



# 2008 Minerals Yearbook

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## VENEZUELA

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# THE MINERAL INDUSTRY OF VENEZUELA

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In 2008, Venezuela remained highly dependent on oil revenues, which amounted to about 30% of its gross domestic product (GDP) of \$368.6 billion based on purchasing power parity, about 90% of its export earnings, and about 50% of its Federal budget revenues. Fueled by high oil prices, record Government spending helped to increase the GDP by nearly 6% in 2008 compared with about 8% in 2007. This spending, combined with recent minimum wage hikes and improved access to domestic credit, created a consumption boom that came at the cost of higher inflation, which was more than 30% in 2008 compared with about 20% in 2007. Imports also increased significantly. However, declining oil prices in the latter part of 2008 undermined the Government's ability to continue the high rate of spending. Venezuela accounted for 2.9% of the world's bauxite output, 3% of alumina production, 1.4% of aluminum output, and 1.2% of nickel output in 2008. The Venezuelan Government oil company—Petróleos de Venezuela S.A. (PDVSA)—was a cofounder of the Organization of the Petroleum Exporting Countries (OPEC) and is an important player in the global crude oil market (table 1; Banco Central de Venezuela 2009a, b; Bray, 2009a, b; Kuck, 2009; Petróleos de Venezuela S.A., 2009a; U.S. Central Intelligence Agency, 2009; U.S. Department of State, 2009).

## Minerals in the National Economy

The Venezuelan Government dominated an increasing part of the economy as a result of ongoing nationalizations of private entities. In 2008, the country's leading mineral resources included, in order of value, petroleum, natural gas, coal, iron ore, gold, diamond, and bauxite. Petroleum activity accounted for 12.2% of Venezuela's GDP compared with 13.8% in 2007. Manufacturing accounted for 16.5% of the GDP; construction, 6.9%; and mining, 0.6%. Without a sustained increase in crude oil prices, Venezuela's economy was expected to stall or contract during 2009-10, especially after the expected spending cuts that the Government announced in early 2009. Venezuela's economic growth had already slowed to 4.9% in 2008 after years of rapid expansion, and many economists forecast that it would turn negative in 2009 (Banco Central de Venezuela, 2009b; Daniel, 2009; Petróleos de Venezuela S.A., 2009b).

## Government Policies and Programs

Under the Venezuelan Constitution, the mineral and hydrocarbon resources belong to the state. The mining law (Decree No. 295 of September 5, 1999) establishes the rules for all mines and minerals (except hydrocarbons and some industrial minerals not found on Government lands) within Venezuelan territory. These rules influence the exploration, development, production, marketing, and transportation of minerals. The Ministerio del Poder Popular para las Industrias Básicas y Minería (MIBAM) is responsible for all matters related to

mining operations. Mining is allowed by the Government through concessions, or under production authorization issued to artisanal miners, mining cooperatives, and other small-scale mining operations. The General Regulation of the Mining Law (Decree No. 1234 of March 9, 2001) establishes terms, conditions, and administrative procedures in support of Decree No. 295. Most industrial minerals found on private lands continue to be governed by Articles 7 through 10 of the Mining Law of 1945 until the individual States establish regulations (C.V.G. Compañía General de Minería C.A., 2009).

The Ministerio del Poder Popular para la Energía y Petróleo (MPE) (formerly the Ministerio de Energía y Minas) manages the natural gas and oil sectors. The hydrocarbon law, known as the Decree with Force of Organic Law on Hydrocarbons (Decree No. 1510 of November 2001), and Article 302 of the Constitution of 1999, reserve all primary hydrocarbon activities for the Government. The hydrocarbon law was amended in 2006 by the Partial Amendment Law to Decree No. 1510 with Force of Law, Organic Law of Hydrocarbons. Nonassociated gas (natural gas that is not produced simultaneously with crude oil) and downstream natural gas operations are excluded from the hydrocarbon law; they are regulated instead by the Decree with Rank and Force of Organic Law on Gaseous Hydrocarbons (Decree No. 310 of September 1999) and by the Regulation of the Law on Gaseous Hydrocarbons (Decree 840 of June 2000), as amended by the MPE's Resolution 244 of January 9, 2006 (Petróleos de Venezuela S.A., 2009a).

