

2009 Minerals Yearbook

TURKEY

THE MINERAL INDUSTRY OF TURKEY

By Philip M. Mobbs

Turkey has a diverse mineral industry and a long history (nearly 9,000 years) of metal mining. While there are many mineral deposits, most are of modest size, which limited their attraction to international companies and financing. Turkey was the world's leading producer of boron minerals, feldspar, and pumice and a significant producer of barite, bentonite, chromite, kaolin, limestone, magnesite, marble, and perlite. The country also was a significant source of value-added processed mineral commodities, such as cement, ceramics, ferrochromium, glass, and steel. The volume of hydrocarbons produced in Turkey was small, but the country was a significant transit corridor for crude oil and natural gas shipments. Except for formal company names, anglicized versions of names and places are used in this report (Angulo, 2010; Bolen, 2010; Cordier, 2010; Crangle, 2010; Kramer, 2010; Miller, 2010; Mining Journal, 2010, p. 2, 8; Papp, 2010; van Oss, 2010; Virta, 2010; World Steel Association, 2010).

Minerals in the National Economy

Turkey's gross domestic product (GDP) at current prices was \$617.6 billion¹ (954 billion Turkish lira) in 2009. At constant prices (with a base year of 1998), the real GDP was about \$62.9 billion in 2009 and about \$79.9 billion in 2008. The mining and quarrying sector accounted for about 0.8% of the real GDP in 2009 and 2008. The construction sector accounted for 5.6% of the real GDP in 2009 compared with 5.9% in 2008 and 6.49% in 2007 (Türkiye İstatistik Kurumu, 2009; 2010d, e).

Government Policies and Programs

Article 168 of the Constitution (1982) and the Mining Law of June 15, 1985 (Maden Kanunu, law No. 3213) declare that natural resources, such as minerals, belong to the state and are not considered to be part of the land where they are found. Law No. 5177 of 2004 (which amends the 1985 mining law), the Regulation Concerning the Implementation of the Mining Law (which was issued in 2005), the Mining Activities Permitting Regulation of 2005, and the Law on Boron Minerals, Trona and Asphaltit Mines and Exploitation of Nuclear Energy Raw Materials No. 3971 of February 19, 1994, also regulate mining activity in Turkey. The Government issues licenses to Turkish individuals or legal entities to explore for minerals or operate mines for a specific period of time. The Foreign Direct Investment Law of June 2003 (law No. 4875) authorizes foreign investors to establish companies in Turkey that can hold mining rights under the Mining Law. The Türkiye Büyük Millet Meclisi [Grand National Assembly of Turkey] (the Parliament) was expected to pass legislative amendments in 2010 that would address mining-related issues, such as the

Constitutional Court's abolishment in 2009 of Article 7 of the Mining Law.

The Maden İşleri Genel Müdürlüğü (MIGEM) [General Directorate of Mining Affairs] of the T.C. Enerji ve Tabii Kaynaklar Bakanlığı [Ministry of Energy and Natural Resources] regulates the mining industry. The T.C. Çevre ve Orman Bakanlığı [Ministry of Environment and Forestry] enforces the Environmental Law of 1983 (law No. 2872) and the Regulation on Environmental Impact Assessment of December 16, 2003.

The petroleum sector is regulated by the Enerji İşleri Genel Müdürlüğü [General Directorate of Energy Affairs] of the Ministry of Energy and Natural Resources under the Petroleum Law of 1954 (law No. 6326). The distribution, export, import, refining, and sale of petroleum are licensed under and regulated by the Petroleum Market Law of 2003 (law No. 5015). The distribution, export, import, and transmission of natural gas are regulated by the Natural Gas Market Law of 2001 (law No. 4646), as amended by law No. 5367 of 2005. The marketing of domestic and imported liquefied petroleum gases is regulated by the Liquefied Petroleum Gases (LPG) Market Law of 2005 (law No. 5307).

MIGEM, Maden Tetkik ve Arama Genel Müdürlüğü) (MTA) [General Directorate of Mineral Research and Exploration], Türkiye Kömür İşletmeleri Kurumu Genel Müdürlüğü (TKI) [General Directorate of Turkish Coal Enterprises], and Türkiye Taşkömürü Kurumu Genel Müdürlüğü (TTK) [General Directorate of Turkish Hard Coal Enterprises] formed the Coal Reserve Assessment Commission, which in 2009 continued to assess Turkish coal reserves.

Production

Significant increases in production in 2009 were reported for bauxite, crude oil, fluorite, gold, hard coal, magnesite, manganese ore, marble, quartz and quartzite, rutile, salt, silica sand, silver, talc, travertine, and zeolite. Production of nitrogen (ammonia) was also estimated to have increased. Notable decreases in production in 2009 were reported for aluminum, alunite, antimony ore, barite, basalt, bentonite, boron ore, carbon black, chromium, common clay, blister and refined copper, diatomite, dolomite, emery, feldspar, glass, granite, graphite, gypsum, iron ore, mica, natural gas, peat, pumice, and refined petroleum products, and were estimated for alumina and sulfur (table 1).

Structure of the Mineral Industry

Government institutions involved in the mineral sector that were attached to the Ministry of Energy and Natural Resources included the MTA, which conducted base geologic and geophysical surveys in Turkey and mining research; the Petrol İşleri Genel Müdürlüğü (PIGM) [General Directorate of Petroleum Affairs], which collected information about

¹Where necessary, values have been converted from Turkish lira to U.S. dollars at the rate of TL1.5446=US\$1.00 for 2009, and TL1.2809=US\$1.00 for 2008.

petroleum exploration and production activity in Turkey; and the Türkiye Atom Enerjisi Kurumu Başkanliği [Turkish Atomic Energy Authority], which was responsible for policy development and the coordination of and the supervision of scientific and technical activities in the nuclear sector.

The Ministry's related institutions included Boru Hatlari Ile Petrol Taşima A.Ş. Genel Müdürlüğü (BOTAS) [Petroleum Pipeline Corp.], which imported, transported, and sold natural gas, and also transported petroleum; the Elektrik Üretim A.Ş. Genel Müdürlüğü [General Directorate of Electricity Generation Corp.], which produced electricity; Eti Maden İşletmeleri Genel Müdürlüğü, which retained exclusive rights to explore for and to develop boron deposits according to law No. 2840 of 1983; the TKI, which mined lignite and subbituminous coal; Türkiye Petrolleri Anonim Ortakliği Genel Müdürlüğü (TPAO) [Turkish Petroleum Corp.], which explored for, produced, marketed, and refined crude oil; and the TTK, which mined anthracite and bituminous coal. The country's industrial minerals and metals were predominantly produced by private sector companies, which also produced some coal and hydrocarbons.

In 2009, 10,377 mining license applications were filed and 5,866 licenses were issued. Total licenses in effect at yearend included 33,407 prospecting licenses, 10,818 operating licenses, and 156 preliminary operation licenses (which were issued for the extraction of ore during exploration and mine development stages). Most (19,558) of the active licenses were for quarrying of stone, such as basalt, granite, limestone, marble, and travertine. Of this amount, 17,029 licenses were for industrial minerals (excluding clay for brick and roofing tile, rock used for cement, precious stones, salt, and sand and gravel), metals, and mineral fuels. Other licenses in effect included 945 for clay for brick and roofing tile and rock used for cement, 195 for salt, 165 for precious stones, and 108 for sand and gravel. Public institutions also held an additional 3,348 licenses for raw material production (Ministry of Energy and Natural Resources, 2010, p. 39).

In October, C.V.K. Group (which was a subsidiary of the Çevikler Group of Turkey), Jizhong IMC Industry and Trade Company, Ltd. of China, and Taiyuan Iron & Steel (Group) Company, Ltd. of China formed a joint venture to develop chromite projects in Turkey. In December, Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu of Turkey completed the acquisition of Aslan Çimento A.Ş. from Lafarge S.A. of France. Table 2 lists notable mineral commodity production and processing facilities.

Mineral Trade

In 2009, total Turkish exports of goods were valued at about \$102 billion compared with \$132 billion in 2008. The challenging market conditions resulted in the decrease in the value of most mineral-related commodities exports from Turkey in 2009 compared with that of 2008, although an increase in the value of exports was noted for several commodities, which included antimony ore, bentonite, cobalt ore, diatomaceous earth, marble and travertine blocks, meerschaum, phosphate rock, precious metals (such as gold and silver), salt, and talc. Exports of all manufactured goods, which included those

based on metals and industrial minerals, were valued at about \$95 billion in 2009 compared with \$125 billion in 2008. Increases in export values were noted for ferrochrome and for the jewelry and precious stone sector. Exports of the mining and quarrying sector were valued at about \$1.7 billion in 2009, which was down from about \$2.2 billion in 2008 (Türkiye İstatistik Kurumu, 2010a, c; İstanbul Maden ve Metallar İhracatçi Birlikleri Genel Sekreterliği, undated).

