

# PERU

By Alfredo C. Gurmendi and Philip A. Szczesniak

With a population of more than 27 million, Peru had a gross domestic product (GDP) of \$54 billion,<sup>1</sup> or \$123 billion in terms of purchasing power parity in 2000 (U.S. Central Intelligence Agency, 2001, Peru—Economy, accessed October 22, 2001, at URL <http://www.odci.gov/cia/publications/factbook/geos/pe.html>). The rate of growth of the GDP was 3.6% compared with 3.8% in 1999, and the average inflation rate for the year was 3.8%, which was about the same level as that of 1999; this represented the lowest inflation since 1960 and the second lowest in the past 16 years (Ministerio de Energía y Minas, 2001, p. 8). Minerals and hydrocarbon industries accounted for 2.4% of Peru's GDP in 2000. Mining export revenues of \$3.2 billion represented 45.7% of total exports of \$7.0 billion; the trade deficit was about \$300 million, which was 48.7% lower than that of 1999 (\$616 million) (Ministerio de Energía y Minas, 2000b, p. 35; 2001, p. 6, 8, 11). The Peruvian economy improved in 2000 owing to its recovery after El Niño and significant reduction in its trade deficit; its trade grew by 15% in terms of volume, although the prices for its major mineral exports (mainly copper, gold, lead, and zinc) remained at low levels. Peru's foreign debt amounted to \$28.4 billion, and the net international reserves were \$8.2 billion by yearend 2000 (Ministerio de Energía y Minas, 2000b, p. 14). Peru's public debt as a percentage of the GDP, however, returned to 53% in 2000 after having decreased to 28% in 1998 (World Bank Group, September 13, 2001, Peru at a glance, accessed October 24, 2001, at URL <http://www.worldbank.org/data/countrydata/countrydata.html>).

The privatization of state-owned firms and the formation of joint ventures in the mining industry continued, and foreign investors viewed Peru as an attractive open-market economy in Latin America, and the International Monetary Fund indicated that the country's economy will continue growing owing to its fiscal and monetary discipline and political stability (Comisión Nacional de Inversiones y Tecnologías Extranjeras, 2000, p. 1; Ministerio de Energía y Minas, 2001, p. 7).

In 2000, according to the Comisión Nacional de Inversiones y Tecnologías Extranjeras (CONITE) and the Unit on Investment and Corporate Strategies Office of the United Nations Economic Commission for Latin America and the Caribbean, Peru received \$9.75 billion of foreign direct investment (FDI), which was about 14% higher than that of 1999 (\$8.57 billion) compared with \$8.03 billion in 1998 and \$7.28 billion in 1997 (Ministerio de Energía y Minas, 2001, p. 7; Economic Commission for Latin America and the Caribbean, June 2001, Foreign investment in Latin America and the Caribbean—2000 report, accessed October 22, 2001, via URL

<http://www.eclac.cl>; CONITE, June 2001, Registered foreign investment—June 2001, accessed October 30, 2001, at URL <http://www.mef.gob.pe/peruinv/ingles/boletin/boletin.htm>). CONITE also reported that Peru received \$3.36 billion of FDI in the minerals sector [mining (\$1.7 billion), petroleum (\$156.7 million), and gas (\$1.6 billion)] compared with \$1.76 billion in 1999, \$1.51 billion in 1998, and \$1.33 billion in 1997 (CONITE, June 2001, Registered foreign investment—June 2001, accessed October 30, 2001, at URL <http://www.mef.gob.pe/peruinv/ingles/boletin/boletin.htm>).

Domestic and foreign private investment continued to be attracted to Peru because the Government guarantees proprietorship, investments, the free remittance of profits and capital repatriation, and equal treatment to national and foreign investors; the Peruvian Government also slashed subsidies and tariffs, freed foreign exchange and interest rates, liberalized international investment rules, simplified the tax code, established concessions for construction and operation of public infrastructure (telecommunications, roads, ports, and airports), and embarked on fiscal austerity and investment in social development and agriculture. Furthermore, the participation of the Peruvian Government has been limited to a role of regulator, promoter, and overseer (Ministerio de Energía y Minas, 2001, p. 7).

CONITE reported that since July 19, 1991, when the privatization program began, the Peruvian Government has privatized more than 200 state-owned corporations and netted \$9.2 billion; new investments of \$11.4 billion have been committed by domestic and foreign investors. Privatization revenues amounted to \$301 million with investment commitment for \$158.5 million in 2000. As of December 31, mining sector revenues amounted to \$1.7 billion with projected investments of \$4.5 billion. A total investment of \$9.1 billion for the mining sector was expected for the 2001 to 2009 period (Ministerio de Energía y Minas, 2001, p. 22, 28). The privatization process continued to be managed by the Comisión para Promoción de Inversión Privada, which had the legal authority to transfer state-owned assets. Responsibility for specific privatization was vested in the Comités de Privatización (CEPRIs) whose members were selected from the ranks of leading professionals and officials mainly from the private sector. Thus far, the Government has privatized most of its assets in the following sectors—mining, 90%; manufacturing, 85.5%; electricity and hydrocarbons, 68% each; and agriculture, 35%. In terms of concessions, nine had been transferred to the private sector by yearend 2000; among these were Lima's international airport; exploration, development, production, transport, and distribution of the Camisea gas and natural gas liquids (NGL); the national railway system; and two electrical transmission lines (Ministerio de Energía y Minas, 2001, p. 21-

<sup>1</sup>Where necessary, values have been converted from Peruvian nuevo soles (S/) to U.S. dollars (US\$) at the rate of S/3.523=US\$1.00.

22). In the mining sector, some tenders were still pending for the following large projects in 2001-02: the copper deposits of Michiquillay in the Department of Cajamarca and Toromocho in the Department of Junín, the copper and iron deposits of Las Bambas in the Department of Cusco, the coal deposits at Alto Chicama in the Department of La Libertad, the phosphates and brine of Bayóvar in the Department of Piura; and the ownership transfer of La Granja copper project. Additionally, there were several mining prospects for polymetallic, gold, copper, coal, and industrial minerals to be privatized (Ministerio de Energía y Minas, 2001, p. 25, 29).

### Government Policies and Programs

The new hydrocarbon law (No. 26844 of 1997) eliminates exclusive rights of the state-owned *Petróleos del Perú S.A.* (*Petroperú*) in the industry, such as control over secondary recovery of crude oil, refining, and imports and subsequent resale of petroleum and byproducts. The law has ensured more-favorable crude oil and gas exploration and production contract terms for investors, which has resulted in an increased number of domestic and foreign companies expressing interest in participating in exploration, production, and distribution of natural gas and petroleum contracts with *Petroperú* and mine properties with *Empresa Minera del Centro del Perú S.A.* (table 2).