The Norms of Environmental Evaluation of Activities Susceptible to Degrade the Environment (Decree No. 1257 of 1996) establishes the Ministerio del Poder Popular para el Ambiente (Minamb). The law requires an environmental impact study for projects and operations in the areas of hydrocarbons and mining. The Minamb and the MPE implement Decrees No. 1510 and No. 1257 through the "Ley Orgánica del Ambiente" (Ministerio del Poder Popular para el Ambiente, 2009; Petróleos de Venezuela S.A., 2009a).

In the spring of 2008, the Government announced the nationalization of the cement and steel industries. In 2005, the Government of Venezuela had declared that the terms of the existing operating service agreement (OSA) contracts were illegal under the Constitution of 1999. The Corporación Venezolana de Petróleo, S.A. (CVP), a PDVSA affiliate, subsequently initiated negotiations to restructure the OSA contracts, the profit-sharing agreements, and the four strategic associations that were managed by the CVP as joint ventures (Empresas Mixtas) in which, in most cases, the Government's interest would increase to 60%. In 2008, owing to the Venezuelan Government's nationalization drive, foreign investors, such as ENI S.p.A. of Italy, Statoil ASA of Norway, and Total S.A. of France, entered into joint ventures with majority government ownership. Two U.S. companies, ConocoPhillips Co. and Exxon Mobil Corp., decided to cease operations in Venezuela and filed for international arbitration.

The Government also announced its intention to nationalize the Banco de Venezuela (one of the country's largest private banks) in July 2008 (Ministerio del Poder Popular para la Energía y Petróleo, 2008).

On August 18, 2008, Holcim Ltd. and PDVSA, acting on behalf of the Venezuelan Government, signed a memorandum of understanding (MOU) in which (in accordance with the Nationalization Decree) they pledged to proceed to negotiate an agreement that would effect the transfer from Holcim to PDVSA of 85% of the shares (valued at \$552 million) in Holcim (Venezuela) S.A. In accordance with the MOU, the parties proceeded to negotiate the terms of a share purchase agreement, but in October 2008, the Venezuelan Government ceased to communicate with Holcim. No agreement was signed, and Holcim received no compensation for the expropriated assets. Holcim intended to seek relief in the form of compensation equivalent to the full fair market value of all assets at the time of the nationalization of its subsidiary Holcim (Venezuela). Cementos Mexicanos S.A. de C.V. (Cemex) initiated arbitration proceedings against the Government of Venezuela in December after the Government rejected its request for compensation of \$1.3 billion. Cemex owned 50% of Venezuela's cement industry, and Holcim and the French company Lafarge, which were also nationalized, owned equally the remaining 50% (Holcim Ltd., 2009; Pearson, 2009; Petróleos de Venezuela S.A., 2009a).

## Production

In 2008, Venezuela's leading mineral resources included, in order of value, petroleum, natural gas, coal, iron ore, gold, diamond, and bauxite. Venezuela's most recent response to the U.S. Geological Survey's Minerals Questionnaire was in the 2003-04 period. Production data for most of the minerals given in table 1, including cement, gold, iron ore, and silica sand, are estimated. Since 2004, gross natural gas production had been about 60 billion cubic meters per year, whereas crude oil production decreased by about 1.4% (table 1).

## Structure of the Mineral Industry

The Government-owned mineral and industrial producer Corporación Venezolana de Guayana (CVG), its subsidiary companies, and the Instituto Nacional de Geología y Mina were units of MIBAM. In 2005, the Government formed the Compañía Nacional de Industrias Básicas, which was a holding company for several state-owned mineral companies through which the Government participated in production operations in the aluminum, iron ore, lime, and steel industries, as well as the natural gas, petroleum, and sulfur industries. PDVSA, which was responsible for the development and management of the hydrocarbon sector, produced about 70% of the national output of crude oil. The CVP had managed the Government's 32 OSA with such transnational oil companies as BP p.l.c. of the United Kingdom and Chevron Corp. of the United States and the 8 risk-/profit-sharing agreements that accounted for about 20% of Venezuelan crude oil production in 2008. CVP also managed four strategic associations that produced and processed extra-heavy crude oil and accounted for about

10% of the total national output of petroleum. Multinational companies dominated the cement, nickel, and steel sectors. Many companies in the coal, iron, synthetic crude oil (processed heavy crude oil), and steel sectors were owned by joint ventures of the Government and the private sector, such as Kobe Steel and Mitsui and Co. Ltd. of Japan (table 2).