Of the total exports in 2009, iron and steel accounted for \$7.6 billion compared with \$14.9 billion in 2008; jewelry and precious or semiprecious stones, \$5.9 billion compared with \$5.3 billion in 2008; mineral fuels, \$3.9 billion compared with \$7.5 billion in 2008; aluminum and aluminum articles, \$1.4 billion compared with \$1.8 billion in 2008; building stone (crude and processed), about \$1.2 billion compared with about \$1.4 billion in 2008; glass and glassware, about \$828 million compared with \$1 billion in 2008; chromium ore, about \$263 million compared with \$496 million in 2008; copper ore and concentrates, about \$287 million compared with \$320 million in 2008; and boron ore and concentrates, about \$105 million compared with about \$190 million in 2008 (Türkiye İstatistik Kurumu, 2010a; İstanbul Maden ve Metallar İhracatçi Birlikleri Genel Sekreterliği, undated).

Total imports were valued at about \$141 billion compared with about \$202 billion in 2008. Mineral fuels accounted for about \$29.9 billion compared with about \$48.3 billion in 2008, and iron and steel, about \$11.3 billion compared with about \$23.2 billion in 2008. A significant percentage of the iron and steel imports was steel scrap (Türkiye İstatistik Kurumu, 2010b).

Commodity Review

Metals

Copper.—Eti Bakir A.Ş., which was a subsidiary of Cengiz Holding, was the leading copper producing company in Turkey. The mines at the Murgul facility had an ore capacity of 2.7 million metric tons per year (Mt/yr); the ore was concentrated for shipment to the company's copper smelter, which was located at Tekkekov in Samsun Province. The Kastamonu Kure operations had an ore capacity of 1 Mt/yr, which was concentrated for shipment to the Samsun smelter. In 2009, Çayeli Bakır İşletmeleri A.Ş., which was a subsidiary of Inmet Mining Corp. of Canada, mined 1.15 million metric tons (Mt) of ore from the underground Cayeli Mine to produce a copper concentrate that contained 29,200 metric tons (t) of copper, and a zinc concentrate. Park Elektrik Üretim Madencilik San. ve Tic. A.Ş. (formerly Park Elektrik Madencilik San. ve Tic. A.Ş.) mined copper at Siirt Madenköy. In 2009, Park produced 63,138 t of copper concentrate. In April, Park merged with another Ciner Group company, Ceytas Madencilik Tekstil San. ve Tic. A.Ş. Ceytas had started to produce asphaltite at Silopi in 2009. Demir Export A.Ş., which was a subsidiary of Koç Holding A.Ş., produced about 10,000 metric tons per year (t/yr) of concentrates that contained copper and zinc from the Lahanos Mine in Giresun Province. In 2009, production of copper anode was suspended at the KBI smelter in Samsun,

and the significant decrease in Turkish refined copper was attributed to the global financial crisis (Demir Export A.Ş., 2009; Inmet Mining Corp., 2010, p. 28; Park Elektrik Üretim Madencilik San. ve Tic. A.Ş., 2010, p. 20, 24; Eti Bakir A.Ş., undated).

Pontid Madencilik San. ve Tic. Ltd., which was an indirect subsidiary of a joint venture of Ariana Resources PLC of the United Kingdom and European Goldfields Ltd. of the United Kingdom, drilled the Ardala copper-gold prospect and trenched the Salibas prospect on the Greater Pontides Project in northeastern Turkey. Centerra Gold Inc. of Canada formed a joint venture with KEFI Minerals Plc of the United Kingdom to explore the Bakir Tepe copper-gold prospect where a 5-hole drill program was started in December. There was no exploration activity in 2009 on the Berta prospect by the joint venture of Nuinsco Resources Ltd. of Canada and Xstrata Copper Canada, nor on Nuinsco's Elmalaan property (KEFI Minerals Plc, 2010, p, 12; Nuinsco Resources Ltd., 2010, p. 17-18, 22).

In 2008, Cloudbreak Resources Ltd. of Canada withdrew from the option to acquire 65% interest in the Ikiztepe-Sarp copper property from Valhalla Resources Ltd. of Cyprus in order to pursue coal and potash property development opportunities in Canada. Aldridge Minerals Inc. of Canada subsequently started merger proceedings with Valhalla but withdrew from the acquisition in March 2009 because of adverse financial conditions associated with the international economic crisis (Cloudbreak Resources Ltd., 2008, p. 7; Aldridge Minerals Inc., 2009).

Gold.—Koza Altın İşletmeleri A.Ş. operated four mines and produced 7,091 kilograms (kg) of gold and 6,594 kg of silver in 2009. The Ovacik mill, which was located about 500 kilometers (km) west of Ankara, processed ore from the underground Ovacik Mine. Ovacik's output of ore decreased to 170,776 t in 2009 from 235,886 t in 2008. The mill also processed ore from the Kucukdere open pit mine, which produced 807,838 t of ore in 2009 compared with 654,018 t in 2008 (Koza Altın İşletmeleri A.Ş. , 2010, p. 32, 34).

Koza Altin's Mastra mill, which was located about 550 km east of Ankara, began operations in March. The mill processed high-grade ore mined from the small Gicik deposit and the output from the open pit and the underground operations of the Mastra Mine. The Gicik open pit mine, which was located 800 km from the Mastra mill, began operations in 2009, and the resources had been mined out by yearend. Lower grade ore from Gicik was stockpiled for eventual transportation to the proposed Kaymaz mill, which was located about 150 km east of Ankara. The Kaymaz mill was expected to open in 2011 (Koza Altın İşletmeleri A.Ş., 2010, p. 18, 33-34).

Koza Altin also was developing an open pit and underground mining project at Cukuralan, which was located about 40 km from the Ovacik mill. The 11-Mt/yr-capacity Cukuralan open pit was scheduled to begin mining operations in 2010, and the underground operations were expected to begin in 2011. At Kaymaz, Koza Altin had a mine and processing plant under construction. The mine was expected to start up in late 2010, and the mill, with a capacity of 400,000 t/yr, was expected to begin operations in 2011. Koza Altin started an evaluation of the Mollakara project, which was located about 900 km

east of Ankara, and was exploring numerous prospects across Turkey. Koza Altin held about 500 exploration licenses; active exploration prospects included the Agadeve, the Bulancak, the Buyukpinar, the Cakilli Tepe, the Ciftehan, the Coraklik Tepe, the Gediz, the Gelin Tepe, the Hapan, the Himmetdede, the Isikdere, the Kaoikaya, the Kiratli, the Kurtkoy, the Narlica, the Sogut, and the Torul. In 2009, Koza Altin applied to sell 30% of its stock in an initial public offering (Koza Altın İşletmeleri A.Ş., 2009; 2010, p. 35; Mining Journal, 2010, p. 10).

Tüprag Metal Madencilik San. ve Tic. A.Ş., which was a subsidiary of Eldorado Gold Corp. of Canada, operated the open pit Kisladag Mine, which was located about 350 km southwest of Ankara. In 2009, the Sixth Department of the High Administrative Court referred the litigation that had been filed against the Ministry of Environment and Forestry and Tüprag concerning the mine's environmental certificate to a lower administrative court.

At Kisladag, Tüprag produced about 10.6 Mt of ore in 2009 from which about 7,378 kg of gold was produced. The mine had produced 5,920 kg of gold in 2008 and about 4,200 kg in 2007. Operations at the mine, however, had been suspended from August 18, 2007, until March 6, 2008, because of the environmental certificate litigation. In 2009, the mine's heap-leach pad was expanded and the adsorption-desorption refinery facility was renovated (Eldorado Gold Corp., 2009, p. 7; 2010, p. 8, 20, 23).

Tüprag continued with the construction of the Efemcukuru underground gold mine. The mine, which was located about 550 km southwest of Ankara, was expected to produce about 3,000 kg of gold in 2011. Tüprag completed a 13-hole reserve-definition drill program at Kisladag, which extended the deposit's area and grade and resulted in a 23% increase in proven and probable reserves. At Efemcukuru, the evaluation of a 44-hole reserve definition drill program resulted in an increase in gold resources and reserves. Tüprag's other activity included an 11-hole drill program at the Sayacik prospect, a 6-hole drill program at the AS prospect, and exploration of the Arpali, the Dolek, the Galata, the Konya-Sizma, the MH, and the Usak-Elence projects (Eldorado Gold Corp., 2010, p. 12, 20-22).

Pomzaexport Madencilik San. ve Tic. A.Ş. of Turkey operated the Sardes placer mine in Manisa Province. The Copler open pit mine and heap leach operation were under construction for Cukurdere Madencilik San. ve Tic. A.S., which was a subsidiary of Anatolia Minerals Development Ltd. of Canada. In 2009, a mining contractor began to remove overburden from the oxide deposit, which was located about 550 km east of Ankara. Initial gold production was expected in late 2010, with full commercial production scheduled for 2011. Anatolia Minerals proceeded with a preliminary feasibility study of the development of the gold sulfide ore that was located below the oxide ore. Also in 2009, Anatolia Minerals formed a strategic relationship with Calık Maden İşletmeleri A.Ş. in which Calık acquired 5% interest in Çukurdere Madencilik and the Copler project. Calık retained the option to acquire an additional 15% equity interest by yearend 2011 (Anatolia Minerals Development Ltd., 2010, p. 3-7).

