THE MINERAL INDUSTRY OF

VENEZUELA

By Ivette E. Torres

The economy of Venezuela improved modestly after 2 years of decreases. The gross domestic product (GDP) increased by 2.2% after decreases of 2.5% and 3.3% in 1993 and 1994, respectively.[1] The increase was due to a strong performance of the oil and manufacturing sectors. However, inflation, as measured by the consumer price index, increased by 57% after a 46% in 1993 and a 71% increase in 1994. At yearend, the Bolívar was devaluated from 170 per U.S. dollar to 290 per U.S. dollar.

Government efforts to privatize public corporations continued to be slow, with only a couple of companies being privatized in 1995. The Government planned to privatize companies in transportation, telecommunications, banking, electric power, mining, cement, and steel. The slow progress in the Government's ability to privatize its industries has been attributed in part to the country's poor economic performance in recent years, high rate of inflation, increasing budget deficit, and price controls established in 1994. However, plans to privatize some units of Corporación Venezolana de Guayana (CVG), the Government's holding company for basic industries, were approved by Congress in 1995.[2] The Government announced that CVG's steel producer C.V.G. Siderúrgica del Orinoco C.A., aluminum smelters Aluminio del Caroní S.A. and Industria Venezolana de Aluminio C.A.(Venalum), bauxite and alumina producer C.V.G. Bauxalum C.A. (Bauxalum), C.V.G. Carbones del Orinoco and C.V.G. Venezolana de Ferrosilicio C.A. would be the first entities to be offered to the private sector. In May 1995, shares of those affiliates were transferred to the Venezuelan Investment Fund, the entity responsible for all privatization efforts in Venezuela. CVG, with almost 60 affiliate companies, was formed in 1960. The Government planned to use the revenue from the sale toward payment of its foreign debt. In 1995, Venezuela's public foreign debt was $26.1 billion. At yearend, even though CVG continued to be on the list of Government entities to be privatized, its priority within the group to be sold was uncertain.

The Government of Venezuela held preliminary talks with the International Monetary Fund (IMF) in 1995, but economic conditions, decreased fiscal reserves, and inflation forced the Government to consider terms that were followed by protests earlier in the decade when IMF loan terms were announced.

Venezuela's mining law dates back to 1945. For several years, the Government has been working on a new mining law that would attract investment for development of the country's mining sector, but the bill has not yet become law. As these efforts began, a number of international companies became interested in participating in Venezuela's exploration and development, particularly in gold. However, interest has been decreasing as tax structures within the new bill were considered uncompetitive.[3] In addition, the bill fails to provide protections for the companies to risk investment in the sector. According to *Mining Journal*, in the Bolívar State in the period of 1 year the number of companies exploring for gold decreased from 70 to 15.

During the year, the Ministry of Energy and Mines announced that it would review all 435 existing gold and diamond concession contracts previously negotiated by CVG after the Procuraduría General de la República (Office of the Attorney General) found them to be illegal. CVG had negotiated the contracts after the Ministry had delegated its authority to the Government company.[4] Reportedly, the Attorney General established that the previous two administrations gave private companies mineral rights over the land instead of concessions. In addition, the agreements failed to specify the level of taxation and other obligations as specified by article 13 of the Mining Law. Concessions offered to individuals were illegal because they were not approved by the Congress. While the Government tried to reassure the companies investing in the country, the absence of a new mining law, and the uncertainties created by possible reversals like the one affecting the concession, are reasons for foreign investors to proceed with great caution.

Venezuela is a significant producer of several mineral commodities. Even though petroleum, natural gas, and petroleum products continued to dominate the country's economy in 1995, and Venezuela's nonfuel mining industry contributed modestly to the country's GDP, Venezuela was an important producer of some nonfuel minerals. It was among the leading five world producers of bauxite and ranked eighth in the production of both alumina and aluminum. Venezuela also produced metal and metal products such as gold, iron ore, direct-reduced iron, steel, and ferroalloys. In the industrial mineral sector, Venezuela produced cement, diamonds, and many other mineral commodities. Venezuela's production of coal, still modest by world standards, was on the increase and the country was planning to expand its production significantly.