Supreme Decree No. 014-92-EM, the General Mining Law of June 2, 1992, provides guaranteed protections to mining ventures and contracts under the Peruvian Civil Code. Consequently, such ventures and contracts are immune from unilateral changes by any governmental authority in Peru without an appropriate legal or administrative remedy. Also, the Peruvian Constitution establishes equal protection for domestic and foreign investors who may enter into agreements with the Government and guarantees free access, possession, and disposal of foreign currency. Within the framework of Decree law No. 708 (promotion of investment), Legislative Decree No. 662 (Foreign Investment Promotion Law) and Legislative Decree No. 757 (Framework Law for the Private Investment Growth), more than 250 domestic “Stability and Guarantee Contracts” have been signed since 1993 (Ministerio de Energía y Minas, 2001, p. 70; CONITE, October 20, 2000, Perú—Legal framework—Supreme Decree No. 162-92-F, accessed October 20, 2000, at URL <http://www.mef.gob.pe/peruinv/ingles/legal/ds162.htm>).

Legal procedures to obtain mining rights have been made easier by the enactment of complementary legislation Supreme Decree No. 018 of July 9, 1992. The Government no longer has exclusive control over exploration, mining, smelting, and refining of metals and fuel minerals. Individuals and private companies are allowed to hold mining permits in Peru. In the legal framework for investment and taxation, no distinction is made among domestic and foreign investors, corporations, and consortia formed in Peru or abroad. No restrictions were put on the remittance of dividends, depreciation, and royalties abroad. Contracts can be signed among investors, and the Government guarantees the stability of legal commitments and taxes. To protect investors’ interests further, Peru signed agreements with the World Bank Multilateral Investment Guarantee Agency

(authorized by Legislative Decree 25312) and with the Overseas Private Investment Corporation (authorized by Legislative Decree 25809) (Ministerio de Energía y Minas, 2001, p. 74-75).

*Petroperú* managed energy-related activities for the Government. In principle, all mineral and geothermal resources belong to the Government. The country granted concessions for use by the Government, private companies, and individuals. The administration and management of all mining legal processes and concessions rested with the executive branch.

The Camisea gasfield, which is the largest potential natural gasfield in Peru, contained 368 billion cubic meters (13 trillion cubic feet) of natural gas. Peru’s Special Privatization Committee for this project made presentations to the CEOs of the oil and gas multinationals in key locations in the Americas and Europe and apprised them of the Government’s plans for the development of Camisea and discussed their implementation (Ortigas, 2000).

The \$2.6 billion Camisea project has been split into two contracts. First, on February 16, 2000, a consortia that was led by Argentina’s largest oil producer *Pluspetrol S.A.* and included *Hunt Oil Co.* of the United States and *SK Corp.* of the Republic of Korea had won the bidding for 40-year upstream operations (exploration and production) on Camisea. Second, on October 20, 2000, Peru issued a tender for a 33-year contract for transportation and distribution of gas and NGL through separate pipelines. The sole bidder for the second phase was a six-company consortium that was led by Argentina’s *Tecgas S.A.* and included *Pluspetrol*, *Hunt Oil*, *Graña y Montero S.A.* of Peru, *Sonatrach Company* of Algeria, and *SK (U.S. Energy Information Administration, 2001, Perú—Natural gas, Country Analysis Brief, accessed October 25, 2001, at URL <http://www.eia.gov/emeu/cabs/peru.html>).*

### Environmental Issues

The *Dirección General de Asuntos Ambientales (DGAA)* of the *Ministerio de Energía y Minas (MEM)* has the responsibility to address environmental problems that result from energy and mining activities and is mandated to implement the laws and regulations of the environmental legal framework, such as Legislative Decree No. 613 of September 1990 (the environmental code) and Supreme Decree No. 016-93-EM of April 28, 1993 (the environmental regulation) (Ministerio de Energía y Minas, 2001, p. 71-72). The sustainable development model for the mining and energy sectors began in 1993 with regulations and procedures for gradual reduction of pollution, which include economic development policies and environmental protection. The mining industry must comply by adjusting its ongoing operations to permissible effluent levels and its new operations by using cleaner technologies. The DGAA evaluates and proposes the environmental regulations for the mining and energy sectors, which include the maximum emission levels that are compatible with the internationally accepted limits set by the United Nations and the World Bank; approves environmental impact assessments for new operations and Environmental Adjustment and Management Programs for ongoing ones; and administers the national environmental information system (Ministerio de Energía y Minas, 2001, p. 73). The mining and oil companies are increasing their efforts

to protect the environment, and oil companies, in particular, are under pressure because the number of operations in the Amazon Rain Forest, which is one of the world's most sensitive ecosystems, are increasing.

## Production

In 2000, Peruvian metals and minerals production was valued at \$3.3 billion; the value of all mining products exported during the year amounted to \$3.2 billion, which was almost 10% more than that of 1999 (table 1). Including petroleum, Peru's mineral export earnings amounted to \$3.6 billion, or 51.4% of its total exports of \$7.0 billion. Imports increased by 9% to \$7.3 billion, which generated a trade balance deficit of \$300 million. Peru imported crude oil valued at \$1.1 billion, which created a trade deficit of \$719 million for the energy sector in 2000 (Ministerio de Energía y Minas, 2000b, p. 15, 35; Sociedad Nacional de Minería, Petróleo y Energía, 2000, p. 180).

Despite Latin America's economic turmoil, Peru's 2000 metal production increased compared with that of 1999, particularly in silver (5.9%), copper (4.1%), gold (3.1%), and zinc (1.4%). Lead production, however, declined (3.9%). In gold, the increased output was because of production achieved by large (1.5%) and medium (16.5%) mining corporations. Minera Yanacocha S.A. (MYSA) [Newmont Mining Corp. of the United States, 51.35%; Cía. de Minas Buenaventura S.A. (Buenaventura), 43.65%; and the World Bank International Finance Corporation, 5%] contributed 41.5% of gold [55 metric tons (t)] production. The copper increase was the result of expansions at Peru's second largest copper producer BHP Tintaya S.A.'s (Tintaya) Tintaya Mine, Sociedad Minera Cerro Verde S.A.'s Cerro Verde Mine, and Southern Peru Copper Corp.'s (SPCC) Cuajone Mine and solvent extraction and electrowinning (SX-EW) of oxide ores in the Cuajone and the Toquepala copper mines. Peru's second largest private lead producer Cía. Minera Atacocha S.A. (Atacocha), Cía. Minera Condestable, and several medium-sized mines also contributed to the growth in copper output (Ministerio de Energía y Minas, 2000b, p. 8, 21, 42, 43; Metal Bulletin, 2000b).

## Trade

In 2000, mining was the main exporting sector of the country. Of its main mineral exports, gold, copper, zinc, lead, and silver ranked first, second, third, fourth, and fifth, respectively (Ministerio de Energía y Minas, 2000b, p. 34). As a member of the Mercado Común Andino (ANCOM) (Bolivia, Colombia, Ecuador, Peru, and Venezuela), Peru sold about 7% of its exports to the other ANCOM members; about 5% was sold to other countries in Latin America. Peruvian mineral exports could increase as the negotiations between the Mercado Común del Cone Sur (Argentina, Brazil, Paraguay, and Uruguay and associate members Bolivia and Chile) and ANCOM lead to a free trade pact in the near future, and perhaps create the South American Free Trade Agreement. Peru, however, has been cautious about turning bilateral agreements into a single agreement (CONITE, 2000, Your best investment option, accessed October 20, 2000, at URL <http://www.mef.gob.pe/peruinv/ingles/legal/peru.htm>).