Other exploration activity for gold included that of Aldridge Minerals, which continued its evaluation of the Yenipazar project and secured an option to acquire 70% interest in the

Derinkov property from European Goldfields. In 2009, Ariana Resources PLC of the United Kingdom combined its projects in the Sindirgi gold corridor, which was located about 130 km northeast of Izmir, and at Tavsan, which was located about 210 km northeast of Izmir, and renamed them the Red Rabbit project. Ariana's trial mining of 5,177 t of ore from Kiziltepe, which was located in the Sindirgi sector of the project, was processed by Eti Gümüş A.S. to produce 12 kg of gold. Ariana subsequently formed a joint-venture company with Procea Construction Co. to develop the Red Rabbit project. In 2009, Ariana also acquired the Muratdag gold-nickel project from the joint venture of Lydian International Ltd. of the Channel Islands [United Kingdom] and Newmont Altin Madencilik Limited Sirketi, which was a subsidiary of Newmont Mining Corp. of the United States (Aldridge Minerals Inc., 2010, p. 2-3; Ariana Resources PLC, 2010, p. 8-10).

The joint venture of Centerra and Eurasian Minerals Inc. of Canada drilled the Elmali and the Samli prospects in 2009. The Samli license was dropped after the drill results proved to be negative. The joint venture of Centerra and KEFI Minerals drilled the Yanikli prospect and sampled the Uzumlu prospect on the Artvin prospect. In 2009, Centerra and Eurasian Minerals formed a joint venture to evaluate the Akarca property, and Centerra and Stratex International plc of the United Kingdom formed a joint venture to explore and develop the Oksut project. The Centerra-Stratex joint venture completed a 3-hole drill program at Oksut by yearend (Centerra Gold Inc., 2010, p. 47).

The joint venture of Chesser Resources Ltd. of Australia (51% interest) and Eurasian Minerals (49%) completed a drilling program on the Sisorta license, which was located in northeastern Turkey. The joint venture received an operating license for a proposed open pit mine that would produce 670,000 t/yr of ore and started an environmental impact study application. Chesser also received permits to advance exploration activities on the Karaayi and the Kestanelik prospects and continued reconnaissance exploration of the Domu, the Kabatas, the Topcam, and the Saphane prospects (Chesser Resources Ltd., 2009, p. 2; 2010, p. 2, 5).

Mediterranean Resources Ltd. of Canada continued exploration on the Yusufeli gold project, which included the Celtik, the Cevreli, the Corak, and the Tac prospects. In December 2008, a letter of intent to form a joint venture to develop the project with Cengiz Holding was signed. The joint-venture agreement was allowed to expire in February 2009. Mediterranean subsequently received an updated resource estimate for the Corak and the Tac prospects and drilled the Celtik prospect. The scheduled development of the Yusufeli dam and hydroelectric powerplant, which would result in the flooding of some of the Coruh River valley, was not expected to affect the Yusufeli gold properties significantly (Mediterranean Resources Ltd., 2008; 2009, p. 2; 2010, p. 1; undated).

A subsidiary of Metro Ticari ve Mali Yatirimlar A.Ş. acquired 78% equity interest in BYS Metal Madencilik San. ve Tic. A.Ş., which held gold and mercury assets. Oremine Resources of Turkey explored several gold prospects, including the Akhisar, the Ayvalik, the Bayramic, the Bigadic, the Gokceada Island, the Kepsut, and the Kisacik projects. The joint venture of NTF Imsaat Ticaret Limited Şti. of Turkey (55%) and Stratex (45%)

was formed to develop the Altinepe and the Inlice gold projects. In 2010, the joint venture planned an additional exploration drilling program at Altintepe and expected that an ongoing environmental study of the prospect would be completed. A feasibility study of the Inlice project started and was expected to be completed by 2010. Stratex was seeking partner companies to explore the gold projects at Altunhisar and Karaagac, and in the Konya volcanic belt (which included the Doganbey, the Golcuk, the Karacaoren, and the Kozlu targets) (Stratex International plc, 2010, p. 7-10).

The joint venture of the Canadian companies Teck Resources Ltd. (60%) and Fronteer Development Group Inc. (40%) received the operating license and forestry permits for the Halilaga project in 2009. Teck funded a 5,000-meter (m) drill program, which was completed in January 2010, and the joint venture planned to begin a 10,000-m drill program in mid-2010. The Teck/Fronteer joint venture agreed to sell the Agi Dagi and the Kirazli gold projects and certain Turkish subsidiary companies to Alamos Gold Inc. of Canada. In 2009, the Strategic Alliance Agreement between Stratex and Teck was dissolved, but Teck agreed to acquire 51% interest in the Hasancelebi project from Stratex. An exploratory drill program at Hasancelebi was planned for 2010 (Fronteer Development Group, Inc., 2010, p. 8-9; Stratex International plc, 2010, p. 9; Teck Resources Ltd., 2010, p. 2)

Iron and Steel.—About 70% of Turkish crude steel was produced by the 21 steel companies that used electric arc furnaces (EAFs) primarily to melt steel scrap. The three integrated plants that used blast furnaces to melt iron ore included Ereğli Demir ve Çelik Fabrikalari T.A.Ş. (Erdemir), Iskenderun Demir ve Çelik A.Ş. (Isdemir), and Karabük Demir Çelik Sanayi ve Ticaret A.Ş. (Kardemir). Bilecik Demir Çelik Sanayi ve Ticaret A.Ş. and İlhan Metalurji A.Ş. used induction furnaces to melt scrap in order to produce steel.

In 2009, Erdemir continued work on the renovation of cold-rolling mill No. 2, which was scheduled to be completed by 2011, and received bids for the modernization of hot-strip-rolling mill No. 1, which was expected to be completed by 2012. The company proposed to reline blast furnace No. 2 by 2012 and to build Erdemir coke battery No. 4 by 2014. Isdemir, which was a subsidiary of Erdemir, installed an additional converter with 200 t of capacity, which raised the plant's liquid steel capacity to 4 Mt/yr. Also in 2009, Isdemir completed the installation of cutting and slitting lines at its hot-strip-rolling mill. The installation of the 3.2-Mt/yr-capacity iron sinter plant No. 2 at Isdemir was expected to be completed by 2011. Work continued on the installation of the 2.2-Mt/yr-capacity blast furnace No. 4 and the renovation of Isdemir coke battery No. 4, which were expected to be operational by 2012. Planning for the construction of an EAF facility at Isdemir by late 2014 also was underway (Ereğli Demir ve Çelik Fabrikalari T.A.Ş., 2010, p. 32, 34; Ordu Yardımlaşma Kurumu, 2010, p. 14).

Iron Ore.—Erdemir Madencilik Sanayi ve Ticaret A.Ş. and Hekimhan Madencilik İthalat İhracat Sanayi ve Ticaret A.Ş. produced most of the iron ore in Turkey. Demir Export also mined iron ore at the Samili Mine in Balikesir Province; the Uzunpinar Mine in Kayseri Province; and the Centinkaya, the Otlukilse, and the Purunsur Mines in Sivas Province.

Erdemir Madencilik decided to develop the Ekinbasi underground iron ore mine and expected that initial production operations would begin in 2011. The company's Hasancelebi iron ore pelletizing plant was scheduled to start production in 2013. Demir Export was exploring the Elkondu iron ore project in Sivas Province. In 2009, Ataç Madencilik Limited Şti., which was a subsidiary of B&S Yatırım A.Ş., acquired the rights to mine magnetite in the Keban region of Elazig Province. Atak planned to develop an open pit iron ore mine with an annual capacity of 200,000 t/yr of ore within a grade of 55% to 58% iron (Ereğli Demir ve Çelik Fabrikalari T.A.Ş., 2010, p. 32, 34; B&S Yatırım A.Ş., undated).

Lead and Zinc.—The Cayeli copper-zinc mine of Çayeli Bakır produced a zinc concentrate that contained 50,900 t of zinc in 2009. In addition, Çankkale Madencilik Limited Şti. mined about 200,000 t/yr of lead-zinc ore from the Koru Mine in Canakkale Province in northwestern Turkey to produce a concentrate that contained about 4,800 t of zinc and 2,400 t of lead. Smaller scale lead-zinc mining operations were found in the Kayseri and the Nigde Provinces of south-central Turkey and in the Hakkari area of southeastern Turkey (Inmet Mining Corp., 2010, p. 28; Çankkale Madencilik Limited Şti., undated; Eti Bakir A.S, undated).

Dedeman Madencilik Tic. ve San. A.Ş. produced about 90,000 t/yr of lead-zinc ore from the Delikkaya and the Yesil Hisar Cadirkaya Mines in Kayseri Province. Oxide ores with a grade greater than 25% were exported. Lower grade oxide ore and sulfide ore were processed at the Cadirkaya plant (Hanilçia and Öztürka, 2010, p. 14; Dedeman Madencilik Tic. ve San. A.S., undated).

In the Hakkari area, Meskan Ölmez Madencilik Harfiyat İnşaat yol Yaprim Petrol Ürünleri İthalat İhracat Nakliye Taahüt San. ve Tic. reportedly produced about 60,000 t/yr of lead-zinc ore with a metal content that ranged from about 27% to 35% zinc and 4% to 6% lead in 2009. Elkin Maden Tic. ve San. A.Ş. and Seyitoğlu Madencilik A.Ş. mined lead-zinc ore. Esan Eczacıbaşı Gayrimenkul Geliştirme ve Yatırım, which was a subsidiary of Eczacıbaşı Holding A.S., was redeveloping the Balya-Balikesir Mine. The mine, which had opened in 1860, had closed in 1940 owing to low lead prices in the 1930s. Red Crescent Resources Holding A.Ş. formed a joint venture with Seyitoğlu Madencilik to explore for zinc on licenses in the Hakkari area (Dolgun, 2009; MSA Group (Proprietary) Ltd., The, 2010, p. 1, 63).