Venezuela's total exports were $18.3 billion in 1995, while total imports amounted to about $11.6 billion. Of the total, about 75% was from the oil sector. According to Central Bank statistics, nonoil exports totaled $4.5 billion, of which $234 million was from mineral products (1.3% of total exports). Exports of construction materials totaled $111.8 million and exports from the steel sector was $1.7 billion.

Venezuela's aluminum sector was controlled by the

Government, with a small percentage of ownership by the private sector. Bauxite and alumina were produced by Bauxalum, a new CVG company that resulted from merging the bauxite producer C.V.G. Bauxita Venezolana C.A. with the alumina producer Interalumina. Venalum, the aluminum smelter would become part of the group as the Government of Venezuela was preparing the sector to be the first of CVG affiliates to be offered to the private sector. It was believed that the Government planned to offer the companies plus the other aluminum smelter, Alcasa, as a block.

In 1995, production of bauxite increased by 17%. Alumina production increased by 26% and aluminum output increased by 8%.

Production of gold decreased by 28% to 7,259 kilograms. The low level of gold being sold to the Central Bank in 1995 is believed to be a direct result of the price controls imposed by the Government in 1994. Although traditionally a portion of the gold production has been sold in the black market, especially by small-scale, illegal miners, the decrease in official production in 1995 probably indicates an increase in sales in the black market. During the year, the Government began efforts to integrate the illegal, small-scale miners into the formal economy. Small-scale miners would be able to operate in designated areas of the country if they formed associations or cooperatives.[5] This action was taken after violent incidents increased in concession areas when illegal miners refused to abandon those areas. In September, CVG awarded gold concessions to six associations formed by small-scale miners in the southeastern part of Bolívar State.[6] According to CVG, 5,000 small-scale miners would benefit from this agreement. The accord would also indirectly benefit 7,000 additional people.

Interest in gold has decreased significantly because of economic, legislative, and administrative conditions that are not attractive to foreign investors, even as Venezuela lifted its monopoly on gold purchases[7] Even though many investors are still in Venezuela, and evaluations of exploration targets continued, some of the projects greatly anticipated by the sector are still on hold.

Las Cristinas, the most anticipated gold project in Venezuela with ore reserves of 233 million tons with 1.21 grams of gold per ton, which was originally scheduled for production in 1995, did not come on-stream during the year. A final decision to proceed with the project was postponed until 1996 by Placer Dome, the company with 70% interest in the project, with production to begin in 1998. One of the problems with Las Cristinas in 1995 was that the Ministry of Energy and Mines did not recognize the validity of the contract between Placer Dome and CVG, claiming jurisdiction over the contract.

Venezuela's largest private producer, Monarch Resources Ltd. (Monarch), produced 48,850 ounces (1,519 kilograms) from La Camorra mine in 1995.[8] Its production at the Revemin mill, 17,695 ounces (550.4 kilograms), decreased significantly from the 1994 level, reportedly due to lack of consistent higher grade feed. The company revised its annual production forecast to 90,000 tons of ore with a gold production of 50,000 ounces (1,555 kilograms). The company revised its reserves in January 1996 to reflect the recalculation of reserves in the upper zones due to the shorter strike length of the B zone, a lower than predicted grade for other upper zones, and lower estimates for the lower level zones. The remaining reserves were 354,000 ounces (11,011 kilograms) measured and indicated gold , 66,000 ounces (2,052 kilograms) of inferred gold, and 20,000 ounces (622 kilograms) of gold in other mineralization.

In November, the Government awarded Monarch a gold export license, the first to be awarded in Venezuela since the Government lifted the Banco Central's monopoly early in the year.

