THE MINERAL INDUSTRY OF TURKEY

By Philip M. Mobbs

Turkey had a diverse and dynamic mineral industry. The nation was a leading producer of barite, boron minerals, celestite (strontium), chromite, feldspar, limestone, magnesite, marble, perlite, and pumice, and was a significant source of value-added processed mineral commodities such as cement, ceramics, glass, and steel.

The national economy continued its recovery from the severe economic crisis of 2001. Inflation declined to an annual rate of 10.6% in 2004, which was a 30-year low, down from 25.3% in 2003 and 44.8% in 2002. Turkey's gross domestic product (GDP) based on purchasing power parity was estimated to be about \$530 billion¹ in 2004, and the GDP per capita based on purchasing power parity was \$7,503 (International Monetary Fund, 2005§²).

In 2004, total Turkish exports were valued at about \$63.1 billion compared with \$47.3 billion in 2003. Of the total exports in 2004, iron and steel accounted for about \$6.0 billion; crude oil and petroleum products, \$1.1 billion; nonferrous metals, \$664 million; crude fertilizers and crude ores, \$500 million, and metalliferous ores and metal scrap, \$299.3 million. Total imports were valued at about \$97.4 billion in 2004 compared with \$69.3 billion in 2003. Of the total imports in 2004, crude petroleum and petroleum products accounted for \$8.6 billion; iron and steel, \$5.3 billion; natural gas, \$4.4 billion; metalliferous ores and scrap, \$3.3 billion; nonferrous metals, \$2.2 billion; and coal and coke, \$1.3 billion (T.C. Başbakanlık Devlet Planlama Teşkilatı Müsteşarlığı, 2005§).

Structure of the Mineral Industry

The private sector dominated the country's industrial minerals and metals sectors. Private-sector enterprises included exploration and production companies owned by domestic and foreign stockholders, mining and manufacturing subsidiaries of large Turkish conglomerates, and medium- and small-sized family-owned mining companies. In 2004, 40,919 new companies and cooperatives were established in Turkey, of which 392 were mining and quarrying companies (State Institute of Statistics, 2005§).

The Government had started procedures to privatize stateowned companies in 1986. Divestment of companies in the mineral sector (primarily cement companies) was most noticeable in 1989, 1992, 1993, and 1996. In 2004, privatization of mineral sector organizations resumed at a brisk pace. Establishments divested by the Government's T.C. Başbakanlık Özelleştirme İdaresi Başkanlığı (Privatization Administration) included the copper operations of Eti Bakir A.Ş. and the Samsun copper smelter of Karadeniz Bakir Işletmeleri A.Ş., which were sold to CE-KA İnşaat Madencilik San. ve Tic. A.Ş.; the low-carbon ferrochrome and ferrosilicon plant of Eti Elektrometalurji A.Ş., which was sold to Aksu Madencilik San. ve Tic. A.Ş.; the high-carbon ferrochrome plant of Eti Krom A.Ş., which was sold to Yıldırım Dış Ticaret ve Pazarlama A.Ş.; and the iron ore mines and iron-pellet plant of Divriği Hekimhan Madenleri San. ve Tic. A.Ş., (Div-Han), which were sold to Ereğli Demir ve Çelik Fabrikaları T.A.Ş. (Erdemir). The Privatization Administration planned to sell the 49.12% equity interest that it held in Erdemir, which operated domestic and foreign steel operations.

Also divested in 2004 were the silver mine and plant of Eti Gümüş A.Ş., which were sold to KSS Madencilik İnşaat Turizm San. ve Tic. A.Ş., and the Government's remaining 45% interest in Çayeli Bakir Isletmeleri A.Ş. (CBI), which was sold to the local subsidiary of Inmet Mining Corp. of Canada. The privatization of the petroleum refineries of Türkiye Petrol Rafineleri A.Ş. in 2004 was voided by the courts.

State-owned mineral enterprises that were expected to be sold by the Privatization Administration in 2005 included several fertilizer plants of Türkiye Gübre San. A.Ş. and the salt operations of Tütün, Tütün Mamulleri, Tuz ve Alkol İşletmeleri (TEKEL) A.Ş. Another attempt to privatize the petroleum refineries of Türkiye Petrol Rafineleri A.Ş. was expected in 2005. The Privatization Administration also was liquidating Türkiye Demir ve Çelik İşletmeleri A.Ş., which was a steel company.