Turkish plants that melted recycled steel scrap in EAFs to produce crude steel also generated about 300,000 t/yr of electric arc furnace dust (EAFD) that contained zinc. In January 2008, Metoks Madencilik Metalurji Taşımacılık San. ve Tic. A.Ş. began processing EAFD at a 60,000-t/yr-capacity Waelz kiln near Iskenderun, which was located about 470 km southeast of Ankara. Metoks expected to recover about 12,000 t/yr of zinc in clinker with lead and silver coproducts. The global economic crisis, however, resulted in a significant decrease in international zinc prices in 2008, which in turn resulted in the closure of the new Metoks facility in September 2008. Silvermet Inc. of Canada acquired the operation in February 2009 and restarted production in May. By December 2009, zinc prices had returned nearly to the levels at the start of 2008. Silvermet

ceased production of zinc clinker and started producing a washed zinc oxide concentrate, the production of which had lower energy requirements. In 2009, Silvermet recovered about 7,300 t of zinc in concentrate from processing the EAFD (Silvermet Inc., 2008; 2009a, b; 2010; ZincOx Resources plc, 2010, p. 9; London Metal Exchange Ltd., undated).

ZincOx Resources plc of the United Kingdom owned a site near Aliaga in western Turkey, which was located about 500 km southwest of Ankara, and held a permit to treat 200,000 t/yr of EAFD in order to recover zinc. ZincOx, however, pursued opportunities to process EAFD in Korea and Thailand in 2009 (ZincOx Resources plc, 2010, p. 9).

Nickel.—European Nickel PLC of the United Kingdom received a forestry permit for the Caldag Mine in February. Development operations at the mine had been suspended in 2007 pending the receipt of the permit. European Nickel signed a project finance agreement with China Tianchem Engineering Corp. and Jiangxi Rare Earth and Rare Metals Tungsten Group Corporation Ltd. of China. European Nickel and BHP Billiton negotiated a termination of their nickel ore offtake agreement; Jiangxi Rare Earth and Rare Metals subsequently signed an agreement to secure 100% of Caldag's output. Litigation against various licenses and permits that the Government issued for the Caldag project continued to be filed in the District Administrative Court (European Nickel PLC, 2010, p. 1-5).

Meta Nikel Kobalt A.Ş. of Turkey continued its evaluation of the Gordes nickel project, which was located about 400 km southwest of Ankara, and the Yunusemre nickel project, which was located about 120 km southwest of Ankara. Exploration of Aldridge Minerals' Murat Dag nickel laterite project remained suspended in 2009 because of the dramatic decline in nickel prices in 2008 (Aldridge Minerals Inc., 2010, p. 3).

Industrial Minerals

Boron.—In 2009, Eti Maden İşletmeleri Genel Müdürlüğü expanded its boron products capacity to 1,365,000 t from 1,272,000 t. New facilities included an 80,000-t/yr-capacity borax decahydrate/pentahydrate plant at Kirka, as well as an 8,000-t/yr-capacity disodium octaborate tetraborate plant at Bandirma. Eti Maden expected to increase its boron products capacity to 2,158,000 t by 2013. Planned projects at Bandirma included a boron oxide plant and the modernization of the borax plant and the boric acid plant. An ore concentrator and grinding plant were proposed to be installed at the Bigadic mining operation. A capacity expansion of the boric acid plant at Emet was planned, as was the construction of another borax pentahydrate plant at Kirka. Much of Eti Maden's boron output was used by the glass industry (69%) and the ceramics industry (12%) (Eti Maden İşletmeleri Genel Müdürlüğü, 2010, p. 13, 41, 52, 58-59).

Feldspar and Quartz.—Turkey was the world's leading producer of feldspar. Several companies, which included Camiş Madencilik A.Ş. (a subsidiary of Türkiye Şişe ve Cam Fabrikaları A.Ş.); Çine Akmaden Madencilik Ticaret A.Ş., which was a subsidiary of SCR-Sibelco NV of Belgium; Esan Eczacıbaşı; Kalemaden Endüstriyel Hammaddeler San. ve Tic. A.S.; Kaltun Madencilik San. ve Tic A.S.; Polat Maden

San. ve Tic. A.Ş.; and Standart Madencilik A.Ş., which was a subsidiary of B&S Yatırım, produced feldspar for the domestic and international ceramic and glass industries. Many of the companies also produced quartz (Cordier, 2010).

Soda Ash.—In March, Eti Soda Inc., which was a subsidiary of the Ciner Group and Eti Maden, started production of soda ash at Beypazari. The plant had the capacity to produce 1 Mt/yr of soda ash, 100,000 t/yr of sodium bicarbonate, and 30,000 t/yr of caustic soda. In 2009, the plant produced 177,303 t of soda ash as operations were ramped up (Ciner Group, 2009; Eti Maden İşletmeleri Genel Müdürlüğü, 2010, p. 70).

Soda Sanayii A.Ş. produced 902,000 t of soda ash in 2009 and continued work on the 200,000 t/yr expansion of the production capacity of the Mersin soda ash plant. The increased capacity was expected to be commissioned in 2010 (Soda Sanayii A.Ş., 2010, p. 7).

Outlook

Turkey has significant resources of bentonite, boron, lignite, marble, and perlite. Most mining activity is performed by mining subsidiaries of domestic conglomerates, construction companies, metal and mineral traders, or small family-owned companies. Mining law No. 5177 of 2004 and other regulations have attracted international mining company interest, but most international investor interest remains focused on the development of metals. The partial recovery of mineral prices in 2009 and the extensive exploration activity are expected to encourage a notable surge in production in the near term (Ersçen, 1989).

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$\label{eq:table 1} TABLE~1$ TURKEY: PRODUCTION OF MINERAL COMMODITIES 1

(Metric tons unless otherwise specified)

Commodity	2005	2006	2007	2008 ^e	2009 ^e
METALS		60.000	65.000	65.000	25.000
Aluminume	60,000	60,000	65,000	65,000	35,000
Antimony. ^e					
Ore, mine output:		27.000	20.000	50.255 r.2	240152
Gross weight	28,000	25,000	28,000	50,357 ^{r, 2}	24,917 2
Sb content	1,400	1,250	1,400	2,500 ^r	1,200
Concentrates:	5,000	4.500	5,000	10,000 r	5,000
Gross weight Sb content	1,200	4,500 1,100	1,200	2,400 ^r	1,200
Bauxite and alumina:	1,200	1,100	1,200	2,400	1,200
Bauxite Bauxite	475,349	771,227	1,264,933 r,2	818,928 r, 2	1,473,181 2
Alumina, gross weight	112,558	150,117	163,455	160,000	80,000
Chromium, gross weight (34% to 43% chromic oxide) ³	688,377	1,059,900	1,678,900	1,885,700 ²	1,573,993 2
Copper:		1,037,700	1,070,700	1,005,700	1,575,775
Mine output, exclusive of pyrite: ⁴					
Gross weight	2,946,106	4,293,530 r, 2	4,806,198 r, 2	6,166,035 r, 2	6,470,475 ²
Cu content of ore ^e	54,000	70,000 ^r	81,000	100,000 ^r	105,000
Metal: ^e					
Smelter output, primary and secondary	27,600	30,000	30,000	30,000	
Refined	95,000	106,000	100,000	88,000 r	33,000
Gold ^{e, 5} kilogr	<u>ams</u> 4,170	8,040	9,920	11,016 ^{r, 2}	14,469 ²
Iron and steel:					
Iron ore:				2	
Gross weight thousand metric t		3,785	4,849	4,697 ^{r, 2}	4,170 ²
Fe content ^e	do. 2,450	2,000	2,600	2,500 ^r	2,200
Metal:					
Pig iron and ferroalloys:		121.056	264.000	250.000	250.000
Cast iron ⁶	178,395	121,956	264,808	250,000	250,000
Crude (pig) iron	6,371,084	5,952,106	6,235,537	6,697,000 ²	6,913,325 ²
Ferrochromium	26,043	67,975	69,730	79,840 ^{r, 2}	70,000
Ferrosilicon ^e	4,000	2,000	5,000	4,500 °	4,000
Steel, crude including castings thousand metric to	tons 20,960	23,300 ^e	25,760	26,809 ²	25,304 ²
Lead:					
Mine output, Pb and Pb-Zn ores: Gross weight	366,308	270 727	694 021	565,374 r, 2	599,705 ²
Pb content	17,000	279,727 13,000	684,931 32,000	25,000 ^r	26,000
		13,000	32,000	23,000	20,000
Concentrates: Gross weight	29,000	23,000	55,000	44,000 r	45,000
Pb content	15,500	12,000	30,000 r	24,000 ^r	25,000
	6,000	6,000	6,000	6,000	6,000
Metal, refined ^e				51,703 ^{r, 2}	141,246 ²
Manganese ore, gross weight ⁷	52,273	32,144	42,033	51,/05 r,2	141,240
Mercury			65	25 r, 2	2
Molybdenum, ore, gross weight			185	25 1,2	
Nickel, mine output, Ni content ^e	1,000	1,500			2
Silver, mine output, Ag content ⁸ kilogra	ams 137,560	167,340	198,000 ²	294,000 r, 2	351,600 ²
Zinc: ^e					
Mine output, Zn and Cu-Zn ore:					. =
Gross weight thousand metric to		1,500	1,600 r,e	1,600	1,700
Zn content	<u>do.</u> 41	69	80	80	86
Concentrates:		160,000	100.000	100.000	205.000
Gross weight	96,000	160,000	188,000	188,000	205,000
Zn content INDUSTRIAL MINIERALS	36,000	60,000	70,000	70,000	75,000
INDUSTRIAL MINERALS		6.692	2 5 1 1	15 224 E.2	2000 2
Aluminum sulfate, alunite	157 170	6,683	2,511	15,324 ^{r, 2}	2,068 ²
Barite, crude Boron minerals:	157,179	161,993	184,041	482,740 ^{r, 2}	213,187 ²
Run of mine	3,478,784	3 055 574	4 406 070	4,897,869 ²	3,923,494 2
		3,955,574	4,406,970		
Concentrates Period borates	1,824,571	1,818,944	2,127,812	2,139,224 ²	1,800,000
Refined borates See footnotes at end of table	923,253	1,021,139	1,092,056	1,300,000 r	1,000,000

See footnotes at end of table.