## Mineral Trade

PDVSA was one of the leading exporters of petroleum to the United States. The state-owned company had proven reserves of about 79 billion barrels (Gbbbl) of oil (the largest outside of the Middle East), and about 4.1 trillion cubic meters of natural gas. PDVSA's exploration and production take place in Venezuela, but the company also has refining and marketing operations in the Caribbean, Europe, and the United States. PDVSA's subsidiary CITGO Petroleum supplies gasoline to some 8,000 U.S. retail outlets. PDVSA also makes Orimulsión®, a coal alternative made from bitumen. As part of a nationalization drive, in 2007 the company took control of 32 oilfields run by private—including foreign—enterprises.

Venezuela enjoyed economic benefits from its mineral industry, which included the significant contribution the petroleum sector made to the country's trade balance. In 2008, the country's exports amounted to \$103.5 billion; its mineral exports included, in terms of value, petroleum (\$62.5 billion), bauxite and aluminum, steel, cement, chemical products, iron ore, and other products. Its leading export partners were the United States (42.7%), the Netherlands (8%), Mexico (4.5%), Colombia (4.5%), and China (3.1%). Its imports amounted to \$53.5 billion of consumer goods, machinery and transport equipment, manufactured goods, and construction materials. Its leading suppliers were the United States (26.6%), Colombia (13.5%), Brazil (9.5%), China (6.7%), Mexico (5.2%), and Panama (5%). In 2008, bilateral trade between Venezuela and the United States amounted to \$70 billion. Venezuelan exports to the United States were \$56 billion (accounting for at least 60% of total Venezuelan exports), and U.S. exports to Venezuela were \$14 billion (or 22% of total Venezuelan imports). The United States was the single most important customer for Venezuelan oil. Venezuela shipped an average of approximately 1.4 million barrels per day of crude oil and petroleum products to the United States, which accounted for at least 50% of Venezuelan oil exports and 10% of U.S. oil imports. Multinational companies dominated the cement, nickel, and steel sectors (Petróleos de Venezuela S.A., 2009a).

## Commodity Review

### Metals

**Gold.**—The gold activity in Venezuela was located in the State of Bolívar. Until September 30, 2008, Crystallex International Corp. of Canada produced gold from the Tomi and Lo Increible Mines (the latter includes La Victoria deposit), and the Revemin mill, all of which are located in El Callao, Bolívar State. Crystallex produced approximately 622 kilograms (kg) of gold in 2008 from these operations. After September 30, 2008,

Crystallex ceased mining at its El Callao operations. The Revemin mill was transferred to CVG Minerven and Crystallex began negotiating the transfer of El Callao mining properties to the state mining company. Crystallex's principal asset was its interest in Las Cristinas gold development project, which is located in the Kilometro 88 area of the State of Bolivar. Crystallex expected to commence gold production in the second half of 2009 at a base level of 20,000 metric tons per day of gold ore, which would amount to about 7,962 kilograms per year of gold at a total cash cost of \$7,845 per kilogram (\$244 per troy ounce) (Crystallex International Corp., 2009).

State-owned C.V.G. Compañía General de Minería C.A. (CVG Minerven) reported production of 4,050 kg of gold in 2008 compared with 4,030 kg of gold in 2007. CVG Minerven operated the Colombia and the Union gold mines. On July 8, 2008, Hecla Mining Co. of the United States sold its wholly owned subsidiaries and operations in Venezuela. Similarly Gold Fields Ltd. of South Africa sold its Venezuelan assets during 2008 (C.V.G. Compañía General de Minería C.A., 2009; Gold Fields Ltd., 2009).

### ***Mineral Fuels and Related Materials***

**Coal and Uranium.**—In 2008, the Carbones del Guasare, S.A. used the truck-shovel system to access about 175 million metric tons (Mt) of coal reserves in the Guasare coal basin. The Paso Diablo coal mine, which is located in the State of Zulia, was owned by the Government-owned company Carbozulia, S.A. (49%); Peabody Energy Corp. of the United States (25.5%); and Anglo Coal (25.5%). Peabody marketed its share of the mine's production (about 7.5 million metric tons per year) to customers seeking high-Btu, low-sulfur thermal coal for electricity generation and coal to be used in the steel industry. The coal mine (Mina Norte), which is located in El Brillante, Municipality Paez, State of Zulia, was operated by the joint-venture of Carbomar Corp. (64%) and Carbozulia, S.A. (36%) (Carbozulia, S.A., 2009; Peabody Energy Corp., 2009).