## Structure of the Mineral Industry

The structure of the Peruvian mineral industry continued to change to a privately owned/Government-regulated regime from a Government owned/Government operated one. In 2000, several joint-venture agreements and acquisitions were signed in Peru. Cominco Ltd.'s Cominco Perú SRL and Solitario Resources Corp. of Canada entered into a joint venture to develop the Bongará zinc project in Amazonas Department; if needed, Cominco would provide financing for the project to earn up to 65% interest. Crown Resources Corp. and Solitario Resources of the United States formed a joint venture to develop the Yanacocha gold project, which is north of MYSA's gold operations. Crown and Billiton plc signed a joint-venture agreement to explore the Soloco zinc project, which is south of the Bongará zinc project; Billiton could earn a 60% interest in Soloco (Ministerio de Energía y Minas, 2001, p. 34-38).

Mine and facility expansions with total investments of \$1.4 billion were underway. Among the most important were SPCC's Cuajone Mine increase to 87,000 metric tons per day (t/d) of copper ore and Toquepala Mine's concentrator, leaching, and ion exchange plants increase to 60,000 t/d of copper metal; MYSA's Yanacocha Mine smelter increase to 350 t/d from 150 t/d; Atacocha's mill increase to 3,500 t/d of concentrates; and Empresa Minera Iscaycruz S.A.'s (Iscaycruz) mill increase to 2,500 t/d from 1,700 t/d. Additionally, Refinería Cajamarquilla S.A. (RCSA) (Cominco Ltd. of Canada, 87%, and Marubeni Corp. of Japan, 13%) expanded its Cajamarquilla zinc refinery to 120,000 metric tons per year (t/yr) from 100,000 t/yr in 1996 at a cost of \$30 million. A 120,000-t/yr zinc refinery will be built by RCSA at a cost of \$326 million, which will increase RCSA's zinc metal production to 240,000 t/yr in 2003 (Ministerio de Energía y Minas, 2001, p. 29, 31).

Mine projects under construction with total investments of \$2.6 billion included Compañía Minera Antamina S.A.'s polymetallic mine, Tintaya's oxides plant, MYSA's La Quinua gold mine, and Buenaventura's Antapite gold mine (Ministerio de Energía y Minas, 2001, p. 29, 31).

In 2000, mine projects with feasibility studies included Tintaya's Antapaccay, Billiton's La Granja copper project, Minera Quellaveco S.A.'s copper project, and SPCC's Cuajone ion exchange plant; their expected investments totaled \$3.3 billion (Ministerio de Energía y Minas, 2001, p. 29, 32).

Starting in 2002, it was expected additional investments in projects with advanced exploration work, such as Tambogrande by Manhattan Sechura Company; San Gregorio by Sociedad Minera El Brocal S.A.; Minas Conga by Cedim S.A.; Corocoahuayco project by Tintaya; and Magistral, which is similar to Antamina, by Minera Ancash Cobre S.A. Finally, the Government was expecting that Minero Peru's projects pending privatization, such as Las Bambas, Michiquillay, and Toromocho base-metal deposits and the Bayóvar phosphates, would generate an estimated investment of \$2.1 billion (Ministerio de Energía y Minas, 2001, p. 30, 32).

Private firms, mostly controlled by local interests, dominated the medium- and small-sized mining operations. More than 80 foreign mining companies have been established in Peru since 1990 (table 2).

## Commodity Review

### Metals

**Copper.**—Peru's copper (content in concentrates) output increased to 553,924 t from 536,387 t compared with that of 1999. About 529,000 t of copper metal was exported with a value of \$930 million (Ministerio de Energía y Minas, 2000b, p. 34).

SPCC remained the largest copper producer in the country with an output of 339,248 t of copper from its mine operations at, in order of importance, the Toquepala and the Cuajone open pits and 47,720 t of Cu metal recovered from the SX-EW cathode plant at Toquepala. Metal output at the Ilo refinery was a record high of 233,038 t of copper and 4,268 t of molybdenum with 114.4 t of silver. Tintaya reported an output of 91,664 t of copper from its open pit operations. Phelps Dodge Corp.'s Cerro Verde copper mine produced 71,249 t. This represented Cerro Verde's fifth consecutive increase in output following the completion of its mine expansion and mill recovery improvement programs. Doe Run Peru produced 17,908 t of copper from its base metal mines. Medium- and small-sized mines in the country supplied an additional 33,855 t (Ministerio de Energía y Minas, 2000b, p. 47).

According to SPCC, its Ilo smelter and refinery operations will be modernized and expanded to treat 1.7 million metric tons per year (Mt/yr) of copper concentrate from 1.1 Mt/yr in 1999. The expansion should be completed in 2004 at an estimated cost of \$650 million. Expansion of the Toquepala Mine and concentrator was expected to begin in 2001. The feasibility studies for the construction of an additional leaching section at the Cuajone SX-EW cathode plant continued, which would be expanded to 22,000 t/yr of copper metal by mid-2003. The Ilo refinery will process the concentrates produced by the Cuajone and the Toquepala copper mines, which contain 1.73 billion metric tons of minable reserves and 665 million metric tons (Mt) of leachable ("lixivable") reserves (Metal Bulletin, 2000b; González, 2001).

**Gold.**—MYSA remained the largest gold producer in the country by producing 55.1 t of gold in 2000; this was a 6.8% increase compared with that of 1999 and represented 41.5% of Peru's total gold output, or 132.6 t, of which, 127 t at a value of about \$1.1 billion was exported (Ministerio de Energía y Minas, 2000b, p. 34). Gold recovered as a byproduct from the concentrates of the nation's polymetallic mines amounted to 4.2 t. Other private gold producers in 2000 were Minera Barrick Misquichilca S.A. (25.2 t), Minera Aurífera Retamas S.A. (5.2 t), Cía. Minera Ares S.A. (5.2 t), Cía. Minera Sipán S.A. (4.8 t), Consorcio Minero Horizonte S.A. (4 t), Cía. Minera Aurífera Santa Rosa S.A. (3 t), Minas de Orcopampa S.A. (2.9 t), and Cía. Minera Poderosa S.A. (2 t). Medium- and small-sized mines reported 26.8 t, and an unknown number of placers and "garimperos" (informal individual miners) accounted for about 16.5 t. Placers accounted for 12.4% of the gold produced in the country. The southeastern Andes have well-known gold placers on the Inambari River and its tributaries. Placer gold production was concentrated in the Inca and the Mariategui Regions; gold also was recovered from placers in rivers and

streams throughout the jungle (Ministerio de Energía y Minas, 2000b, p. 42; Sociedad Nacional de Minería, Petróleo y Energía, 2001b, p. 64; Soldi, 2001, p. 3-4).

**Iron Ore.**—Shougang Hierro Perú S.A. (a subsidiary of China's Shougang Corp.) was Peru's only iron ore producer in 2000; its mine output decreased from 4.0 Mt to 3.9 Mt in 1999. The value of iron ore exports was \$67 million, which was about the same level of 1999 (\$66.7 million). With an investment of \$100 million, Shougang Hierro will build a new pellet plant to increase production by 3 Mt/yr in 2001. From 1993 to 1998, the company invested \$120 million (Ministerio de Energía y Minas, 2000b, p. 34).