Production of iron ore in Venezuela increased by 6% in 1995. Venezuela was among the top 10 producers of iron ore in the world. Ferrominera del Orinoco C.A. (Ferrominera), a subsidiary of CVG, continued to be the sole producer of iron ore in Venezuela. In 1995, the company announced plans to invest $2.5 billion in 1996-2000.[9] Of the $2.5 billion, $325 million would be invested in the mining sector, $320 million would be invested in pelletization, and $1.85 would be invested in iron reduction technology. Ferrominera's proven reserves were 1.96 billion tons of high grade iron ore in 1991.[10]

Venezuela was the world's leading producer of direct-reduced iron (DRI), and it was the third largest producer of steel in Latin America, after Brazil and Mexico. Recently, Venezuela has developed a different strategy to expand its production capacity and improve its existing facilities in the iron and steel sector through the formation of joint ventures in which the Government will hold a minority interest.[11] In December, the Government of Venezuela approved a $600 million joint-venture project of Ferrominera and the Republic of Korea's Dongkuk Still Mill Co. Ltd., and Japan's Kobe Steel Ltd. to build a steel plant in Venezuela. Construction of the Guayana Steel Mill, with a production capacity of 1 million tons, was scheduled for construction in 1996.[12] That was just one of many joint-venture efforts planned by Ferrominera for the near future. Other efforts include the construction of two pellet plants with a capacity each of 4 million tons per year, and five DRI plants with a total capacity of 7 million tons.

In May, Anglo American Corp. of South America Ltd. (AMSA), a subsidiary of Minorco S.A., completed an 18-month feasibility study of the Loma de Hierro (also known as Loma de Nickel) nickel project in Aragua/Miranda States. The feasibility study defined an ore body with reserves of 40 million tons grading 1.5% nickel and 18.3% iron.[13] The proposed operation, an open pit mine and a ferronickel plant, would produce about 18,000 tons of nickel in ferronickel for the first 7 years of production, decreasing to about 16,000 tons per year for the remaining 20 years of the mine's life. The Government of Venezuela, through the Ministries of Mines and Energy and Environment, approved the project during the second part of the year. In 1995, the Loma de Hierro project was owned by Jordex Resources of Canada and Corporación Caracas of Venezuela (90%) and by AMSA (10%). In August, Jordex and Corporación de Caracas offered AMSA the opportunity to increased its share of the Loma de Hierro project to 85%. AMSA had 6 months to exercise that option.

Venezuela's cement industry is small by world standards. In Latin America, it ranks fourth after Brazil, Mexico, and

Colombia, although output is well below capacity. Production in 1995 was estimated to have increased slightly to 7 million tons. Venezuela's cement industry in recent years has changed dramatically. Ownership of most of its capacity has changed from the domestic private sector to the foreign private sector.[14] Venezuela's largest cement company with a clinker capacity of 5.3 million tons per year, C.A. Cementos de Venezuela is controlled by the Mexican cement company Cementos Mexicanos S.A. Lafarge (France) and Cementfabrik Holderbank AG (Switzerland) hold significant interest in four other companies. Consolidada de Cementos, C.A. (Conceca), with a clinker capacity of almost 1.6 million tons, was acquired by the Holderbank Group in early 1995. At the same time Cementos Caribe, C.A., with a clinker production capacity of about 1.1 million tons, became part of the Conceca concern.

The U.S. company Cargill, Inc. of Minneapolis, Minnesota, entered into a joint venture with Productora de Sal C.A (Produsal), a subsidiary of the Government-owned company Petroquímica de Venezuela S.A. (Pequiven) to produce 800,000 tons of solar salt at los Olivitos, Zulia State.[15] Pequiven had shared ownership of Produsal with Grupo Zuliano in a 40% to 60% joint venture. The company planned to begin commercial production at yearend 1996, achieving a 450,000-ton output level in 1998 for domestic consumption. Plans for production capacity call for exports to other Latin American countries through Pequiven.