$\label{total loss} \mbox{TABLE 1---Continued} \\ \mbox{TURKEY: PRODUCTION OF MINERAL COMMODITIES}^1$

(Metric tons unless otherwise specified)

Commodity	2005	2006	2007	2008 ^e	2009 ^e
INDUSTRIAL MINERALS—Continued	_			2	
Cement, hydraulic thousand metric tons	42,787	47,977	49,553	51,432 ²	53,000
Clays:	_				2
Bentonite	501,142	1,134,251	1,742,487	1,553,588 r, 2	932,487 2
Kaolin	908,862	1,064,107	914,117	792,044 ^{r, 2}	727,649 2
Other	1,962,072	3,034,560	2,871,145	3,261,379 r, 2	2,412,609 2
Diatomite	44,122	45,420	33,135	62,685 r, 2	27,634 2
Emery	9,378	13,899	19,108	57,722 r, 2	28,198
Feldspar, run of mine	2,331,971	5,771,892	6,548,796	6,767,500 r, 2	4,212,547 2
Fluorite				2,931 2	3,756 ²
Glass, crude ^e thousand metric tons		1,600	1,900	2,300 ^r	1,800
Graphite, run of mine ^e	r, 2	r, 2	r, 2	3,236 r, 2	$2,400^{-2}$
Gypsum	3,500,864	4,369,771	3,241,177	7,338,127 ^{r, 2}	4,369,589 2
Lime ^{e, 9} thousand metric tons	3,400	3,600	3,600	3,600	3,600
Magnesium, magnesite, run of mine	2,372,206	2,088,033	802,406 r, 2	677,784 ^{r, 2}	861,180 ²
Mica:	_				
Illite		27,898	57,774	61,577 r, 2	36,509 ²
Other	3,584		3,313	8,392 r, 2	4,172 2
Nepheline syenite	 _		400		759 ²
Nitrogen, N content of ammonia	304,617	91,665		50,000	100,000
Obsidian			226		19
Olivine	94,439	191,298	145,839	170,631 r, 2	168,567 ²
Peat	71,749	185,944	145,403	113,112 r, 2	65,315 ²
Perlite, run of mine	333,400 r, 2	474,966 r, 2	478,579 r, 2	551,266 r, 2	522,832 2
Phosphate rock	900 r, e	1,300 r, e	1,300 r, e	1,000 r	1,000
Pumice	1,860,037	3,515,644	3,995,423	3,449,733 r, 2	4,322,543 2
Pyrites, cupreous, gross weight	640 r, 2	63,674 r, 2	109,100 r, 2	116,091 r, 2	124,130 ²
Quartz and quartzite	1,466,533	1,871,887	2,146,969	1,762,972 r, 2	1,943,877 2
Sepiolite (meerschaum) and palygorskite (attapulgite) ¹⁰	10,478 r, 2	19,242 r, 2	36,402 r, 2	3,724 r, 2	3,448 ²
Silica (quartz) sand, gross weight	1,729,525	2,608,260	4,997,694	2,422,587 r, 2	4,499,154 ²
Sodium compounds:	- ′ ′	, ,	, ,	, ,	, ,
Salt, NaCl, all types thousand metric tons	2,156 ^{r, 2}	4,225 r, 2	2,366 r, 2	2,472 r, 2	3,768 ²
Soda ash, trona do.	_	891	947	949 r, 2	1,079 ²
Sodium sulfate, concentrates	809,187	226,014	1,120,968	961,295 r, 2	4,592,014 2
Stone:	_	- ,-	, -,	, , , ,	, ,-
Basalt	517,831	2,485,956	4,115,184	3,307,107	1,908,544 2
Dolomite	10,636,615	14,621,691	15,672,171	16,440,257 r, 2	11,152,094 2
Granite	160,930	320,069	252,354	367,959 r, 2	324,718 ²
Limestone, other than for cement thousand metric tons	_	5,876	7,171	7,200	7,000
Marble cubic meters	- '	1,855,740	2,801,757	2,262,537 r, 2	2,715,601 2
Onyx do.	_	2,578	5,663	2,145 r, 2	2,322 2
Travertine do.	_	1,017,672	995,065	759,118 ^{r, 2}	1,002,866 2
Strontium minerals, celestite: ^e		1,017,072	<i>)</i>	757,110	1,002,000
Run of mine	30,100 ²	10,500	6,700	2,600	
Concentrates	18,000	6,300	4,200	1,600	
Sulfur: ^e	10,000	0,500	7,200	1,000	
Byproduct:	-				
**	54,000 ²	69,000	65,000 r, e	63,000 r	45,000
Petroleum Other	20,000	20,000	20,000	20,000	45,000
	_ 20,000 300 ^{r, e}	20,000 30,000 r, e	20,000 50,000 r, e	20,000 55,000 ^r	60,000
S content of pyrites		,		-	
Total Total	74,300	119,000	135,000	138,000	105,000 6,887 ²
Talc	8,775	4,969	12,722	3,364 ^{r, 2}	
Titanium minerals, rutile, gross weight	12 °	121 014	20	20	4,000 2
Zeolite MINIER AL ELIEL CAND BELATED MATERIAL C	_ 249,572	121,014	104,138	107,951 r, 2	141,728 2
MINERAL FUELS AND RELATED MATERIALS	- 005.020	474 500	701 640	750.000	750 000
	005 020	1111 573	781,649	750,000	750,000
Asphalt, natural Carbon black	905,838 26,820	474,523 51,788	40,379	40,000	30,000

See footnotes at end of table.

TABLE 1—Continued TURKEY: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Comm	nodity	2005	2006	2007	2008 ^e	2009 ^e
MINERAL FUELS AND RELA	TED MATERIALS—Continued					
Coal:						
Hard coal, run of mine	thousand metric tons	3,050	3,071	3,233	3,343 ²	3,774 ²
Lignite, run of mine	do.	55,626	61,006	70,606	85,953 ²	82,263 ²
Coke and semicoke	do.	2,800 e	3,261	3,337	$4,063^{-2}$	4,000
Gas, natural, marketed	thousand cubic meters	483,525	306,136	287,501	894,000 ^r	660,000
Petroleum:						
Crude	thousand 42-gallon barrels	16,500 e	15,300	15,000 ^e	15,200 r	16,900
Refinery products: ^e						
Liquefied petroleum gas	do.	8,900	9,300	8,800	8,900	7,200
Gasoline	do.	30,300	30,800	33,900	37,700	30,000
Naphtha	do.	11,500	11,500	7,200	4,600	3,700
Jet fuel and kerosene	do.	15,924	17,100	20,500	22,400	15,900
Distillate fuel oil ¹¹	do.	56,400	56,800	53,000	49,000	35,200
Lubricants	do.	2,400	2,300	2,100	1,800	1,700
Residual fuel oil	do.	42,100	38,600	36,200	31,700	13,800
Asphalt	do.	10,700	13,400	13,900	13,600	12,200
Unspecified ¹²	do.	1,050	5,300	5,300	2,500	2,600
Total	do.	179,000	185,000	181,000	172,000	122,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^rRevised. do. Ditto. -- Zero.

¹Table includes data available through November 20, 2010. In addition to the commodities listed, large quantities of construction materials (sand and gravel) are quarried. Also mined are diabase, sandstone, serpentine, and slate for building stone; gypsum and limestone for cement manufacture; and garnet, iron oxide pigment, and tungsten, but available information is inadequate to make estimates of output.

²Reported figure.

³Approximately 70% of gross production is salable product.

⁴Copper mines produce a copper concentrate (of about 22% Cu) and a cupreous pyrite concentrate (of about 0.7% Cu). Copper is not recovered from the cupreous pyrite concentrate.

⁵Data include estimated content of Turkish copper refinery tankhouse slimes.

⁶Series formerly carried as pig iron.

⁷Does not include manganiferous iron ore from the Deveci Mine, production of which amounts to several hundred thousand metric tons per year and has a manganese content of between 3% and 5%.

⁸Includes estimated content of base-metals-refinery tankhouse slimes.

⁹Estimated sales only.

¹⁰Entry for sepiolite (meerschaum) and palygorsskite (attapulgite), which are magnesium aluminum silicates, formerly included only sepiolite production of 170 kilograms in 2005; 2006, 130 kilograms; 2007, 50 kilograms; and 2008, 50 kilograms.