**Lead, Silver, and Zinc.**—In 2000, the Peruvian zinc industry produced 910,303 t of zinc in concentrates and was tied with Canada as the world's third largest after China and Australia (Plachy, 2001). This represented about 11% of the world's concentrate output, almost 60% of Latin America's zinc concentrate, and 28% of refined zinc (Ministerio de Energía y Minas, 2000b, p. 55). Also, Peru produced 270,576 t of lead in concentrates and was the fourth largest producer in the world after Australia, China, and the United States (Ministerio de Energía y Minas, 2000b, p. 60; Smith, 2001). Exports of lead (249,000 t) and zinc (792,000 t) were valued at about \$190 million and \$496 million, respectively (Ministerio de Energía y Minas, 2000b, p. 34).

In 2000, Cía. Minera Volcán S.A. produced 289,706 t of zinc, 69,649 t of lead, and 309 t of silver from its operations in the Yauli mining district and the Paragsha property in Cerro de Pasco. Volcán was the largest private producer of lead, silver, and zinc in Peru. Glencore International AG with its subsidiaries Iscaycruz (98,857 t) and Empresa Minera Yauliyacu S.A. (35,094 t) was Peru's second largest private zinc producer with a total of 133,951 t. Cía. Minera Milpo S.A. [owned by local shareholders (73.8%) and foreign investors (26.2%)] produced 71,050 t of zinc, 20,427 t of lead, and 97 t of silver. Atacocha produced 52,323 t of zinc, 26,739 t of lead, and 105 t of silver. Cía. Minera San Ignacio de Morococha S.A. produced 40,447 t of zinc and 2,270 t of lead. Cía. Minera Santa Luisa S.A. (a subsidiary of Mitsui Mining & Smelting Co. Ltd. of Japan) produced 47,731 t of zinc, 23,332 t of lead, and 53 t of silver from its Huanzalá Mine. Cía. Minera Raura S.A. produced about 33,480 t of zinc, 10,397 t of lead, and 54 t of silver. Buenaventura was the second largest private producer of silver with 283 t; it also produced 11,099 t of zinc and 9,352 t of lead. Sociedad Minera Corona S.A. was the third largest private silver producer with 174 t. Cía. de Minas Arcata was the fourth largest private silver producer with 160 t. SPCC reported 138 t of silver from its smelting and refining operations in Ilo. Corp. Minera Nor Perú S.A. (a subsidiary of Pan American Silver Corp. of Canada) produced 25,577 t of zinc, 9,204 t of lead, and 128 t of silver from its underground Quiruvilca Mine in northern Peru. Silver production increased to 2,438 t from 2,231 t in 1999. Peru was the world's second largest producer after Mexico (Ministerio de Energía y Minas, 2000b, p. 52, 57, 62).

**Steel.**—Acerco S.A. (owned by G.S. Industries Inc. of the

United States, Stanton Funding Co. of Canada, and Wiese Inversiones Financieras S.A. of Peru) acquired Empresa Siderúrgica del Perú's steel plant in February 2000. Acerco paid \$20.2 million in cash and will pay \$142.7 million within 8 years and an additional \$30 million investment commitment to upgrade the steelworks (Ministerio de Energía y Minas, 2001, p. 49).

**Tin.**—Minsur S.A. continued as Peru's only tin producer in 2000. Production from its San Rafael Mine in the Mariátegui Region was 70,901 t in concentrate, which was a 19.8% increase compared with that of 1999. Minsur's tin smelting and refining operations in Pisco, south of Lima, produced 37,410 t of metal, which was a 22.2% increase compared with that of 1999. Peru was the largest tin producer in Latin America followed by Brazil and Bolivia and the third largest tin producer in the world after China and Indonesia (Ministerio de Energía y Minas, 2000b, p. 9, 69; Soldi, 2001, p. 4).

### *Industrial Minerals*

**Cement.**—According to the International Cement Review and the domestic Association of Cement Producers, Peru's total cement production in 2000 was 3.9 Mt, which increased about 2.8% compared with that of 1999. Five main cement companies operated and produced 3.4 Mt. The largest cement producer Cementos Lima S.A. (CLSA) produced about 1.6 Mt of cement, or about 41% of Peru's total cement output; CLSA's Atocongo plant had a design capacity of almost 2 Mt/yr and drew from nearby limestone quarries. The second largest cement producer Cementos Andino S.A. accounted for 19% of total production; it had an installed capacity of 800,000 t/yr with a plant utilization of 95%. The third largest cement producer Cementos Norte Pacasmayo S.A. accounted for 18% of total production. Cementos Yura S.A. had a market share of about 11%, and Cementos Sur S.A. had 5% (International Cement Review, 2000; Pflucker, 2001, p. 3).

**Phosphate Rock.**—The state-owned Minero Perú S.A.'s phosphate deposits (Bayóvar Project) which comprised 150,000 hectares of phosphate and brine, have proven reserves of 550 Mt of phosphatic rock; it has been scheduled for privatization in 2002. As a consumer of sulfuric acid and producer of fertilizer, the Bayóvar Project could be developed competitively because it is located in a valley of great agricultural potential and tremendous export opportunities to the Asia-Pacific region via the port of Paita (Ministerio de Energía y Minas, 2001, p. 51).

The 90,000-t/yr phosphate plant that was operated by Empresa Minera Regional Grau Bayóvar, S.A., produced only 5,581 t of phosphate in 2000 because the company will be privatized by 2002 (Ministerio de Energía y Minas, 2000b, p. 26; 2001, p. 25). Phosphate shipments continued to New Zealand under a 100,000-t contract signed with Norphos International Ltd. of Auckland. Other shipments went to Chile and Costa Rica through Paita.

### *Mineral Fuels*

**Coal.**—Peru's largest coal deposits are at Alto Chicama, 140

kilometers (km) north of Trujillo in La Libertad Region. Other coal deposits occur in the Cuenca del Santa in the Marañón Region and the coal basins of Goyllarisquizga and Hatun Huasi in the Caceres Region of central Peru.

**Natural Gas and Petroleum.**—Natural gas was primarily transported by pipeline from the Talara Basin in the Grau Region to the Talara refinery on the coast. Two gasfields were candidates for development in the Ucayali Basin. Peru's proven natural gas reserves were estimated to be 200 billion cubic meters at the end of 1999. The Aguaytia gasfield, approximately 41 km west-northwest of Pucallpa, has proven reserves of 8.5 billion cubic meters of gas and 9 million barrels (Mbbbl) of condensate, or NGL. Camisea consists of a pair of crescent-shaped gasfields with potentially enough gas to supply Arequipa, Cusco, Lima, and other cities with energy for the next 100 years and could be rich enough to supply fuel to neighboring Brazil (Ortigas, 2000, p. 13). The Cachiriari and the San Martín prospects at Camisea had estimated inferred reserves of about 368 billion cubic meters of gas and 725 Mbbbl of NGL (Ortigas, 2000, p. 7-10). Because the fields are distant from potentially accessible markets, the MEM indicated that new infrastructure was needed and must be developed.