Commodity Review

Metals

Bauxite and Alumina.—Karia Madencilik Muhendislik Nakliye San. ve Tic. Ltd. Şti. completed a prefeasibility study on its İkizcetepe bauxite exploration license near Mugla.

Copper.—In 2004, CBI continued to recuperate from the production disruption associated with a rockfall in 2002. A new mining plan was developed to cope with unstable ground conditions, and ore production volume was expected to recover completely in 2005. The program to deepen the mine's main shaft by 286 meters (m) was expected to be completed in early 2006 (Inmet Mining Corp., 2004, p. 5-6; 2005, p. 26-28).

In September, a fire in an underground tunnel in Eti Bakir's Küre Mine resulted in 19 fatalities and temporary suspension of mining. The tunnel, which was at a depth of 150 m, was part of the underground development of the former open pit mine that had been subcontracted to the STFA Group of Turkey.

The Anatolia Minerals Development Ltd. and Rio Tinto Mining & Exploration Ltd. joint venture drilled the Gurculer copper-gold prospect, which was part of the Bursa exploration project in western Turkey, and the Karapinar, the Kizilviran, and

TURKEY—2004 56.1

¹Where necessary, values have been converted from Turkish lira (TL) to U.S. dollars (US\$) at the average rate of TL1,448,899=US\$1.00 for 2004 and TL1.528,854=US\$1.00 for 2003.

²References that include a section mark (§) are found in the Internet References Cited section

the Sin copper-gold prospects in the Tunceli exploration area in central Turkey.

In 2004, the feasibility study was completed on CBI's Cerattepe exploration license, which was located near Artvin in northeastern Turkey. Based on probable reserves of 1.6 million metric tons (Mt) at grades of 8.8% copper, 1% zinc, 0.3% lead, 33 grams per metric ton (g/t) silver, and 1.4 g/t gold, a plan was developed to mine the deposit at the rate of about 250,000 metric tons per year (t/yr). Production could begin as soon as late 2006, and the proposed underground mine would employ about 90 people (Inmet Mining Corp., 2004, p. 7-8).

In 2004, the Ciner Group, formerly the Park Group, acquired the rights to develop the Siirt-Sirvan copper deposit in southeastern Turkey. The site originally had been mined at least 2,600 years ago. Nuinsco Resources Ltd. acquired an option from Noranda Inc. for the Berta copper-gold prospect near Artvin. Noranda completed a soil-sample program on the property in 2004 (Kaptan, 1990; Nuinsco Resources Ltd., 2004).

Gold.—Legal problems continued for the Ovacik gold mine, which had opened in 2001. The Ovacik Mine, which was located near the north end of Turkey's Turquoise Coast tourist area in western Turkey about 106 kilometers (km) north of Izmir, was owned and operated by Normandy Madencilik A.Ş. In June, Frontier Pacific Mining Corp. of Canada agreed to acquire Normandy from a subsidiary of Newmont Mining Corp. of the United States. In August, operations at Ovacik were suspended after a court decision required additional operating permits and the submission of an updated environmental impact assessment (EIA) report. The paperwork was filed and the mine appeared ready to reopen, but in October, Normandy's appeal of a lower court's decision to prohibit the use of cyanide at Ovacik was denied. Operations remained suspended at yearend (Mining Journal, 2004).

Cyanide was used by other mining operations in Turkey. The lower court ruling applied to the Ovacik Mine, which was located in a tourist region. If an extension of the prohibition of the use of cyanide for gold mining operations were to be applied to other projects, it would have a significant chilling effect on proposed gold mines in Turkey.

The Government expressed support of the gold mining sector in June when it amended the value-added tax (VAT) law. Companies in the gold, platinum, and silver sectors were exempted from paying VAT on goods and services related to exploration, production, and refining operations (PricewaterhouseCoopers International Ltd., 2004, section 5.2.1).