Agip Spa, the Italian energy company, sold its 50% share of Carbones de Guasare S.A., which includes the Paso Diablo mine, in the Guasare coal basin in Zulia State to Ruhrkohle AG and Shell Coal International. Carbones de Zulia S.A., a Petróleos de Venezuela S.A. (PDVSA) company retained its 50% of the company. Carbones de Guasare estimates minable open pit reserves at 400 million to 500 million tons and 50 million tons of underground reserves.[16] The new owners continued with plans to increase the company's output to 18 million tons by 2001, including the output from Carbones de Socuy S.A. The plan called for $1 billion investment, which would include the expansion of Paso Diablo's output to 8 million tons per year and the development of the Socuy mine with a similar output level, with new port and railroad systems. Plans called for the Socuy mine to begin production at a smaller scale (1 million to 2 million tons) in 1997.[17]

Venezuela's 1995 official production of crude petroleum was 868 million barrels, close to its Organization of Petroelum Exporting Countries (OPEC) quota of 861 million barrels. However, several analysts have estimated production at anywhere between about 940 million barrels to 1,004 million barrels, about 8% to 16% higher than the OPEC quota and 9% to 17% higher than the official figure.[18] Production in 1994 had been 955 million. Venezuela was the leading supplier of petroleum and refinery products to the United States. It supplied about 19% of the U.S. net imports. U.S. imports of crude from Venezuela increased by about 11% from those of 1994.

Venezuela's oil company, PDVSA, was the third largest refiner in the world with a capacity of 2.4 million barrels per day with refining capacity in the United States, Sweden, Curaçao (leased), and Germany.[19] The company crude oil and natural gas reserves were 64 billion barrels and 140 trillion cubic feet, respectively.

In July, the Congress approved a major step in the opening in the oil sector to exploration and production of light and medium crude to qualified foreign companies in partnership with the Government. Corporación Venezolana de Petróleo, would be PDVSA's representative in the joint-venture, profit-sharing partnerships. Venezuela's oil sector had been slowly opening to the private sector with previous participation in exploration of marginal fields and heavy crude. In 1995, Conoco Inc., a subsidiary of Dupont Co., and Maraven, a subsidiary of PDVSA signed a $1.7 billion agreement to convert heavy crude from the Orinoco belt to produce 100,000 barrels per day of light synthetic crude. Conoco also signed an agreement to produce Orimulsion, a 70% bitumen-30% water power plant fuel, in partnership with Bitúmines Orinoco S.A. (BITOR), Norway's Statoil, and a group formed by two Venezuelan engineering firms, Jantesa and Distral Térmica.[20] BITOR has long-term contracts to sell Orimulsion to Canada, Denmark, Lithuania, Japan, the United Kingdom.

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[1]Latin America Economy & Business, Mar. 1996, p. 5.
[2]U.S/Latin Trade, Sept. 1995, p. 25.
[3]Mining Journal, London, Dec. 8, 1995, p. 430.
[4]Latin American Economy and Business, Aug. 1995, p. 27.
[5]Mining Journal, London, June 30, 1995, p. 479.
[6]———. London, Sept. 22, 1995, p. 213.
[7]American Metal Market, Apr. 5, 1995, p. 9.
[8]Monarch Resources Ltd., Press Release, Apr. 23, 1996.
[9]Mining Journal, Nov. 10, 1995, p. 347.
[10]Venezuela's Mining Industry, Venezuela's National Council for Investment Promotion, Feb. 1995, p. 16.
[11]Siderurgia Latinoamericana, Jan.-Feb. 1996, p. 18.
[12]American Metal Market, June 22, 1995, p. 6.
[13]The Northern Miner, May 25, 1995.
[14]Duarte, Andrés, International Cement Review, Dec. 1995, p. 16.
[15]Chemical Week, Oct. 4, 1995, p. 16.
[16]Financial Times, July 5, 1996, p. 28.
[17]Mining Magazine, June 1995, p. 347.
[18]World Oil, Feb. 1996, p. 91.
[19]Energy Information Administration, International Petroleum Statistics Report, Feb. 1996, p. 4.
Oil & Gas Journal, Aug. 21, 1995, p. 44.
[20]The Wall Street Journal, June 1, 1995, p. A4.