After the Shell/Mobil consortium decided not to proceed with the development of the Camisea gasfield, natural gas production, which decreased during the year, reached a level of 276.5 million cubic meters, which was produced by Petrotech del Perú S.A. (42.2%), Aguaytia S.A. (27.1%), Perez Compac S.A. (21.6%), and others (9.1%) (Sociedad Nacional de Minería, Petróleo y Energía, 2001a, p. 68, 178; Soldi, 2001, p. 4).

Crude oil production decreased by 6.1%, or an average of 99,500 barrels per day (bbl/d) compared with that of 1999. Production of petroleum derivatives decreased by almost 1% and averaged 153,008 bbl/d compared with the 1999 output of 154,496 bbl/d (Ministerio de Energía y Minas, 2000a, p. 11; Sociedad Nacional de Minería, Petróleo y Energía, 2001a, p. 67; Soldi, 2001, p. 4). Peru imported crude oil and petroleum products to satisfy its internal demand. The value of petroleum and derivative imports was \$1.1 billion, which created a trade deficit of \$719 million in the energy sector for 2000 (Ministerio de Energía y Minas, 2000a, p. 16; Sociedad Nacional de Minería, Petróleo y Energía, 2001b, p. 64; Soldi, 2001, p. 4).

Peru's total crude oil production of 36.3 Mbbbl in 2000 came from Pluspetrol (50.4%); the balance was produced by Petrotech (13.4%), Perez Compac (12.3%), Occidental Petroleum Corp. (OPC) del Perú of the United States (12.1%), and others (11.8%). OPC sold its Oriente oilfields to Pluspetrol on August 5, 2000 (Sociedad Nacional de Minería, Petróleo y Energía, 2001b, p. 63, 179). About 67% of the country's crude oil production came from the jungle blocks in the Loreto and the Ucayali Regions; the remainder was produced at the coastal and offshore fields in northern Peru. The country's petroleum reserves were estimated to be about 323 Mbbbl in 2000. The largest oil refinery Petroperú's La Pampilla had a designed capacity of about 102,000 bbl/d; in 2000, it ran at 67.4% capacity. The second largest oil refinery Petroperú's Talara had a designed capacity of about 60,000 bbl/d; in 2000, it ran at 1.9% higher than capacity (Ministerio de Energía y Minas,

2000a, p. 11; Sociedad Nacional de Minería, Petróleo y Energía, 2001a, p. 67; 2001b, p. 63, 68).

## Infrastructure

Peru had 1,988 km of railroads and 72,900 km of roads, of which 8,700 km was paved and 64,200 km was unpaved. There were 8,800 km of navigable waterways and tributaries to the Amazon River system and 208 km of waterways into Lake Titicaca (U.S. Central Intelligence Agency, 2001, Peru—Transportation, World Factbook 2001, accessed October 22, 2001, at URL <http://www.odci.gov/cia/publications/factbook/geos/pe.html>). Peru had an installed electrical generating capacity of 5,050 megawatts (MW), more than 76% of which came from hydroelectric plants (U.S. Central Intelligence Agency, 2001, Peru—Electricity, World Factbook 2001, accessed October 22, 2001, at URL <http://www.doe.gov/cia/publications/factbook/geos/pe.html>). The Peruvian Government has raised \$700 million from the privatization of its electrical sector, with a commitment to invest about \$1.6 billion to install an additional 1,006 MW of capacity in the immediate future (Ministerio de Energía y Minas, 2001, p. 22, 48-50).

Important mineral industry ports included Callao, Ilo, Matarani, Paita, San Nicolás, and Talara on the Pacific Ocean and Iquitos on the Amazon River. Also, a petroleum depot at Bayóvar serviced the 800-km northern Peru crude oil pipeline. Natural gas and liquid gas were transported through a 64-km pipeline in the same area (U.S. Central Intelligence Agency, 2001, Peru—Transportation, World Factbook 2001, accessed October 22, 2001, at URL <http://www.odci.gov/cia/publications/factbook/geos/pe.html>). The country's energy mix by source was hydro (74.8%), fossil fuel (24.5%), and others (0.7%).

## Outlook

With continued capital flow from domestic and foreign investors, the country's economy was expected to bring long-term benefits to the energy, mining, and related mineral industries, which remained the most interesting sectors of the Peruvian economy. The privatization of Electroperú, Minero Perú, and Petroperú was expected to continue improving prospects for the mining sector, the oil and gas industries, and the electricity generation industry.

According to the CEPRI's, the privatization process was expected to continue to generate investments in every sector of the Peruvian economy, particularly in the mining and energy industries. In 2000, investments were being used to modernize Peru's industrial infrastructure. Medium-term foreign investments in the minerals sector were projected to be about \$20 billion, which was the largest committed capital to date, and will contribute significantly to the future of Peru's economic development (Ministerio de Energía y Minas, 2001, p. 3-5).

Two important mineral developments took place in Peru in 2000. In the first, revised proven and probable ore reserves at the Antamina copper-zinc megaproject were calculated to be 559 Mt at a grade of 1.24% copper, 1.03% zinc, 13.71 grams per metric ton silver, and 0.029% molybdenum. The Canadian owners Noranda Inc., Rio Algon Ltd., and Teck Corporation

included drilling data gathered during the construction phase of the project. Antamina will be mined by open pit, and full production was expected by yearend 2001. The total capital requirement will be \$2.2 billion, of which \$1.5 billion will be needed for the construction phase (Metal Bulletin, 2000a). In the second, Cambior Inc. of Canada was negotiating an agreement with the Peruvian Government to transfer the rights for La Granja copper project, which will expire in 2003. Cambior has opened a data room at La Granja for bidders to visit. Minero Perú will offer 100% of the project in an auction by the first quarter of 2001. The auction will be a buyout of the royalty to be paid when La Granja comes into operation. La Granja will require a total of \$2.35 billion for its development. Billiton was interested in acquiring La Granja copper project (Metals & Minerals Latin America, 2000; Ministerio de Energía y Minas, 2001, p. 29).