The Government continued to express an interest in developing a coal-powered electricity-generating plant to provide additional electricity to the national electricity grid; much of the grid's power was generated by hydroelectric plants. The Government had discussed the possibility of building a nuclear-powered electricity-generating plant with Argentina, Brazil, France, Iran, and Russia. France was willing to assist Venezuela's development of a nuclear power program (International Herald Tribune, 2008). An agreement on minerals between Iran and Venezuela could involve the production and shipment to Iran of Venezuelan uranium to be produced eventually from deposits located in the jungle states of Amazonas and Bolivar, which supposedly contain about 50,000 t of uranium reserves (Paxety, 2006). Russia and Venezuela were planning to sign an agreement to cooperate on the development of nuclear power, including power generated from nuclear energy, and on oil and gas technology (RIA Novosti, 2008).

**Natural Gas.**—In 2008, natural gas production remained at about the same level as that of 2007 (28,500 million cubic meters). According to the U.S. Energy Information

Administration, Venezuela has the second ranked natural gas reserves (4.8 trillion cubic meters) in the Western Hemisphere behind the United States (6.1 trillion cubic meters). The petroleum sector consumed more than 70% of Venezuela's natural gas production in the form of reinjected gas to produce crude oil. In recent years, Venezuela had several natural gas projects planned or underway. The Antonio Recaurte 224-kilometer gas pipeline would connect western Venezuela to Colombia's Punta Ballenas gasfields (U.S. Energy Information Administration, 2009).

Venezuela planned to export its natural gas supply to domestic, regional, and world consumers. Much of current natural gas production was associated with crude oil production, however, and a significant proportion of produced natural gas is reinjected into oilfields to maintain reservoir pressure. Proposed natural gas projects included the development of the offshore nonassociated natural gas resources in the Plataforma Deltana area, which is located south of Trinidad and Tobago in the Atlantic Ocean; the development of natural gas resources in the Gulf of Venezuela and the State of Falcon; the construction of the Center West Interconnection Project gas pipeline; and the construction of the Gran Mariscal de Ayacucho industrial complex and the Mariscal Sucre LNG plant (Trenas, 2005).

According to Chevron, total daily production in 2008 from all Chevron's producing areas in Venezuela averaged 268,000 barrels (bbl) of liquids and 3.5 cubic meters (125 million cubic feet) of natural gas. The company's net oil-equivalent in 2008 averaged 66,000 barrels per day (bbl/d). That production came from three areas in the Boscan Field, which is located onshore in western Venezuela and was operated by Petroboscan (an affiliate of PDVSA), in which Chevron held a 39.2% interest. Petroboscan's total daily production averaged 103,000 bbl of liquids and 0.5 million cubic meters (17 million cubic feet) of natural gas. In 2008, 11 wells were drilled. Nine were completed and put into production by the end of the year. Chevron was a 25.2% owner of its affiliate Petroindependiente, which operated the LL-652 field in Lake Maracaibo. During 2007, Petroindependiente's total daily production averaged 6,000 bbl of liquids and 1.8 million cubic meters (63 million cubic feet) of natural gas. Chevron had a 30% interest in Petropiar, which operated the Hamaca project. The project was located in Venezuela's Orinoco Belt and had a daily total design capacity for processing and upgrading 190,000 bbl of extra-heavy crude oil into 180,000 bbl of lighter, higher-value synthetic crude oil. In 2008, total daily production averaged 159,000 bbl of liquids and 1.3 million cubic meters (45 million cubic feet) of natural gas.

Chevron signed a framework agreement in September 2008 with PDVSA that provided Chevron with a 10% interest in Venezuela's first liquefied natural gas train. The project was scheduled to be supplied with gas from the 60% owned and operated Block 2, which is located in the offshore Plataforma Deltana region in eastern Venezuela. Chevron also operated and had a 100% interest in Block 3 and a 100% owned and operated interest in the Cardon III Block, north of Lake Maracaibo in the Gulf of Venezuela. Seismic data from this block, which has natural-gas potential, was analyzed in 2008. Drilling was planned to begin on an exploration well in the first half of 2009 (Chevron Corp., 2009).