¹¹Diesel fuel (gasoil) and special heating oil.

¹²Includes refinery fuel and losses.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum, metal	Eti Alüminyum A.Ş. (Cengiz Holding)	Smelter at Seydisehir, Konya Province	65
Bauxite and alumina:			
Alumina	do.	Refinery at Seydisehir, Konya Province	200
Bauxite	do.	Mines near Madenli, about 25 kilometers south of Seydisehir, Konya Province	500
Do.	Demireller Tarim Madencilik Petrol Sanayi ve Ticaret Limited Şti,	Mines near Arslankoy, Mersin Province	500
Do.	Albuck Madencilik San. ve Tic. A.Ş.	Mine near Cirpi, Mugla Province	NA
Do.	do.	Mine near Mihaliccik, Eskisehir Province	NA
Boron:			
Concentrate and ground ore	Bigadiç Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Three open pit mines at Bigadic, Balikesir Province	650
Do.	Emet Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Espey Mine, Emet, Kutahya Province	500
Do.	do.	Hisarcik Mine, Emet, Kutahya Province	500
Do.	Kestelek Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Kestelek Mine, Bursa Province	100
Do.	Kırka Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Mine at Kirka, Eskisehir Province	800
Refined borates	Bandırma Bor ve Asit Fabrikalari İşletme Müdürlüğü, (Eti Maden İsletmeleri Genel Müdürlüğü) (Government)	Plant at Bandirma, Balikesir Province	100
Do.	Emet Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Boric acid plant, Emet, Kutahya Province	100
Do.	Kırka Bor İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Plant at Kirka, Eskisehir Province	600
Cement:			
Gray portland	Adana Çimento Sanayii ve Ticaret A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 57%]	Adana, Adana Province	3,400
Do.	do.	Iskenderun grinding plant, Iskenderun, Hatay Province	1,000
Do.	Afyon Çimento Sanayii Ticaret A.Ş. (Ciments Français S.A., 77%)	Afyon, Afyon Province	550
Do.	Akçansa Çimento Sanayi ve Ticaret A.Ş. (HeidelbergCement AG, 40%, and Sabancı Holding A.Ş., 40%)	Buyukcekmece plant, Buyukcekmece, Istanbul Province	2,800
Do.	do.	Canakkale plant, about 11 kilometers northwest of Ezine, Canakkale Province	3,500
Do.	do.	Ladik plant, Ladik, Samsun Province	1,050
Do.	Aslan Çimento A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 97%]	Darica plant, Gebze, Kocaeli Province	2,880
Do.	AS Çimento Sanayi ve Ticaret A.Ş.	Bucak, Burdur Province	6,500
Do.	Aşkale Çimento Sanayi ve Ticaret A.Ş.	Trabzon plant, Degirmendere, Trabzon Province	800
Do.	do.	Askale, Erzurum Province	720
Do.	Bakırçay Çimento Sanayii ve Ticaret A.Ş. (Kars Çimento San. ve Tic. A.Ş., 98%)	Poyracik, near Kinik, Izmir Province	12
Do.	Bartın Çimento Sanayii ve Ticaret A.Ş. (Sanko Holding A.Ş.)	Bartin plant, Bartin Province	400
Do.	Baştaş Çimento Sanayii A.Ş. (Vicat Group, 85%)	Elmadag, Ankara Province	1,500
Do.	Batıçim Batı Anadolu Çimento Sanayii A.Ş. (Orascom Construction Industries, 23%)	Bornova, Izmir Province	1,600
Do.	Batısöke Söke Çimento Sanayii ve Ticaret A.Ş. (Batıçim Batı Anadolu Çimento Sanayii A.Ş., 75%)	Soke, Aydin Province	1,300
Do.	Bolu Çimento Sanayii A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 52%]	About 14 kilometers east of Bolu, Bolu Province	2,200
Do.	do.	Ankara grinding plant, Kazan, Ankara Province	800
Do.	Bursa Çimento Sanayii ve Ticaret A.Ş. (Bursa Çimento Fabrikası A.Ş., 98%)	Kestel, Bursa Province	2,850
Do.	Çimentaş İzmir Çimento Fabrikası Türk A.Ş. (Intercem SA, 67%, and Cementir Holding SpA, 29%)	Isikkent, Izmir Province	2,600

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commo		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement—Continu				
Gray portland—	-Continued	Çimko Adıyaman Çimento ve Beton Sanayii ve Ticaret A.Ş. (Çimko Çimento ve Beton Sanayii Ticaret A.Ş.)	About 18 kilometers southwest of Adiyaman, Adiyaman Province	1,350
Do.		Çimko Çimento Kahramanmaraş Narlı Fabrikası (Çimko Çimento ve Beton Sanayii Ticaret A.Ş.)	Narli plant, Narli, Kahramanmaras Province	3,300
Do.		Cimpor Yibitaş Çimento Sanayii ve Ticaret A.Ş. (Cimpor Internacional, SGPS, S.A., 99%)	Corum plant, Corum, Corum Province	950
Do.		do.	Hasanoglan grinding plant, Hasanoglan, Hasanoglan Province	725
Do.		do.	Nevşehir grinding plant, Kalaba, Nevsehir Province	300
Do.		do.	Samsun grinding plant, about 6 kilometers west of Samsun, Samsum Province	300
Do.		do.	Sivas plant, Sivas, Sivas Province	615
Do.		do.	Yozgat plant, Saraykoy, Yozgat Province	800
Do.		Çimsa Çimento Sanayii ve Ticaret A.Ş. (Sabancı Holding A.Ş., 47%)	Ankara grinding plant, Lalahan, Ankara	230
20.		ymono sanayn ve ricaretri. y. (Subanet Hotaling 1y., 1770)	Province	230
Do.		do.	About 20 kilometers northwest of Eskisehir, Eskisehir Province	1,800
Do.		do.	Near Agirnas, Kayseri Province	1,000
Do.		do.	Mersin plant, Yenitaskent, Mersin Province	2,300
Do.		do.	Nigde plant, Nigde, Nigde Province	1,200
Do.		Denizli Çimento Sanayi ve Ticaret A.Ş. (CRH plc, 50%, and Eren Holding A.S., 50%)	About 5 kilometers northwest of Kaklik, Denizli Province	2,500
Do.		Elazığ Çimento A.Ş. (Kars Çimento Sanayii ve Ticaret A.Ş., 93.55%; Cimentas A.Ş., 6.17%; Bakırçay Çimento Sanayii ve Ticaret A.Ş., 0.27%)	Elazig, Elazig Province	900
Do.		Ereğli Çimento Sanayii ve Ticaret A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 50%]	Karadeniz Eregli plant, Kemer, Zonguldak Province	300
Do.		Göltaş Göller Bölgesi Çimento Sanayii ve Ticaret A.Ş. (Sadecib S.A., 34%, and Göl Yatırım Holding A.Ş. 28%)	About 15 kilometers north-northwest of Isparta, Isparta Province	2,900
Do.		Kars Çimento Sanayii ve Ticaret A.Ş. (Cimentas A.Ş., 58%, and Alfacem Srl, 40%)	Bozkale, Kars Province	600
Do.		Konya Çimento Sanayii A.Ş. (Vicat Group, 81%)	Konya, Konya Province	1,600
Do.		Lafarge Van Çimento A.Ş. (Lafarge S.A., 99.99%)	Edremit, Van Province	600
Do.		Limak Kurtalan Çimento Sanayii ve Ticaret A.Ş. (Limak Şirketler Grubu)	Sanliurfa plant, about 14 kilometers north- northwest of Sanliurfa, Sanliurfa Province	1,400
Do.		do.	Gaziantep plant, Gaziantep (Sehit Kamil), Gaziantep Province	1,400
Do.		do.	Kurtalan plant, Kurtalan, Siirt Province	1,140
Do.		Limak Madencilik Yapı Çimento Sanayii ve Ticaret A.Ş. (Limak Sirketler Grubu)	Ergani plant, Ergani, Diybakir Province	1,400
Do.		Limak - Istaç İnşaat Sanayi ve Ticaret A.Ş.	Bitlis plant, Bitlis Province	525
Do.		Mardin Çimento Sanayii ve Ticaret A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 56%]	About 6 kilometers northeast of Mardin, Mardin Province	2,000
Do.		Nuh Çimento Sanayi A.Ş. (Nuh Ticaret ve Sanayi A.Ş., 43%)	Hereke, Kocaeli Province	5,817
Do.		Set Çimento Sanayi ve Ticaret A.Ş. (Set Çimento Group)	Ambarli grinding plant, Buyukcekmece, Istanbul Province	1,200
Do.		do.	Ankara plant, Ankara, Ankara Province	1,300
Do.		do.	Trakya plant, Pinarhisar, Kirklareli Province	800
Do.		do.	Balikesir, Balikesir Province	500
Do.		Traçim Çimento Sanayii ve Ticaret A.Ş. (Soyak Holding A.Ş. and TBS Taşıma Beton A.Ş).	Evrencik, Vise, Kirklareli Province	2,000
Do.		Ünye Çimento Sanayi ve Ticaret A.Ş. [Ordu Yardımlaşma Kurumu (OYAK) Çimento Grubu, 51%, and Nuh Çimento Sanayi A.Ş., 39%]	Unye, Ordu Province	2,600
Slag		KarÇimsa Çimento Sanayii ve Ticaret A.Ş. (Akçansa Çimento Sanayi ve Ticaret A.Ş.)	Karabuk, Karabuk Province	200