## References Cited

- Comisión Nacional de Inversiones y Tecnologías Extranjeras, 2000, Foreign investment in Peru: Ministerio de Economía y Fomento, January, 50 p.
- González, R.O., 2001, Perú—Opportunities for investment in mining projects—2000-2004 Plan de expansión y modernización de las operaciones de la Southern Peru Copper Corp.: Convención de Ingenieros de Minas del Perú, 25th, Arequipa, Peru, September 10-14, 2001, 8 p.
- International Cement Review, 2000, Peru—Cementos Lima's Atocongo: International Cement Review, November, 10 p.
- Metal Bulletin, 2000a, Non-ferrous metals—Antamina reserves greater than first expected: Metal Bulletin, no. 8530, November 30, p. 5.
- 2000b, Non-ferrous metals—SPCC to select plan for Ilo expansion by end of year: Metal Bulletin, no. 8523, November 6, p. 9.
- Metals & Minerals Latin America, 2000, Bidding opens for La Granja's Camibor returns project: Metals & Minerals Latin America, v. 5, no. 38, September 18, p. 2.
- Ministerio de Energía y Minas, 2000a, En Cifras—Revista mensual de estadística: Ministerio de Energía y Minas, Año VIII, no. 84, December, 36 p.
- 2000b, Producción minera, in Anuario minero del Perú 2000: Ministerio de Energía y Minas, December, p. 46-50.
- 2001, Plan referencial de minería 2000-2009 (edición especial): Ministerio de Energía y Minas, September, 89 p.
- Ortigas, L.C., 2000, El Proyecto Camisea: Lima, Comité Especial Proyecto Camisea, October 24, 56 p.
- Pflucker, J.M., 2001, Peruvian cement sector—The trend continues: Lima, BBVA Continental, October 1, 16 p.
- Plachy, Jozef, 2001, Zinc: U.S. Geological Survey Mineral Commodity Summaries 2001, p. 186-187.
- Smith, G.R., 2001, Lead: U.S. Geological Survey Mineral Commodity Summaries 2001, p. 92-93.
- Sociedad Nacional de Minería, Petróleo y Energía, 2000, Memoria anual: Sociedad Nacional de Minería, Petróleo y Energía, Año IX, no. 12, December, 204 p.
- 2001a, Informativo mensual: Sociedad Nacional de Minería, Petróleo y Energía, Año X, no. 2, February, 85 p.
- 2001b, Informativo mensual: Sociedad Nacional de Minería, Petróleo y Energía, Año X, no. 3, March, 80 p.
- Soldi, C.G., 2000, Peru, in Mining annual review: Mining Journal Ltd., folio 962, 5 p.
- U.S. Central Intelligence Agency, 2001, Peru, in World factbook: U.S. Central Intelligence Agency, p. 335-337.

## Major Sources of Information

Dirección General de Minería  
Ministerio de Energía y Minas  
Avenida Las Artes 260, San Borja  
Lima 41, Peru

Telephone: (011-511) 4750336  
Fax: (011-511) 4750065

Dirección General de Hidrocarburos  
Ministerio de Energía y Minas  
Avenida Las Artes 260, San Borja  
Lima 41, Peru

Telephone: (011-511) 4750336  
Fax: (011-511) 4750065

Instituto Geológico Minero y Metalúrgico  
Av. Canadá No. 1470, San Borja  
Apartado 889  
Lima 41, Perú

Telephone: (011-511) 2242965  
Fax: (011-511) 2254540

Empresa Minera del Centro del Perú S.A.  
Avenida Javier Prado Este 2155  
Lima 41, Peru

Telephone: (011-511) 4761010  
Fax: (011-511) 4769756

Petróleos del Perú S.A.  
Paseo de la República 3361  
San Isidro  
Box 3126 and 1081  
Lima 27, Peru

Telephone: (011-511) 4413972  
Fax: (011-511) 4425416

### **Major Publications**

Andean Air Mail & Peruvian Times, S.A., Lima. Carta Minera y Panorama Petrolero, weekly.

Business Monitor International Ltd., London. Andean Group—Latin America, Monthly Executive Brief.

L & L Editores SRL, Lima. Minas y Petróleo, El Semanario de la Minería y el Petróleo, weekly.

Instituto de Ingenieros de Minas del Perú, Lima. Monthly Organo Informativo.

Metal Bulletin—Metals & Minerals Latin America, London. A Metal Bulletin Newsletter, monthly.

Ministerio de Energía y Minas, Lima:

Anuario Minero del Perú, annual.

En Cifras, monthly journal of statistics.

Sociedad Nacional de Minería, Petróleo y Energía, Lima:

Memoria Anual, annual.

Monthly reports.

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

(Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000	
<b>METALS</b>						
<b>Antimony:</b>						
Mine output, Sb content e/	460	460	460	460	461	
Metal	305	242	364	255	461	
Arsenic, white 3/	4,969	837	624	1,611	2,495	
<b>Bismuth:</b>						
Mine output, Bi content e/	1,000	1,000	1,000	1,000	1,000	
Metal	939	774	832	705	744	
<b>Cadmium:</b>						
Mine output, Cd content	500 e/	116	--	--	--	
Metal	405	474	535	465	458	
Chromium, mine output, Cr content	181	191	--	--	--	
<b>Copper:</b>						
Mine output, Cu content	485,595	506,498	483,338	536,387	553,924	
Sulfate, Cu content	3,655	3,502	2,450	2,554	2,484	
<b>Metal:</b>						
Blister	73,907	50,454	46,595	31,463	16,030	
Refined	249,890	294,988	309,594	318,914	324,417	
Electrowon	88,172	98,080	101,837	114,425 r/	127,311	
Total	338,062	393,068	411,431	433,339 r/	451,728	
<b>Gold: 4/</b>						
Mines	kilograms	42,351	55,020	71,654	110,530 r/	116,085
Placers	do.	22,535	22,920	22,560	17,956 r/	16,500
Total	do.	64,886	77,940	94,214	128,486	132,585
Indium	do.	4,290	3,799	4,231	5,005 r/	5,015
<b>Iron and steel:</b>						
<b>Iron ore and concentrate:</b>						
Gross weight	thousand tons	4,364	4,439	4,880	3,949 r/	3,892
Fe content	do.	2,916	3,171	3,282	2,759 r/	2,719
<b>Metal:</b>						
Pig iron	do.	273	264	283	250	327
Sponge iron	do.	22	104	61	50	80
Ferroalloys e/		360	360	360	360	360
Steel ingots and castings e/	thousand tons	510	510	510	510	510
Semimanufactures e/		250	250	250	250	250
<b>Lead:</b>						
Mine output, Pb content		248,929	262,466	257,713	271,782	270,576
Metal		94,324	97,882	109,492	121,090 r/	116,412
Manganese, mine output, Mn content e/		200	200	200	200	200
Molybdenum, mine output, Mo content		3,667	3,835	4,344	5,470 r/	7,193
Selenium, metal, refined	kilograms	12,602	12,678	18,006	23,008 r/	23,110
<b>Silver:</b>						
Mine output, Ag content		1,977	2,090	2,025	2,231	2,438
Metal, refined		717	773	989	1,115	1,181
Tellurium, metal	kilograms	25,089	24,754	21,682	17,110 r/	2,205
<b>Tin:</b>						
Mine output, Sn content		53,322 r/	53,736 r/	49,574 r/	59,191 r/	70,901
Metal 5/		26,842 r/	27,953 r/	25,907 r/	30,618 r/	37,410
Tungsten, mine output, W content		331	285	76	--	--
<b>Zinc:</b>						
Mine output, Zn content		760,353	867,691	868,757	899,524	910,303
Metal		173,139	169,809	174,655	196,978	199,813
<b>INDUSTRIAL MINERALS</b>						
Barite		37,103	63,600	7,506	3,512 r/	11,403
Boron materials, crude (borates)		39,982	46,988	22,002	14,716	9,309
Cement, hydraulic	thousand tons	3,848	4,301 r/	4,340	3,799	3,906
Chalk e/		101,000	101,000	101,000	101,000	101,000
<b>Clays:</b>						
Bentonite		18,592	22,285	19,563	19,659	21,059
Fire clay		897	3,990	3,255	10	5,973
Kaolin		14,295	7,875	4,968	1,332	6,165
Common clay		378,050	326,261	360,958	240,889	398,523

See footnotes at end of table.