Eldorado Gold Corp. started construction of the Kisladag gold mine, which was located about 180 km east of Izmir. Production was expected to begin in late 2005. Eldorado continued the preparation of an EIA for the Efemçukuru project, which was located about 20 km from Izmir in western Turkey. Eldorado's subsidiary Tüprag Metal Madencilik San ve. Tic. Ltd. Şti. mapped and sampled several deposits on Tüprag's Western Pontides licenses.

Several other companies also were exploring for gold in Turkey. Aldridge Minerals Inc. of Canada completed a 1,000-m-reverse-circulation drill program on the Derinköy and the Olucak properties in 2004. Derinköy was located about 30 km

southeast of Artvin in northeastern Turkey, and Olucak was located 75 km west of Trabzon in northeastern Turkey. Aldridge had acquired options on the properties from BHP Billiton World Explorations Inc. Aldridge also acquired an option on the Yenipazar property in central Turkey from Anatolia Minerals Development Inc.

In January, Anatolia Minerals acquired 100% interest in the Çöpler gold prospect. The Çöpler prospect was located about 500 km east-southeast of Ankara in central Turkey. Anatolia subsequently completed a more-than-200-hole reverse-circulation drill program. Based on the drill results, Anatolia announced a new resource estimate for the Çöpler prospect, which included measured and indicated recoverable oxide resources of 5.51 Mt at an average grade of 2.02 g/t gold and inferred recoverable oxide resources of 13.34 Mt at an average grade of 2.56 g/t gold (Anatolia Minerals Development Inc., 2004).

In September, Eurasian Minerals Inc. of Canada formed a 4-year strategic alliance with Barrick Gold Corp. under which Eurasian's subsidiary Eurasian Madencilik Ltd. would operate a regional exploration program in Turkey for the partners. Eurasian explored several prospects in 2004.

Fronteer Development Group Inc. of Canada acquired options on the Agi Dagi and the Kirazli gold properties in western Turkey from Teck Cominco Arama ve Madencilik San. Tic. A.Ş. In 2004, Fronteer began a 6,000-m drill program at Agi Dagi and a 3,000-m drill program at Kirazli. Fronteer ended the initial Kirazli program after three holes and proposed to begin a new 5,000-m diamond drill program in February 2005 (Fronteer Development Group Inc., 2004, 2005).

Odyssey Resources Ltd. drilled the Altintepe and the Tavsan gold properties. Altintepe, which is located in northeastern Turkey, and Tavsan, which is located in western Turkey, had been optioned from Teck Cominco.

Iron and Steel.—More than 70% of Turkish steel production capacity was attributed to electric arc furnace (EAF) minimills. In 2004, the increased costs of power and domestic and imported steel scrap adversely affected Turkish EAF plants. The country's three integrated steel plants, which employed about 19,000 workers, also were affected by rising fuel and iron ore prices.

In an attempt to control iron ore prices more effectively, Erdemir, which was the leading integrated steel company in Turkey, acquired Div-Han, which produced iron ore and pellets, from the Privatization Administration. Div-Han subsequently was renamed Erdemir Madenclik San. ve Tic. A.Ş. In 2004, Erdemir also inaugurated a train ferry to connect the docks of the seaside steel plant to the Turkish State Railway.

Erdemir continued work on the expansion of its hot-rolling mills and the installation of a plate mill. In 2002, Erdemir had acquired 90.87% equity in the integrated steel producer Iskenderun Demir ve Çelik Fabrikaları A.Ş. (Isdemir) from the Privatization Administration. In 2004, Isdemir completed the modernization of its wire-rod mill. Ongoing work at Isdemir that was expected to be completed in 2006 included the rehabilitation of blast furnace No. 3, which would increase the plant's iron ore requirement; the installation of coke batteries No. 5 and 6, which would add 1.3 million metric tons per year

(Mt/yr) of coke production capacity to the plant; the installation of a 219,000-t/yr lime plant; and the installation of a 2.5-Mt/yr capacity slab caster. A program to expand Isdemir's steel production capacity to 5.25 Mt/yr from 2.2 Mt/yr was expected to be completed by 2010. The project to convert Isdemir to a producer of flat steel products from the current (2004) long products configuration had been tendered and evaluation of the bids was underway (İskenderun Demir ve Çelik Fabrikaları A.Ş., 2005, p. 19-20, 23-26; Ereğli Demir ve Çelik Fabrikaları T.A.Ş., 2005§).