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement—Continued: White	Adana Çimento Sanayii ve Ticaret A.Ş. [Ordu Yardımlaşma Kurumu	Adana, Adana Province	325
Do.	(OYAK) Çimento Grubu, 57%] Çimsa Çimento Sanayii ve Ticaret A.Ş. (Sabancı Holding A.Ş., 47%)	Mersin plant, Yenitaskent, Mersin Province	1,000
Coal:			
Anthracite	Armutçuk Taskömürü Isletme Müessesesi [Türkiye Taşkömürü Kurumu Genel Müdürlüğü (T.T.K.)] (Government)	Armutcuk Mine, Armutcuk, Eregli Province	400
Do.	Amasra Taskömürü Isletme Müessesesi [Türkiye Taşkömürü Kurumu Genel Müdürlüğü (T.T.K.)] (Government)	Amasra Mine, Amasra, Bartin Province	300
Do.	Karadon Taskömürü Isletme Müessesesi [Türkiye Taşkömürü Kurumu Genel Müdürlüğü (T.T.K.)] (Government)	Karadon Mine, Kilimli, Zonguldak Province	450
Do.	Kozllu Taskömürü Isletme Müessesesi [Türkiye Taşkömürü Kurumu Genel Müdürlüğü (T.T.K.)] (Government)	Kozlu Mine, Kozlu, Zonguldak Province	600
Do.	Üzülmez Taskömürü Isletme Müessesesi [Türkiye Taşkömürü Kurumu Genel Müdürlüğü (T.T.K.)] (Government)	Uzulmez Mine, Asma, Zonguldak Province	500
Lignite ¹	Bursa Linyitleri İşletmesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Bursa lignite facility, Orhaneli, Bursa Province	1,000
Do.	Çan Linyitleri İşletmesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Can lignite facility, Can, Canakkale Province	1,800
Do.	Ege Linyitleri İşletmesi Müessesesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Soma Mine, Soma, Manisa Province	10,500
Do.	Garp Linyitleri İşletmesi Müessesesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Tuncbilek mining center, Tavsanli, Kutahya Province	7,000
Do.	Güney Ege Linyitleri İşletmesi Müessesesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	South Aegean lignite facility, Yatagan, Mugla Province	4,900
Do.	Ilgın Linyitleri İşletmesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Ilgin lignite facility, Ilgin, Konya Province	300
Do.	Seyitömer Linyitleri İşletmesi Müessesesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Seyitomer lignite facility, Seyitomer, Kutahya Province	8,000
Do.	Yeniköy Linyitleri İşletmesi Müdürlüğü [Türkiye Kömür İşletmeleri Kurumu (TKI)] (Government)	Yenikoy lignite facility, Oren (Milas), Mugla Province	8,500
Copper:			
Concentrate, Cu content	Çayeli Bakir İşletmeleri A.Ş. (Inmet Mining Corp., 100%)	Cayeli Mine, near Cayeli, Rize Province	37
Do.	Eti Bakir A.Ş. (Cengiz Holding, 100%)	Kastamonu Kure facility (three open pit and one underground mines), 50 kilometers north of Kastamonu, Kastamonu Province	23
Do.	do.	Murgul facility (three open pit mines, including the Anayatak and the Çakmakkaya Mines), Murgul, Artvin Province	20
Do.	Park Elektrik Üretim Madencilik San. ve Tic. A. Ş.	Siirt Madenköy	20
Do.	Demir Export A.Ş. (Koc Holding A.Ş.)	Lahnos Mine, Giresum Province	2
Anode (blister)	Karadeniz Bakır İşletmeleri (KBI) (Cengiz Holding)	KBI smelter, Tekkekoy, Samsun Province	38
Cathode	Sarkuysan Elektrolitik Bakır San. ve Tic. A.Ş.	Darica, Kocaeli Province	200
Do.	Er-Bakir Elektrolitik Bakır Mamulleri A.Ş.	Denizli, Denizli Province	200
Ferrochrome, high-carbon	Eti Krom A.Ş. (Yildrim Holding A.Ş.)	About 55 kilometers east of Elazig, Elazig Province	150
Fertilizer:			
Ammonium nitrate	Kütahya Gübre Sanayii A.Ş. (Yildiz Yatirim Holding A.Ş.)	Kutahya, Kütahya Province	344
Diammonium phosphate	Samsun Gübre Fabrikası [Türkiye Gübre Sanayii A.Ş. (TÜGSAŞ)]	Tekkekoy, Samsun Province	227
Do.	Ege Gübre Sanayii A.Ş.	Aliaga, IIzmir Province	165
Do.	Istanbul Gubre Sanayi A.Ş. (IGSAŞ), (Yildiz Yatirim Holding A.Ş.)	Korfez, Kocaeli Province	240
Mono-ammonium phosphate	Ege Gübre Sanayii A.Ş.	Aliaga, Izmir Province	130
Gold, ore, kilograms Au content	Koza Altın İşletmeleri A.Ş. (ATP İnşaat ve Ticaret A.Ş., 60%, and Koza İpek Holding A.Ş., 40%)	Ovacik Mine, Ovacik, Mugla Province	6,000
Do. do.	do.	Mastra Mine, near Demirkaynak, Gumushane Province	5,000
Do. do.	do.	Havran Mine, Balikesir Province	3,000

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Gold, ore, kilogram Au content—Continued		Kisladag Mine, Katranci, Usak Province	7,500
Do. de		Sardes placer mine, Manisa Province	NA
Iron and steel:		r	
Iron ore	Erdemir Madencilik Sanayi ve Ticaret A.Ş. (Ereğli Demir ve Çelik Fabrikalari T.A.Ş.) (Erdemir)	Fourteen mines in the Divrigi area, Sivas Province	2,500
Do.	Hekimhan Madencilik İthalat İhracat Sanayi ve Ticaret A.Ş. (Kolin İnşaat Turizm Sanayi ve Ticaret A.Ş.)	About 22 kilometers northeast of Hekimhan (formerly the Deveci Mine), Malatya Province	2,000 2
Steel:	_		
Crude	Asil Çelik A.Ş.	Plant south of Orhangazi, Bursa Province	485
Do.	Bilecik Demir Çelik Sanayi ve Ticaret A.Ş. (Global Yatırım Holding A.Ş., 40%)	Bilecik, Bilecik Province	240
Do.	Çebitaş Demir Çelik Endüstrisi A.Ş.	Aliaga, Izmir Province	750
Do.	Çelik Makina Sanayi ve Ticaret A.Ş. (ÇEMTAŞ)	Bursa, Bursa Province	174
Do.	CER Çelik Endüstrisi A.Ş.	Plant at Bornova, Izmir Province	850
Do.	Çolakoğlu Metalurji A.Ş.	Dilovasi, Kocaeli Province	3,200
Do.	Diler Demir Çelik Endüstrisi ve Ticaret A.Ş.	do.	1,500
Do.	Ege Çelik Endüstrisi Sanayi ve Ticaret A.Ş.	Aliaga, Izmir Province	2,000
Do.	Ekinciler Holding A.Ş.	About 10 kilometers north of Iskenderun, Hatay Province	1,000
Do.	Erege Metal Demir Çelik Sanayi ve Ticaret A.Ş.	Aliaga, Izmir Province	720
Do.	Ereğli Demir ve Çelik Fabrikaları T.A.Ş. (Erdemir) (Ataer Holding A.Ş., 49.29%, and ArcelorMittal, 24.99%)	Karadeniz Ereğli, Zonguldak Province	3,800
Do.	Habaş Sinai ve Tibbi Gazlar İstihsal Endustrisi A.S. (Habaş Topluluğu)	Aliaga, Izmir Province	3,000
Do.	İçdaş Demir Çelik Enerji Tersane ve Ulaşım Sanayi A.Ş.	Istanbul (Gunesli), Istanbul Province	1,000
Do.	do.	About 25 kilometers north of Biga, Canakkale Province	1,500
Do.	İlhan Metalurji A.Ş.	Toprakkale, Osmaniye Province	220
Do.	İskenderun Demir ve Çelik A.Ş. (Isdemir) [Ereğli Demir ve Çelik Fabrikalari T.A.Ş. (Erdemir), 92%]	Iskenderun, Hatay Province	4,000
Do.	İzmir Demir Çelik Sanayi A.Ş. (IDÇ)	Aliaga, Izmir Province	1,320
Do.	Kaptan Demir Çelik Endüstrisi ve Ticaret A.Ş.	Marmara Ereglisi, Tekirdag Province	1,400
Do.	Karabük Demir Çelik Sanayi ve Ticaret A.Ş. (Kardemir) (Kardemir retirement group, 68%, and Kardemir employees, 21%)	Karabuk, Karabuk Province	1,500
Do.	Kroman Çelik Sanayii A.Ş.	Cayirova, Kocaeli Province	1,250
Do.	Makina ve Kimya Endüstrisi Kurumu Genel Müdürlüğü (MKEK)	Kirikkale, Kirikkale Province	60
Do.	Mega Demir Mamulleri Sanayi ve Ticaret Ltd. ŞTI	North of Iskenderun, Hatay Province	220
Do.	Nursan Metalurji A.Ş	Payas, Hatay Province	1,100
Do.	Sivas Demir Çelik İşletmeleri A.Ş (Sidemir)	About 20 kilometers south of Sivas, Sivas Province	350
Do.	Tosyalı Demir Çelik Sanayi A.Ş. (Tosyalı Holding A.Ş.)	Iskenderun, Hatay Province	NA
Do.	Yazıcı Demir Çelik Endüstrisi ve Ticaret A.Ş. (Diler Demir Çelik Endüstrisi ve Ticaret A.Ş.)	Karabuk, Karabuk Province	900
Do.	Yeşilyurt Demir Çelik A.Ş.	Tekkeköy, Samsun Province	1,300
Rolled products	Asil Çelik A.Ş.	Rolling mill south of Orhangazi, Bursa Province	200
Do.	Borçelik Çelik Sanayii ve Ticaret A.Ş. (ArcelorMittal and Borusan Holding A.Ş.)	Near Gemlik, Bursa Province	1,600
Do.	Çebitaş Demir Çelik Endüstrisi A.Ş.	Aliaga, Izmir Province	600
Do.	Çelik Makina Sanayi ve Ticaret A.Ş. (ÇEMTAŞ)	Bursa, Bursa Province	230
Do.	CER Çelik Endüstrisi A.Ş.	Rolling mill at Bornova, Izmir Province	300
Do.	Çolakoğlu Metalurji A.Ş.	Dilovasi, Kocaeli Province	750
Do.	Demirsan Haddecilik Sanayi ve Ticaret A.Ş.	do.	NA
Do.	Diler Demir Çelik Endüstrisi ve Ticaret A.Ş.	do.	800
Do.	Ege Çelik Endüstrisi Sanayi ve Ticaret A.Ş.	Aliaga, Izmir Province	1,200
Do.	Ekinciler Holding A.Ş.	About 10 kilometers north of Iskenderun, Hatay Province	1,100