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

(Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000
<b>INDUSTRIAL MINERALS--Continued</b>					
Diatomite e/	35,100	35,100	35,100	35,100	35,100
Feldspar	5,918	2,502	3,983	1,594	5,642
Gypsum, crude	65,446	64,863	78,656	28,355 r/	140,630
Lime	35,128 r/	31,223 r/	37,220 r/	28,344 r/	140,630
Mica e/	100	--	--	--	--
Nitrogen, N content of ammonia thousand tons	977	1,019	949	950	950
Phosphate rock, crude	65,436	67,136 r/	46,821	9,038 r/	5,581
Salt, all types	293,308	79,492	808,625	778,048	836,221
Stone, sand and gravel:					
Stone: e/					
Dolomite	645	645	645	645	645
Flagstone	300,000	300,000	300,000	300,000	300,000
Granite	2,000	2,000	2,000	2,000	2,000
Limestone thousand tons	4,370	4,097 6/	5,508 6/	4,313 r/ 6/	4,334 6/
Marble	12,542 6/	10,080 6/	9,716 6/	7,651 6/	10,511 6/
Onyx	150	150	150	150	150
Quartz and quartzite (crushed)	40,000	40,000	40,000	40,000	40,000
Shell, marl	4,000	4,000	4,000	4,000	4,000
Slate	31,164	33,488 6/	35,202 6/	15,792 r/ 6/	16,706 6/
Travertine	259,465	261,392 6/	69,248 6/	15,463 r/ 6/	16,220 6/
Sand and gravel:					
Construction thousand tons	1,570	1,666	1,819	1,848 r/	1,607
Silica sand do.	76	83	96	90	74
Sulfur, elemental:					
Native e/	100	100	100	100	100
Byproduct of metallurgy e/	60,000	60,000	60,000	60,000	60,000
Sulfuric acid, gross weight	233,876	408,010	516,514	517,000 e/	517,000
Talc and related materials:					
Talc	12,985	5,750	11,165	12,085 r/	9,668
Pyrophyllite e/	8,000	8,000	8,000	8,000	8,000
Total e/	21,000	13,800	19,200	20,100 r/	17,700
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal:					
Anthracite, run-of-mine	20,699	21,694	7,385	1,488	16,625
Bituminous, run-of-mine e/	45,000	45,000	45,000	45,000	45,000
Total e/	65,700	66,700	52,400	46,500	61,600
Coke, all types e/	10,000	10,000	10,000	10,000	10,000
Gas, natural:					
Gross million cubic meters	1,178	1,055	1,000 r/ e/	1,000 r/ e/	1,000 e/
Marketed thousand cubic meters	248	242 r/	409 r/	333 r/	277
Natural gas liquids: e/					
Natural gasoline and others 7/ thousand 42-gallon barrels	295	295	295	295	295
Butane do.	5	5	5	5	5
Total do.	300	300	300	300	300
Petroleum:					
Crude do.	43,909	42,191	59,625	38,663	36,314
Refinery products:					
Liquefied petroleum gas do.	3,191	2,329	2,292	2,357	2,484
Gasoline, motor do.	10,561	9,641	10,134	9,449	9,291
Jet fuel do.	4,348	2,862	3,416	3,112	2,822
Kerosene do.	5,103	5,200	5,103	4,910	5,235
Distillate fuel oil do.	11,887	15,092	15,040	13,622	12,355
Lubricants do.	243	567	525	530	513
Residual fuel oil do.	19,592	18,959	20,640	17,437	18,348
Asphalt do.	761	1,206	987	363	--
Other 8/ do.	1,303	1,720	3,784	4,611	4,800
Total do.	56,989	57,576	61,921	56,391	55,848

See footnotes at end of table.

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

e/ Estimated. r/ Revised. -- Zero.

1/ Table includes data available through October 2001.

2/ Estimated data are rounded to no more than three significant digits; may not add to totals shown.

3/ Output reported by Doe Run Resources Corp.

4/ Peru's placer gold production was reported.

5/ Output reported by Minsur S.A.'s smelter.

6/ Reported figure.

7/ Includes hexane.

8/ Includes refinery fuel and losses.

TABLE 2  
PERU: STRUCTURE OF THE MINERAL INDUSTRY IN 2000

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Antimony	metric tons	Doe Run Resources Corp. (private, 100%)	Smelter at La Oroya, Junín Department	700
Barite		Barmine S.A. (private, 100%)	Santa Cruz de Cocachaca, Huarochirí, Lima Department	NA
Bentonite		Minerales Andinos S.A. (NL Industries, 90%)	Vichayal Mine, Piura Department	9
Bismuth	metric tons	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	1,000
Cement		Cementos Lima S.A. (private, 100%)	Atocongo Plant, Lima Department	2,000
Do.		Cementos Norte Pacasmayo S.A. (private, 100%)	Pacasmayo Plant, La Libertad Department	800
Do.		Cementos Andino S.A. (private, 100%)	East Lima Plant, Lima Department	500
Do.		Cementos Yura S.A. (private, 100%)	Yura Plant, Arequipa Department	300
Do.		Cementos Sur S.A. (private, 100%)	Arequipa Plant, Arequipa Department	200
Copper		Southern Peru Copper Corp. (SPCC) (Grupo Mexico, S.A. de C.V., 54.2%; the Marmon Corp., 14.2%; Phelps Dodge Overseas Capital Corp., 14%; others, 17.6%)	Cuajone, Moquegua Department, and Toquepala, Tacna Department	300
Do.		do.	Smelter at Ilo, Moquegua Department	250
Do.		do.	Refinery at Ilo, Moquegua Department	175
Do.		Doe Run Resources Corp. (private, 100%)	Cobriza, Huancavelica Department	60
Do.		do.	Smelter at La Oroya	65
Do.		do.	Refinery at La Oroya	60
Do.		Glencore International AG (private, 100%)	Casapalca, Lima Department	60
Do.		Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaycha- gua, Junín Department	60
Do.		Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	60
Do.		BHP Tintaya S.A. (private, 100%)	Tintaya Mine, Cusco Department	50
Do.		Sociedad Minera Cerro Verde S.A. (Phelps Dodge Corp., 82.5%; Cía. de Minas Buenaventura S.A., 9.2%; others, 8.3%)	Cerro Verde, Arequipa Department	80
Do.		do.	Electrowon at Cerro Verde	20
Dolomite		Minera Baribent S.A. (private, 100%)	Esperanza, Ancash Department	25
Gold	kilograms	Minera Yanacocha S.A. (Newmont Mining Corp., 51.35%; Cía. de Minas Buenaventura S.A., 43.65%; World Bank International Finance Corporation, 5%)	Yanacocha, Quinua, and Magui-Magui mines Cajamarca Department	70,000
Do.	do.	Minera Barrick Misquichilca S.A. (Barrick Gold Corp., private, do. 100%)	Pierina, Cajamarca Department	26,000
Do.	do.	Cía. Minera Poderosa S.A. (private, 100%)	Poderosa, La Libertad Department	2,000
Do.	do.	Cía. de Minas Orcopampa S.A. (Buenaventura, 100%)	Orcopampa, Arequipa Department	2,900
Do.	do.	Asesoría Contable Minera S.A. (private, 100%)	Ocoña, Santa Clarita, Explorato, and Molino de Oro, Arequipa Department	1,000
Do.	do.	Cía. Aurífera Río Inambari S.A. (Cía. Minera del Sur S.A., 84%; Aurífera Claudia, 16%)	Río Caichive, Madre de Dios Department	200
Do.	do.	Minera Aurífera Retamas S.A. (private, 100%)	Retamas, La Libertad Department	5,200
Do.	do.	Consorcio Minero Horizonte S.A. (private, 100%)	Parcoy, La Libertad Department	4,000
Do.	do.	Cía. Minera Sipán S.A. (private, 100%)	Sipán, Inca, La Libertad Department	4,800
Do.	do.	Cía. Minera Ares S.A. (private, 100%)	Ares, La Libertad Department	5,200
Do.	do.	Cía. Minera Aurífera Santa Rosa S.A. (private, 100%)	Santa Rosa, Puno Department	3,000
Iron ore		Shougang Hierro Perú S.A. (Shougang Corp., 100%)	Marcona, Ica Department	13,000