**Petroleum.**—PDVSA controls the petroleum sector. According to PDVSA, as of December 31, 2008, Venezuela had the world's largest crude oil reserves, which amounted to 316 Gbbl; of that amount, 172.3 Gbbl were proven reserves. To increase crude oil refinery capacity in Venezuela, PDVSA planned to build new refineries, including investing \$18 billion in the Cabruta, which would have a capacity of 400,000 bbl/d of extra-heavy crude; the Batalla de Santa Inés (50,000 bbl/d); and the Caripito (50,000 bbl/d, for asphalt). With these three new refineries and the improvement of the existing ones, PDVSA's processing capacity in Venezuela would be increased to 700,000 bbl/d by 2012. BP and Chevron were interested in the upcoming (2010) bidding in the Orinoco Oil Belt. In November 2008, Venezuela and Russia signed a cooperation agreement to promote the development and operation of a joint-venture oil project in Block Junin 6 of the Orinoco Oil Belt (Alexander's Gas & Oil Connections, 2009; Petróleos de Venezuela S.A., 2009a).

According to BP, at the initiative of the Venezuelan Government, all exploration and production projects that were currently operated by privately owned companies under service agreements were required to be incorporated into joint ventures. PDVSA would hold the majority share in each joint venture. BP Venezuela subsequently became a shareholder in two of these joint ventures, Petroperijá and Petróleos de Boquerón. BP also became a partner in the 110,000-bbl/d Petromonagas (formerly Cerro Negro) joint-venture project, which has gross reserves estimated to be in excess of 1.2 Gbbl of equivalent oil (BP p.l.c., 2009).

## Outlook

Venezuela's economic prospects remain highly dependent on oil prices and the export of petroleum and derivatives. The country remains a leading supplier of crude oil and refined petroleum products to the United States. Natural gas will be incorporated into the country's energy supply, but Venezuela also expects eventually to pursue future offshore gas developments in the Deltana Platform off the coast of eastern Venezuela and in the Paraguana Peninsula in the northwestern area of the country. The country's recent nationalizations and an uncertain macroeconomic environment characterized by high inflation could lead to reduced levels of private investment. The economy is expected to contract given the decrease in petroleum prices. In 2009, the Government has forecasted 6% GDP growth and 15% inflation. Venezuela's inflation rate, which is the highest in Latin America, has slowed in recent months as the cost of food imports has decreased, but it is still seen as likely to be higher than the Government's forecast (Daniel, 2009).

The possible integration of the Caribbean, Central American, and South American economies would include the construction of infrastructure to deliver oil and natural gas throughout the region. This integration could give Venezuela a significant advantage in marketing petroleum and natural gas in the region in the long term. The Government also plans to encourage additional development of hydrocarbon resources. The Government has proposed increasing its production of crude petroleum to 5.8 million barrels per day by 2012, subject to the

OPEC production constraints; to build new crude oil refineries at Cabruta and Llanos de Barinas (Batalla de Santa Inés); and to build an asphalt plant at Caripito (Petróleos de Venezuela, S.A., 2009a, b).