Major Sources of Information

Dirección General Sectorial de Hidrocarburos
Ministerio de Energía y Minas
Caracas, Venezuela

Dirección General Sectorial de Minas
Ministerio de Energía y Minas
Caracas, Venezuela

TABLE 1
VENEZUELA: PRODUCTION OF MINERAL COMMODITIES 1/

(Thousand metric tons unless otherwise specified)

Commodity		1991	1992	1993	1994	1995
METALS						
Aluminum:						
Alumina		1,300	1,310	1,500	1,300	1,641
Bauxite	metric tons	1,990,000	1,050,000	2,910,000	4,419,173 r/	5,183,827
Metal, primary, unalloyed	do.	601,000	561,000	568,000	585,445 r/	629,828
Gold, mine output, Au content	kilograms	4,220	7,550	8,899	10,094 r/	7,259
Iron and steel:						
Iron ore and concentrate		21,200	18,100	16,871	18,318	19,484
Metal, Direct-reduced iron		4,020	4,230 r/	4,510	4,710	4,720
Ferroalloys:						
Ferromanganese		1	9	--	-- e/	-- e/
Ferrosilicomanganese		31	32	42	40 e/	40 e/
Ferrosilicon 2/		54	40	47	41	40 e/
Total		86	81	89	81 e/	80 e/
Steel, crude		3,315 r/	3,489 r/	3,392 r/	3,524	3,634
Semimanufactures, hot-rolled		2,210	2,450	2,560	2,390	3,080
Lead, secondary, refined	metric tons	15,000	15,000 e/	14,000 r/	15,000	16,000 e/
INDUSTRIAL MINERALS						
Amphibolite		212	200	--	50 r/	66
Cement, hydraulic		6,340	6,590	6,840	6,927	7,000 e/
Clays:						
Kaolin		39	41 r/	32 r/	10 r/	3
Other		2,750	1,630	1,920	2,434 r/	3,380
Diamond:						
Gem	carats	102,000	302,000	145,000	202,868 r/	229,016
Industrial	do.	112,000	176,000	155,000	214,311 r/	63,936
Total	do.	214,000	478,000	300,000 r/	417,179 r/	292,952
Feldspar		138	169	220	135 r/	170
Gypsum		244	175	224	135 r/	135
Nitrogen, N content of ammonia		450	404	535	505	600
Phosphate rock		162	10	--	98 r/	86
Pyrophyllite e/		32	32	32	32	32
Salt, evaporated	metric tons	430,000	318,000	370,000 e/	400,000 e/	350,000 e/
Serpentinite, crushed e/		550	550	550	550	550
Stone, sand and gravel:						
Stone:						
Dolomite		300 e/	275	250	300	300
Granite		370	47	195	264 r/	236
Limestone		11,400	14,300	12,654 r/	11,687 r/	12,233
Marble		--	134	--	--	--
Sand and gravel		4,608	4,940	5,030	4,165 r/	4,629
Silica sand		343	703	753	141 r/	598
Sulfur, petroleum byproduct		155	155	135	158 r/	180
MINERAL FUELS AND RELATED MATERIALS						
Carbon black e/		60	60	60	60	60
Coal, bituminous		2,696 r/	2,479 r/	3,958 r/	4,628	4,700 e/
Gas, natural:						
Gross	million cubic meters	42,300	43,400	42,500	44,487 r/	45,000 e/
Marketed e/	do.	15,000	15,000	15,000 3/	15,100	15,000
Natural gas liquids: 4/						
Natural gasoline	thousand 42-gallon barrels	8,190 e/	18,600	7,900	11,300 e/	11,300 e/
Liquid petroleum gas	do.	33,300 e/	74,500	38,800	49,275 r/	50,000 e/
Total	do.	41,490 e/	93,100	46,700	60,575 r/	61,300 e/

See footnotes at end of table.