See footnotes at end of table.

TABLE 2--Continued  
PERU: STRUCTURE OF THE MINERAL INDUSTRY IN 2000

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Lead		Doe Run Resources Corp. (private, 100%)	Smelter at La Oroya	93
Do.		do.	Refinery at La Oroya	95
Do.		Glencore International AG (private, 100%)	Casapalca, Lima Department	60
Do.		Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	70
Do.		do.	Paragsha, Cerro de Pasco Department	85
Do.		Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	5
Do.		Cía. Minera Atacocha S.A. (private, 100%)	Yanacancha Mine, Junín Department	40
Do.		Cía. Minera Milpo S.A. (private, 100%)	El Porvenir Mine, Pasco Department	20
Do.		Cía. Minera Santa Luisa S.A. (private, 100%)	Huanzalá Mine, Junín Department	40
Molybdenum		SPCC	Cuajone, Moquegua Department and Toquepala, Tacna Department	NA
Petroleum, crude 42-gallon barrels per day		Petrotech del Perú S.A. (Petroperú, 100%)	Onshore Piura Department; northeast and central jungle areas, Loreto Department	68,000
Do.	do.	Perez Compans S.A. (Petroperú, 100%)	Pacific Coast, offshore Piura Department	30,000
Do.	do.	Pluspetrol S.A. (private, 100%)	Northeastern jungle, Loreto Department	90,000
Do.	do.	Occidental Petroleum Corp. (private, 100%)	Block 1-AB, northern jungle, Loreto Department	28,000
Petroleum products	do.	Petroperú	Refineries at Talara, Lima, Iquitos, Marsella, and Pucallpa	185,500
Natural gas		Pluspetrol S.A. (private, 100%)	Camisea gas deposit, Cusco Department	NA
Silica sand		Minera Baribent S.A. (private, 100%)	María G. and Martín I., Junín Department	27
Silver	kilograms	Glencore International AG (private, 100%)	Casapalca, Lima Department	65,000
Do.	do.	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	809,000
Do.	do.	Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	46,500
Do.	do.	Cía. de Minas Buenaventura S.A. (Buenaventura) (private, 83%; Centromin 17%)	Julcani and Huachocolpa Mines, Huancavelica Department; Uchucchacua Mine, Lima Department	300,000
Do.	do.	Cía. de Minas Orcopampa S.A. (Buenaventura, 100%)	Orcopampa Mine, Arequipa Department	161,000
Do.	do.	Cía. Minera Volcán S.A. (private, 100%)	San Cristóbal, Mahr Túnel, and Andaychagua,	325,000
Do.	do.	Sociedad Minera Corona S.A. (private, 100%)	Hualgayoc, Cajamarca Department	175,000
Do.	do.	Cía. Minas Arcata S.A. (private, 100%)	Arcata, Arequipa Department	170,000
Do.	do.	SPCC	Ilo smelting and refining, Moquegua Department	150,000
Do.	do.	Cía. Minera Santa Luisa S.A. (private, 100%)	Huanzalá Mine, Junín Department	53,000
Do.	do.	Cía. Minera Raura S.A. (private, 100%)	Raura, Lima Department	54,000
Do.	do.	Cía. Minera Nor Perú S.A. (private, 100%)	Quiruvilca, La Libertad Department	128,000
Do.	do.	Cía. Minera Milpo S.A. (private, 100%)	Yanacancha, Cerro de Pasco Department.	97,000
Steel		Empresa Siderúrgica del Perú (Acerco S.A., 100%)	Chimbote, Ancash Department	550
Do.		Empresa Laminadora del Pacífico S.A. (private, 100%)	Pisco, Ica Department	180
Tellurium	metric tons	Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	12
Tin, ore	metric tons per day	Minsur S.A. (private 100%)	San Rafael Mine, Puno Department	2,500
Tin, metal	metric tons	do.	Pisco smelting and refining, Ica Department	40,000
Tungsten	do.	Minera Regina S.A. (private, 100%)	Palca XI, Puno Department	1,400
Do.	do.	Fermín Málaga Santolalla S.A. (private, 100%)	Pasto Bueno, Ancash Department	1,000
Zinc		Cía. Minera Volcán S.A. (private, 100%)	Cerro de Pasco, Cerro de Pasco Department; San Cristóbal, Mahr Túnel, and Andaychagua, Junín Department	275
Do.		Empresa Minera Iscaycruz S.A. (Glencore International, 100%)	Iscaycruz, Lima Department	100
Do.		Empresa Minera Yauliyacu S.A. (Glencore International, 100%)	Casapalca, Lima Department	40
Do.		Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	Yauricocha, Junín Department	80
Do.		Doe Run Resources Corp. (private, 100%)	Refinery at La Oroya	70
Do.		Refinería Cajamarquilla S.A. (Cominco Ltd. of Canada, 87%; Marubeni Corp. of Japan, 13%)	Refinery at Cajamarquilla, Lima Department	120
Do.		Cía. Minera San Ignacio de Morococha S.A. (private, 100%)	San Vicente Mine, Junín Department	70
Do.		Cía. Minera Atacocha S.A. (private, 100%)	Yanacancha Mine, Junín Department	60
Do.		Cía. Minera Raura S.A. (private, 100%)	Raura, Lima Department	45
Do.		Corp. Minera Nor Perú S.A. (Pan American Silver Corp., 100%)	Quiruvilca, La Libertad Department	25
Do.		Cía. Minera Santa Luisa S.A. (private, 100%)	Huanzalá Mine, Junín Department	20
Do.		Cía. Minera Milpo S.A. (private, 100%)	Yanacancha, Cerro de Pasco Department	60

NA Not available.