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TABLE 1  
VENEZUELA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	2004	2005	2006	2007	2008 <sup>c</sup>	
<b>METALS</b>						
Aluminum:						
Alumina	1,900	1,920 <sup>e</sup>	1,892	1,900 <sup>e</sup>	1,900	
Bauxite	5,842	5,900 <sup>e</sup>	5,928	5,500	5,500	
Metal, primary, unalloyed	metric tons	623,540	615,070	610,000 <sup>e</sup>	610,000 <sup>e</sup>	610,000
Gold, mine output, Au content	kilograms	9,666	10,480	11,600	10,092	10,100
Iron and steel:						
Iron ore and concentrate: <sup>c</sup>						
Gross weight	19,196 <sup>2</sup>	20,000	23,000	23,000	23,000	
Metal content	12,669 <sup>2</sup>	13,000	15,200	15,200	15,200	
Metal, direct-reduced iron	7,800	8,900	8,400 <sup>e</sup>	8,400 <sup>e</sup>	8,400	
Ferroalloys: <sup>c</sup>						
Ferromanganese	15,000	15,000	15,000	15,000	15,000	
Ferronickel	58,000	56,300	57,000	57,000	57,000	
Ferrosilicon <sup>3</sup>	92,000	92,000	92,000	92,000	92,000	
Silicomanganese	35,000	35,000	35,000	35,000	35,000	
Total	200,000	198,000	199,000	199,000	199,000	
Steel, crude	4,575	4,907	4,900	5,000	5,000	
Semimanufactures, hot-rolled	3,400	3,500	3,500 <sup>e</sup>	3,500 <sup>e</sup>	3,500	
Lead, secondary, refined <sup>c</sup>	metric tons	30,000	30,000	30,000	30,000	
Nickel:						
Mine output, Ni content <sup>c</sup>	do.	20,468 <sup>2</sup>	20,000	20,000	20,000	
Ferronickel, Ni content	do.	17,400	16,900	16,600	16,600 <sup>e</sup>	16,600
<b>INDUSTRIAL MINERALS</b>						
Cement, hydraulic <sup>c</sup>	9,000	10,000	11,000	11,000	11,000	
Clays, common	3,060	235	250 <sup>e</sup>	250 <sup>e</sup>	250	
Diamond: <sup>c</sup>						
Gem	carats	40,000	46,000	45,000	45,000	45,000
Industrial	do.	60,000	69,000	70,000	70,000	70,000
Total	do.	100,000	115,000	115,000	115,000	115,000
Feldspar	176	202	200	200 <sup>e</sup>	200	
Gypsum	4	6	7	7 <sup>e</sup>	7	
Lime <sup>e</sup>	400	400	400	400	400	
Nitrogen, N content of ammonia	1,012	900	1,160 <sup>e</sup>	1,160 <sup>e</sup>	1,160	
Phosphate rock:						
Gross weight	300	392	400 <sup>e</sup>	400 <sup>e</sup>	400	
P <sub>2</sub> O <sub>5</sub> content <sup>e</sup>	85	110	115	115	115	
Pyrophyllite <sup>c</sup>	32	32	30	30	30	
Salt, evaporated <sup>c</sup>	metric tons	350,000	350,000	350,000	350,000	350,000
Serpentinite, crushed <sup>c</sup>	550	550	550	550	550	
Stone, sand and gravel:						
Stone:						
Granite <sup>c</sup>	750	750	750	750	750	
Limestone <sup>4</sup>	11,444	18,781	18,000 <sup>e</sup>	18,000 <sup>e</sup>	18,000	
Sand and gravel	2,878	605	600 <sup>e</sup>	600 <sup>e</sup>	600	
Silica sand <sup>4</sup>	943	207	500 <sup>e</sup>	500 <sup>e</sup>	500	
Sulfur, petroleum byproduct <sup>c</sup>	800	800	800	800	800	
<b>MINERAL FUELS AND RELATED MATERIALS</b>						
Carbon black <sup>c</sup>	60	60	60	60	60	
Coal, bituminous	8,107	7,195	7,459	7,457	7,457	
Gas, natural: <sup>e</sup>						
Gross	million cubic meters	57,398 <sup>2</sup>	67,000	56,000	56,000	56,000
Marketed	do.	31,687 <sup>2</sup>	34,000	28,500	28,500	28,500
Natural gas liquids:						
Natural gasoline	thousand 42-gallon barrels	11,362	13,027	13,572	13,600 <sup>e</sup>	13,600
Liquid petroleum gas	do.	54,338	62,298	64,903	64,900 <sup>e</sup>	64,900
Total	do.	65,700	75,325	78,475	78,500 <sup>e</sup>	78,500

See footnotes at end of table.