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Comme	odity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel—Continu				
Rolled produc	ets—	Erege Metal Demir Çelik Sanayi ve Ticaret A.Ş.	Aliaga, Izmir Province	400
Do.		Ereğli Demir ve Çelik Fabrikaları T.A.Ş. (Erdemir) (Ataer Holding A.Ş., 49.29%, and ArcelorMittal, 24.99%)	Karadeniz Eregli, Zonguldak Province	8,800
Do.		Habaş Sinai ve Tibbi Gazlar İstihsal Endustrisi A.S. (Habaş Topluluğu)	Aliaga, Izmir Province	NA
Do.		İçdaş Demir Çelik Enerji Tersane ve Ulaşım Sanayi A.Ş.	Istanbul (Gunesli), Istanbul Province	1,500
Do.		do.	About 25 kilometers north of Biga, Canakkale Province	1,500
Do.		Intermet A.Ş.	2 rolling mills, Istanbul, Istanbul Province	600
Do.		İskenderun Demir ve Çelik A.Ş. (Isdemir) [Ereğli Demir ve Çelik Fabrikaları T.A.Ş. (Erdemir), 92%]	Iskenderun, Hatay Province	3,500
Do.		İzmir Demir Çelik Sanayi A.Ş. (IDÇ)	Aliaga, Izmir Province	900
Do.		Kaptan Demir Çelik Endüstrisi ve Ticaret A.Ş.	Marmara Ereglisi, Tekirdag Province	700
Do.		do.	Corlu, Tekirdag Province	200
Do.		do.	Karabuk, Karabuk Province	100
Do.		Karabük Demir Çelik Sanayi ve Ticaret A.Ş. (Kardemir) (Kardemir retirement group, 68%, and Kardemir employees, 21%)	do.	700
Do.		Kar-demir Haddecilik Sanayi ve Ticaret Ltd. ŞTI	Aliaga, Izmir Province	700
Do.		Kocaer Haddecilik Sanayi ve Ticaret Ltd. ŞTI. (Kocaer Grubu)	do.	600
Do.		do.	Denizli, Denizli Province	100
Do.		Kroman Çelik Sanayii A.Ş.	Bar and profile mill at Cayirova, Kocaeli Province	200
Do.		Kürüm Demir Sanayi Dış Ticaret A.Ş.	Gebze, Kocaeli Province	445
Do.		Nursan Haddecilik A.Ş	Payas, Hatay Province	500
Do.		Özefe Demir Sanayi ve Tic A.Ş. (Efesan Demir Sanayi ve Ticaret A.Ş.)	Bar mills at Alibeykoy, Istanbul Province	250
Do.		Özkan Demir Sanayi A.Ş.	Aliaga, Izmir Province	500
Do.		Sivas Demir Çelik İşletmeleri A.Ş (Sidemir)	About 20 kilometers south of Sivas, Sivas Province	450
Do.		Sözer Demir Çelik A.Ş.	Aliaga, Izmir Province	220
Do.		Yazıcı Demir Çelik Endüstrisi ve Ticaret A.Ş. (Diler Demir Çelik Endüstrisi ve Ticaret A.Ş.)	Karabuk, Karabuk Province	1,024
Do.		Yeşilyurt Demir Çelik A.Ş.	Tekkekoy, Samsun Province	720
Liquefied natural gas	million cubic meters	Boru Hatları İle Petrol Taşıma A.Ş. (Botaş) (Government)	Botas Marmara Ereglisi re-gasification terminal, Sultankoy, Tekirdag Province	6,500
Do.	do.	EgeGas LNG (Çolakoğlu Group, 100%)	Aliaga re-gasification terminal, Aliaga, Izmir Province	6,000
Magnesite, dead-	burned	Kümaş Kütahya Manyezit İşletmeleri A.Ş. (Zeytinoğlu Holding A.Ş.)	Kutahya, Kutahya Province	185
Nickel, ore, meta	l content	Sardes Nikel Madencilik A.Ş. (European Nickel PLC)	Caldag Mine, about 25 kilometers north of Turgutlu, Manisa Province	20
Nitrogen, N conte ammonia	ent of	Istanbul Gubre Sanayi A.Ş. (IGSAŞ) (Yildiz Yatirim Holding A.Ş.)	Korfez, Kocaeli Province	326
Do.		Gemlik Gübre Sanayii A.Ş. [Türkiye Gübre Sanayii A.Ş. (TÜGSAŞ)]	Gemlik, Bursa Province	270
Petroleum, refined product:	thousand s 42-gallon barrels per day	Türkiye Petrol Rafinerileri A. Ş. (Tüpras) (Enerji Yatırımları A.S., 51%)	Izmir refinery, Aliaga, Izmir Province	78,650
Do.	do.	do.	Izmit refinery, Izmit, Kocaeli Province	78,650
Do.	do.	do.	Kirikkale refinery, Kirikkale, Kirikkale Province	55,000
Do.	do.	do.	Batman refinery, Batman, Batman Province	12,100
Do.	do.	Ersan Petrol Sanayii A.Ş (Sayer Group, 100%)	Narli refinery, Narli, Kahramanmaras Province	1,330 ³
Silver, ore	metric tons	Eti Gümüş A.Ş. (Yıldızlar SSS Holding)	Gumuskoy, Kutahya Province	198
Soda ash		Eti Soda Inc. [Ciner Grubu, 74%, and Eti Maden İşletmeleri Genel Müdürlüğü (Government), 26%)]	Beypazari trona mine and soda ash plant, Beypazari, Ankara Province	1,000 4
Do.		Soda Sanayii A.Ş [Türkiye Şişe ve Cam Fabrikaları A.Ş. (ŞİŞECAM)]	Kazanli, Mersin Province	950

See footnotes at end of table.

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Sulfur	Türkiye Petrol Rafinerileri A. Ş. (Tüpras) (Enerji Yatirimlari A.S., 51%)	Izmir refinery, Aliaga, Izmir Province	NA
Do.	do.	Izmit refinery, Izmit, Kocaeli Province	NA
Do.	do.	Kirikkale refinery, Kirikkale, Kirikkale Province	NA
Sulfuric acid	Bandırma Bor ve Asit Fabrikalari İşletme Müdürlüğü (Eti Maden İşletmeleri Genel Müdürlüğü) (Government)	Plant at Bandirma, Balikesir Province	240
Zinc concentrate, Zn content	Çayeli Bakir İşletmeleri A.Ş. (Inmet Mining Corp., 100%)	Cayeli Mine, near Cayeli, Rize Province	52
Do.	Meskan Ölmez Madencilik Harfiyat İnşaat yol Yaprim Petrol Ürünleri İthalat İhracat Nakliye Taahüt San. ve Tic.	Mines in Hakkari Province	20
Do.	Silvermet Inc.	Iskenderun, Hatay Province	12
Do.	Dedeman Madencilik Tic. ve San. A.Ş.	The Delikkaya and the Yesil Hisar Cadirkaya Mines, Kayseri Province	10
Do.	Çankkale Madencilik Limited Şti.	Koru Mine, Canakkale Province	5
Do.	Elkin Maden Tic. ve San. A.Ş.	Mines in Hakkari Province	NA
Do.	Seyitoğlu Madencilik A.Ş.	do.	NA

^eEstimated. Do., do. Ditto. NA Not available.

¹Includes subbituminous coal.

²Planned expansion by 2011.

³Inactive.

⁴Under construction.