In 2004, the minimill Çolakoğlu Metalurji A.Ş. proposed to install a 2-Mt/yr slab caster at its plant in Gebze that would allow the company to begin production of flat steel instead of only long products such as reinforcing bar and rod. Ege Çelik San. ve Tic. A.Ş. of Izmir proceeded with the installation of a new billet caster, and Kroman Çelik San. A.Ş. proceeded with the installation of a new bar and rod mill at its plant in Gebze (Danieli Group, 2004§; Voest-Alpine Industrienalagenbau AG, 2004§, 2005§).

Nickel.—Bosphorus Nickel Madencilik Turzim A.Ş, which was a subsidiary of European Nickel plc of the United Kingdom (97.7% equity interest) and As Krom Madencilik Turzim Lusaat Nakliye San. ve Tic. A.Ş. of Turkey (2.3%), continued its evaluation of the Caldag lateritic nickel deposit near Izmir. In 2004, Bosphorus Nickel began the first of three trial heapleach projects at Caldag and expected to complete a bankable feasibility study of the project in 2005. A positive study would advance the planned construction of a nickel-cobalt hydroxide plant. Production could begin in 2007 at the rate of 15,000 t/yr of nickel and 800 t/yr of cobalt contained in the hydroxide, which would be exported for further processing (European Nickel plc, 2005, p. 2, 6).

After completing a due diligence review, a trial mining program, and processing of a second 3,500-metric-ton (t) ore shipment, Oriel Resources plc of the United Kingdom withdrew from its Gordes nickel venture with Meta Madencilik Sanayi Enerji Turizm İç ve Dış Ticaret Ltd. Şti. (Meta Madencilik Sanayi Enerji Turizm İç ve Dış Ticaret Ltd. Şti., undated§).

Zinc.—In 2004, ZincOx Resources plc of the United Kingdom completed a prefeasibility study and began a bankable feasibility study of its Aliaga Recycling Project. ZincOx proposed to build a plant to process EAF dust and to recover 12,000 t/yr of zinc oxide. Production was expected to begin in 2007. The proposed location at Aliaga was near five steel minimills that used EAFs to melt steel scrap (ZincOx Resources plc, 2005, p. 8-9).

Industrial Minerals

Boron and Sulfur.—In 2004, Government-owned Eti Holding A.Ş changed its name to Eti Maden İşletmeleri Genel Müdürlüğü. Based on the results of a new 5,650-m drill program, Eti reported that the gross weight of its boron reserves were increased to about 3 billion tons. The grade of Turkish boron deposits ranged from about 24% B_2O_3 to 46% B_2O_3 (Erseçen, 1989, p. 39; Eti Maden İşletmeleri Genel Müdürlüğü, 2005, p. 16; Maden Tetkik ve Arama Genel Müdürlüğü, undated§).

In 2004, Eti officially opened the 100,000-t/yr-capacity Emet boric acid plant. By yearend, Eti had begun an expansion program to raise the capacity of the Emet plant to 120,000 t/yr. Also in 2004, Eti completed the 240,000-t/yr-capacity Bandirma sulfuric acid plant, which—unlike most sulfuric acid plants would process pyrite. The company also began the expansion of the 650,000-t/yr Bigadic Boron Works with the construction of a third concentrator that would add 325,000 t/yr of processing capacity to the Bigadic plant. Natural gas pipelines to the Emet Boron Works and the Kirka Boron Works were under construction. Conversion of the Emet and Kirka facilities to natural-gas-fueled plants was expected to be completed in 2005. Eti also continued work on the 100,000-t/vr-capacity Bigadic II boron grinding unit and proposed to build a 15,000-t/yr anhydrous borax plant at Kirka and a 5,000-t/yr boron oxide plant. At Bandirma, Eti proposed to expand the capacity of the 100,000-t/yr borax decahydrate plant to 145,000 t/yr and to expand the capacity of the 20,000-t/yr sodium perborate plant to 34,000 t/yr (Eti Maden İşletmeleri Genel Müdürlüğü, 2005, p. 16-17).