TABLE 1—Continued  
 VENEZUELA: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	2004	2005	2006	2007	2008 <sup>c</sup>	
MINERAL FUELS AND RELATED MATERIALS—Continued						
Petroleum: <sup>5</sup>						
Crude	thousand 42-gallon barrels	933,305	936,225	916,515	920,000 <sup>c</sup>	920,000
Refinery products: <sup>c</sup>						
Liquefied petroleum gas	do.	6,682 <sup>2</sup>	5,500	7,000	7,000	7,000
Gasoline, motor	do.	131,929 <sup>2</sup>	75,000	85,000	85,000	85,000
Naphtha and other gasolines	do.	60,000	60,000	60,000	60,000	60,000
Jet fuel	do.	29,412 <sup>2</sup>	32,000	32,000	32,000	32,000
Kerosene	do.	179	120	120	120	120
Distillate fuel oil	do.	109,555 <sup>2</sup>	109,000	109,000	109,000	109,000
Lubricants	do.	1,200	1,200	1,200	1,200	1,200
Residual fuel oil	do.	101,481 <sup>2</sup>	90,000	90,000	90,000	90,000
Asphalt	do.	5,500	5,500	6,000	6,000	6,000
Petroleum coke	do.	10,000	10,000	10,000	10,000	10,000
Paraffins	do.	250	250	250	250	250
For internal consumption	do.	30,000	30,000	30,000	30,000	30,000
Unspecified	do.	1,000	1,000	1,000	1,000	1,000
Gains and losses	do.	15,969 <sup>2</sup>	1,930	2,000	2,000	2,000
Total <sup>6</sup>	do.	503,000	422,000	434,000	434,000	434,000

<sup>c</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. do. Ditto.

<sup>1</sup>Table includes data available through March 3, 2009.

<sup>2</sup>Reported figure.

<sup>3</sup>Production of 75% silicon-content ferrosilicon.

<sup>4</sup>Excludes production under contract with the Government.

<sup>5</sup>Includes condensate and bitumen for the production of Orimulsión®.

<sup>6</sup>Excludes byproduct sulfur, which is reported in the industrial minerals portion of this table, but includes losses.



TABLE 2  
VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners <sup>1</sup>	Location of main facilities	Annual capacity
Alumina	C.V.G. Bauxilum C.A. (Corporación Venezolana de Guayana)	Ciudad Guayana, Bolivar State	1,800
Aluminum	C.V.G. Aluminio del Caroní, S.A. (Corporación Venezolana de Guayana and others)	do.	210
Do.	C.V.G. Venezolana de Aluminio C.A. (Corporación Venezolana de Guayana, 80%, and Showa Denko K.K., Kobe Steel Ltd., Sumitomo Chemical Co. Ltd., Mitsubishi Materials Corp., Mitsubishi Aluminum Co., and Marubeni Corp., 20%)	do.	430
Bauxite	C.V.G. Bauxilum C.A. (Corporación Venezolana de Guayana, 100%)	Los Pijiguaos, Bolivar State	6,000
Cement	CEMEX Venezuela, S.A. C.A. (Cementos Mexicanos S.A. de C.V., 100%)	Barquisimeto, Lara State; Maracaibo, Zulia State; Pertigalete, Anzoategui State; San Cristobal, Tachira State	4,600
Do.	LaFarge Venezuela (Lafarge Group, 56.2%)	La Vega, Miranda State, and San Cristobal, Tachira State	1,750
Do.	Holcim (Venezuela) S.A. (Holcim Ltd., 85%)	Carupano, Sucre State, and San Sebastian de los Reyes, Aragua State	2,200
Do.	C.A. Fábrica Nacional de Cementos (Lafarge Group, 46.13%)	Palmira and Ocumare del Tuy, Miranda State	1,330
Do.	Cementos Catatumbo (Lafarge Group, 23.32%)	Montellano, Zulia State	650
Do.	Cemento Andino	Curcas, Trujillo State	560
Coal	Carbones del Guasare, S.A. (Carbozulia S.A., 49%; Peabody Energy Corp., 25.5%; Anglo Coal, 25.5%)	Paso Diablo, Zulia State, Guasare coal basin	8,000
Do.	Carbones de la Guajira, S.A. (InterAmerican Coal Holdings NV, 64%, and Carbozulia S.A., 36%)	Mina Norte and Cachiri, Zulia State, Guasare coal basin	1,500
Ferronickel	Loma de Níquel C.A. (Anglo American plc, 91.4%)	Loma de Niquel, Aragua and Miranda States	18
Ferrosilicon	Ferroatlántica de Venezuela, S.A. (Ferroatlántica S.L., 80%, and Corporación Venezolana de Guayana, 20%)	Ciudad Guayana, Bolivar State	80
Gold	kilograms C.V.G. Compañía General de Minería C.A.	Isladora and La Camorra Mines, El Callao, Bolivar State	5,000
Do.	do. C.V.G. Compañía General de Minería C.A. (C.V.G. Ferrominera Orinoco C.A., 66.77%, and Corporación Venezolana de Guayana, 33.23%)	Colombia and Union Mines. Caratal and El Peru plants, El Callao, Bolivar State	4,600
Do.	do. Promotora Minera de Venezuela (Gold Fields Ltd., 70%, and Ferrominera Orinoco C.A., 30%)	Choco-10 Mine, El Callao, Bolivar State	2,500
Do.	do. C.V.G. Compañía General de Minería C.A.	Tomi Mine, El Callao, Bolivar State	1,500
Do.	do. Revemin (C.V.G. Compañía General de Minería C.A., 51%, and Corporación Venezolana de Guayana, 49%)	Revevin mill, El Callao, Bolivar State	1,500
Do.	do. El Callao Mining Corp. (Crystallex de Venezuela C.A., 80%)	La Victoria (Lo Increible), El Callao, Bolivar	200
Iron and steel:			
Iron:			
Direct-reduced	Siderúrgica del Orinoco C.A. (Cosorcio Siderúrgico Amazonia Ltd., 70%, and Corporación Venezolana de Guayana, 30%)	Ciudad Guayana, Bolivar State	4,600
Hot-briquetted	Complejo Siderúrgico de Guayana C.A. (Kobe Steel, 36.7%; C.V.G. Ferrominera, 17.4%; Tubos de Acero de México, S.A., 6.9%; Mitsui and Co. Ltd., Nissho Iwai Corp., Tomen Corp. and Shinsho Corp., 30.3%; International Finance Corp., 8.7%)	do.	1,000
Do.	Orinoco Iron (International Briquettes Holding, 100%)	Puerto Ordaz, Bolivar State	2,200
Do.	Venezolana de Prereducidos de Caroní (International Briquettes Holding, 100%)	do.	815
Iron ore	C.V.G. Ferrominera Orinoco C.A. (Corporación Venezolana de Guayana, 100%)	Cerro San Isidro, Los Barrancos, and Las Pailas, Bolivar State	25,000
Iron ore pellets	do.	Ciudad Guayana, Bolivar State	3,600
Do.	Siderúrgica del Orinoco C.A. (Cosorcio Siderúrgico Amazonia Ltd., 70%, and Corporación Venezolana de Guayana, 30%)	do.	7,000
Steel	do.	do.	4,000