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

(Thousand metric tons unless otherwise specified)

Commodity		1991	1992	1993	1994	1995
MINERAL FUELS AND RELATED MATERIALS--Continued						
Petroleum:						
Crude	do.	872,000	907,000	816,000	955,351 r/	868,153
Refinery products:						
Liquified petroleum gas	do.	3,000 e/	3,500 e/	2,920	3,290	3,300 e/
Gasoline:						
Aviation	do.	350	300 e/	64 e/	--	--
Motor	do.	115,000	105,000 e/	68,900	68,800	70,000 e/
Naphtha e/	do.	6,000	12,000	58,000 3/	50,500	51,000
Jet fuel	do.	28,100	29,000 e/	28,500	27,700	28,000 e/
Kerosene	do.	803	1,000 e/	999	--	500 e/
Distillate fuel oil	do.	107,000	100,000 e/	104,000	93,800	94,000 e/
Lubricants	do.	2,950	2,950 e/	3,320	2,750	2,800 e/
Residual fuel oil	do.	107,000	105,000 e/	102,000	96,400	97,000 e/
Asphalt and bitumen	do.	9,040	10,000 e/	8,230	10,300	10,500 e/
Refinery fuel gas e/	do.	9,100	9,000	27,900 3/	9,000	9,000
Unspecified e/	do.	1,210	1,500	1,240	2,320 3/	2,400
Total e/	do.	389,553	379,250	406,073	364,860	368,500

e/ Estimated. r/ Revised.
1/ Table includes data available through Aug. 1996.
2/ Figures represent combined 45%-silicon-content and 75%-silicon-content production.
3/ Reported figure.
4/ From nonassociated gas only.

TABLE 2
VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY FOR 1995

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina		C.V.G. Bauxalum C.A. (Government, 88.7%; Aluminio Suizo S. A. , 11.3%)	Ciudad Guayana, Bolívar State	2,000
Aluminum		Aluminio del Caroní S. A. (Alcasa) (Government, 82%; Reynolds International, Inc. 8%)	do.	300
Do.		Industria Venezolana de Aluminio C. A. (Venalum) (Government, 80%; Six Japanese companies, 20%)	do.	366
Bauxite		C.V.G. Bauxalum C.A.	Los Pijiguaos, Bolívar State	6,000
Cement		C. A. Venezolana de Cementos (Vencemos) (CEMEX)	Barquisimeto, Lara State; Maracaibo, Zulia State; Pertigalete, Anzoátegui State	(clinker) 5,265
Do.		C.A. Fábrica Nacional de Cementos (46.13% Lafarge)		(clinker) 1,770
Coal		Carbones del Guasare S. A. (Carbones de Zulia S.A., owned by PDVSA)	Paso Diablo, Zulia State Guasare coal basin	4,000
Gold	kilograms	Revemin (Monarch, 51%, C.V.G., 49%)	El Callao, Bolívar State	(mill) 900
Do.	do.	Crystallex de Venezuela C.A. (100% Crystallex International Corp.)	Albino mine, Kilometro 88, Bolívar State	(mill) 1,500
Do.		Las Cristinas (Placer Dome 70%; C.V.G. 30%)	Kilometro 88, Bolívar State	new
Iron ore		C.V.G. Ferrominera del Orinoco C. A. (Government, 100%)	Cerro Bolívar, El Pao, Los Barrancos, and San Isidro mines, Bolívar State	20,000
Iron ore pellets		do.	Ciudad Guayana, Bolívar State	3,300
Nickel		Jordex Resources and Corporación de Caracas, 90%; Anglo American of South America, 10%)	Loma de Hierro, Aragua/Miranda States	new
Petroleum:				
Crude	million 42- gallon barrels	Petróleos de Venezuela S.A. (PDVSA) (Government, 100%)	Fields in Anzoátegui, Apure, Falcón, Guárico, Monagas, and Zulia States	1,100
Refinery products	do.	do.	Major refineries at Amuay Bay and Cardón, both in Falcón State	400
Steel		C.V.G. Siderúrgica del Orinoco C.A. (Sidor) (Government, 100%)	Ciudad Guayana, Bolívar State	4,300