Soda Ash.— Soda Sanayii A.Ş., which was adversely affected by rising fuel oil prices in 2004, initiated plans to convert the powerplant at its Mersin soda ash facility to burn natural gas; gas was scheduled to become available in 2005 when the Government pipeline company Boru Hatlari Ile Petrol Taşima A.Ş. expected to complete the 715-km Southern Natural Gas Transmission Line from Silvas to Mersin (Türkiye Şişe ve Cam Fabrikaları A.Ş., 2005, p. 25; Boru Hatlari Ile Petrol Taşima A.Ş., 2004§).

In June, Eti Soda Üretim Paz. Nak. ve Tic. A.Ş. [a venture of the Ciner Group (73.96% equity interest), Eti Maden (26%), and Türkiye Vakifbank Bankasi T.A.O. (0.04%)] opened a pilot soda ash plant at Beypazari, which was located about 115 km from Ankara. Trona was extracted by solution mining. Commercial production at the rate of 500,000 t/yr was scheduled to begin in 2007 (Eti Maden İşletmeleri Genel Müdürlüğü, 2004§).

In 2004, Rio Tinto interpreted three-dimensional seismic data that had been shot across the Kazan trona prospect, which was located 35 km northwest of Ankara. Construction of wells for solution mining and 1-Mt/yr-capacity processing facilities at Kazan was expected to begin in 2005 (Walsh, 2004§).

Mineral Fuels

Natural Gas and Petroleum.—State-owned Türkiye Petrolleri A.O. (TPAO) was the country's leading oil producer. Most of TPAO's crude oil production was in the southeastern region; there were 29 producing gasfields and oilfields in the Batman area and another 20 oilfields in the vicinity of Adiyaman. The Thrace region in northwestern Turkey hosted primarily natural gas fields.

Offshore and onshore exploration continued, primarily in northwestern and southeastern Turkey. Offshore, the joint venture of BP plc and TPAO evaluated seismic data across the Eastern Black Sea project, and the joint venture of Madison Oil Turkey Inc. and TPAO acquired additional seismic data and discovered gas in the Ayazh-1 well on the Western Black Sea project acreage.

TURKEY—2004 56.3

Outlook

Turkey's location at the eastern end of the Mediterranean Sea positions the country as a conduit for trade among Europe, the countries in the eastern Commonwealth of Independent States (CIS), and the Middle East. Bridging Asia and Europe, the 780,580-square-kilometer Turkey also is a major energy transit corridor. Natural gas from Iran and Russia is piped into Turkey, and the proposed South Caucasus gas pipeline is to begin deliveries of natural gas to Turkey from Azerbaijan. Connection of the Turkish natural gas pipeline system with the European gas network could provide an alternative route for surplus Eurasian and Iranian natural gas to flow into Europe.

Crude oil from Iraq intermittently moved through Turkey in 2004; the frequent sabotage of the Iraqi section of the pipeline limited pumping operations. Increased pipeline security in Iraq in 2005 would allow increased pipeline throughput. The Baku-Tbilisi-Çeyhan oil pipeline is expected to be operational in 2005 and to increase oil exports (and marine traffic) through the Port of Çeyhan, Turkey, significantly.

The Government continued discussions with the Russian Government concerning the increased oil tanker traffic through the Bosporus and the Dardanelles. Construction of oil pipelines across Thrace from the Black Sea to the Aegean Sea or across central Turkey from Samsun to Çeyhan would reduce the number of oil tankers that carry Russian oil through the Turkish Straits.

In 2004, the population of Turkey was estimated to be about 69 million, and the unemployment rate was reported to be 12%. Renewed growth of the labor-intensive construction sector is expected to benefit Turkey's employment rate and the country's aggregate, cement, clays, steel, and stone companies. The recent economic expansion resulted in record Turkish motor vehicle production; 823,000 vehicles were built in 2004. Continuation of the economic expansion is expected to increase the demand for private automobiles. In addition to the increased demand for steel products, the associated increased demand for glass for cars resulted in Trakya Cam San. A.Ş.'s proposal to add a fifth float glass line with production expected to begin in 2006. Trakya Cam employed about 2,000 employees on the four existing (2004) glass lines.

