4/	71 4/
do.					
Gas, natural:					
Gross:					
Associated	9,180	8,310 r/ e/	7,000 e/	7,000	7,000
million cubic meters					
Nonassociated	19,200	16,500 e/	15,100 r/ e/	14,300 r/ e/	15,000
do.					
Total	28,380	24,800 r/	22,100 r/	21,300 r/	22,000
do.					
Petroleum:					
Crude:					
As reported	7,930	6,790	6,620 r/	6,680 r/	6,600
thousand tons					
Converted	59,500	51,000	49,600	50,600	50,500
thousand 42-gallon barrels					
Refinery products	154,000	99,900 e/	95,000	95,000	100,000
do.					

e/ Estimated. r/ Revised.

1/ Includes data available through Mar. 1995.

2/ Previously published and 1994 data are rounded by the U.S. Bureau of Mines to three significant digits; may not add to totals shown.

3/ In addition to the commodities listed, antimony, asbestos, and a variety of crude construction materials are produced, and molybdenum may have been produced as a byproduct of copper from 1988 on; but output is not reported quantitatively, and available information is inadequate to make reliable estimates of output levels.

4/ Reported figure.

5/ Estimated series were based on published data on concentrate production.

TABLE 2
ROMANIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of Main facilities	Annual capacity
Alumina	Soc Com Alor SA	Plant at Oradea, near Hungarian border	250
Do.	Dept. of Nonferrous Metals	Plant at Tulcea, Danube Delta	270
Aluminum, primary	Alro SA (Slatina Aluminum Enterprise)	120 kilometers west of Bucharest	270
Barite	Ministry of Industry	Ortra mine, Rosia Montana, southwest of Cluj	100
Bauxite	do.	Oadea-Dobresti Mining Complex, near Hungarian border	350
Cement	Ministry of Industry	Tasca-Bicaz plant, near Piatra Neamt	3,000
Do.	do.	Cimpulung plant, about 60 km north of Pitesti	2,000
Do.	do.	Medgidia plant, west of Constanta	1,000
Do.	do.	Pieni plant, 20 km north of Tirgoviste	600
Coal:			
Bituminous	Ministry of Industry	Valea Jiului Mining Complex, near Hunedoara	10,400
Lignite	Ministry of Industry, Oltenia Mining Complex, including Rovinari Mining Enterprise	Jiu Valley, Oltenia County, north of Craiova	20,300
Do.	Ploesti Mining Complex	About 50 kilometers north of Bucharest.	8,700
Copper:			
Ore (concentrate)	Dept. of Nonferrous Metals	Baia mare, Baia-Sprrie, and Cavnic mines, northwest area near Ukraine's border; Rosia Montana, Noud, Borsa Balan, and Lesul-Ursului mines--in east-west arc along Carpathian range; Rosia Poieni mines; and Moldova Noua mines, southwest near Danubian border with Yugoslavia	180
Metal	Ministry of Industry Metallurgical enterprise for Nonferrous Metals	Baia Mare, in northwest near Ukraine's and Hungary's borders	35
Do.	do.	Zlatna smelter, Apuseni, in northwest Romania	13
Ferroalloys	Ferom-Joint Stock Co.	Complex at Tulcea	280
Iron ore	Ministry of Industry	Mining complex at Hunedoara, in west-central Romania	1,320
Do.	do.	Resita Mining Complex, southwestern Romania, near Yugoslav border	660
Do.	do.	Napoca-Cluj Mining Complex, northwestern Romania on the Somesul River	990
Lead in ore	do.	Baia Mare Mine, near Ukraine's and Hungary's borders	24
Do.	do.	Balan Mine, 50 km southwest of Piatra Neamt	10
Lead metal	Metallurgical Enterprise for Nonferrous Metals	Smelter at Copsa Mica, central Romania, on the Tirnava Mare River	42
Natural gas	million cubic feet per year Ministry of Petroleum and Gas	Tirgu Mures Field at Tirgu Mures, north-central Romania	996,000
Do.	do. Ministry of Industry, Dept. of Energy	Ploesti Field, 50 km north of Bucharest	249,000
Petroleum, crude	barrels per day Ministry of Industry, Dept. of Energy	Ploesti-Teleajen, Pitesti, and Tirgoviste Fields, in Prahova Valley around Bucharest; Bacau Field at Bacau, east-central Romania near the Siretul River; and West Carpathian Field, southeast Carpathian Range, between the west bank of the Olt River and Tirgu Jiu	250,000

TABLE 2--Continued
ROMANIA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1994

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies	Location of Main facilities	Annual capacity
Petroleum, refined	do. do.	Refineries at Brazil, Pitesti, Onesti, Barcau, Borzesti, Brasov, Cimpina, Darmanesti, Oradea, Ploesti, Teleajen, and Navodari	664,000
Steel	Ministry of Industry; Sidex SA Galati	Danube River, north of Brail, near the Ukrainian border	10,000
Do.	Siderurgica SA Hunedoara	West-central Romania, near Calan	4,000
Do.	CSR SA Resita	Southwestern Romania, about 20 km southwest of Caransebes	1,200
Do.	Siderica SA Calarasi	Near the Bulgarian border close to the Danube	600
Zinc in ore	Ministry of Industry, Baia Mare	Baia Mare, near Ukraine's and Hungary's borders	60
Zinc metal	Ministry of Industry, Metallurgical Enterprise for Nonferrous Metals	Imperial Smelter at Copsa Mica, Tirnava River, central Romania	66