See footnotes at end of table.

TABLE 2—Continued  
 VENEZUELA: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners <sup>1</sup>	Location of main facilities	Annual capacity
Natural gas	million cubic meters	Petróleos de Venezuela S.A. (Government, 100%)	Processing plants in Anzoategui, Monagas, and Zulia States	35,000
Nickel, Ni content of mine output		Loma de Níquel C.A. (Anglo American plc, 91.4%)	Loma de Níquel, Aragua and Miranda States	22
Nitrogen content of ammonia		Fertilizantes Nitrogenados de Oriente S.A. (Pequiven, 35%; Koch Industries, 35%; Snamprogetti International S.A., 20%; Empresas Polar, 10%)	Jose Industrial Complex, Anzoategui State	1,070
Do.		Pequiven (Petróleos de Venezuela S.A., 100%)	Petrochemical complexes in Zulia and Carabobo States	670
<b>Petroleum:</b>				
Crude <sup>2</sup>	million 42-gallon barrels	Petróleos de Venezuela S.A. (Government, 100%)	Fields in Anzoategui, Apure, Falcon, Guarico, Monagas, and Zulia States	750
Do.	do.	Joint ventures with Petróleos de Venezuela S.A. <sup>3</sup>	Various locations	150
Refinery products	do.	Petróleos de Venezuela S.A. (Government, 100%)	Refineries in Amuay and Cardon, Falcon State; Bajo Grande, Zulia State; El Palito, Carabobo State; Puerto La Cruz and San Roque, Anzoategui State	475

Do., do. Ditto.

<sup>1</sup>Reflects 2005 Government holding company structure and does not include the reorganization that took place after the formation of Compañía Nacional de Industrias Básicas.

<sup>2</sup>Does not include extra-heavy crude processing (synthetic crude).

<sup>3</sup>Includes crude petroleum production undertakings that formerly produced crude petroleum under operating service, risk-sharing, or profit-sharing agreements.