The Government's ongoing privatization program is expected to rejuvenate operations in the mineral sector. In 2004, most privatized mineral companies were sold to domestic organizations, but between June 2003, when the Foreign Direct Investment Law No. 4875 was enacted, and December 2004, 14 firms in the mining sector attracted \$689 million of new foreign investment (Boland, 2004; T.C. Başbakanlık Hazine Müsteşarlığı, 2005, p. 14; U.S. Central Intelligence Agency, 2004§).

References Cited

- Anatolia Minerals Development Inc., 2004, New estimate confirms Çöpler oxide resource: Lakewood, CO, Anatolia Minerals Development Inc. press release, December 2, 2 p.
- Boland, Vincent, 2004, Calm threatens after the storm, *in* FT Turkey—Finance: Financial Times [London, United Kingdom], April 27, p. 2.

- Erseçen, Necdet, 1989, Known ore and mineral resources of Turkey: Ankara, Turkey, Maden Tetkik ve Arama Genel Müdürlüğü, Report no. 185, 108 p.
- Eti Maden İşletmeleri Genel Müdürlüğü, 2005, 2004 annual report: Ankara, Turkey, Eti Maden İşletmeleri Genel Müdürlüğü, 26 p.
- European Nickel plc, 2005, Annual report 2004: London, United Kingdom, European Nickel plc, 40 p.
- Fronteer Development Group Inc., 2004, Fronteer intersects 12.23 g/t gold over 39.4 metres on first hole of current drill program at Kirazli property: Vancouver, British Columbia, Canada, Fronteer Development Group Inc. news release 04-35, December 2, 2 p.
- Fronteer Development Group Inc., 2005, Fronteer intersects 4.07 g/t gold over 22.9 metres in second hole at Kirazli: Vancouver, British Columbia, Canada, Fronteer Development Group Inc. news release 05-01, January 11, 2 p.
- Inmet Mining Corp., 2004, Inmet Mining announces third quarter earnings of \$0.57 per share: Toronto, Ontario, Canada, Inmet Mining Corp. press release, October 28, 34 p.
- Inmet Mining Corp., 2005, Annual report 2004: Toronto, Ontario, Canada, Inmet Mining Corp., 120 p.
- İskenderun Demir ve Çelik Fabrikaları A.Ş., 2005, İsdemir annual report 2004: İskenderun, Turkey, İskenderun Demir ve Celik Fabrikaları A.Ş., 67 p.
- Kaptan, Ergun, 1990, Findings related to the history of mining in Turkey: Bulletin of the Mineral Research and Exploration Institute of Turkey, no. 111, p. 75-84.
- Mining Journal, 2004, Court rejects Ovacik: Mining Journal, October 8, p. 7.
 Nuinsco Resources Ltd., 2004, Nuinsco announces 15-kilometer area of alteration and widespread copper-gold mineralization outlined on Berta Project—Turkey: Toronto, Ontario, Canada, Nuinsco Resources Ltd. press release, November 9, 2 p.
- PricewaterhouseCoopers International Ltd., 2004, Turkey—A VAT guide: Istanbul, Turkey, PricewaterhouseCoopers, December, unpaginated.
- T.C. Başbakanlık Hazine Müsteşarlığı, 2005, Foreign investment report: Ankara, Turkey, T.C. Başbakanlık Hazine Müsteşarlığı, 25 p.
- Türkiye Şişe ve Cam Fabrikaları A.Ş., 2005, 2004 annual report: Istanbul, Türkey, Türkiye Şişe ve Cam Fabrikaları A.Ş, 72 p.
- ZincOx Resources plc, 2005, Preliminary results—Year ended 31 December 2004: Bagshot, United Kingdom, ZincOx Resources plc, May, 20 p.

Internet References Cited

- Boru Hatlari Ile Petrol Taşima A.Ş., 2004, Investments, accessed September 14, 2005, via URL http://www.botas.gov.tr/investments.
- Danieli Group, 2004 (October 26), New 500,000-tpy bar, rod and spooled barin-coil mill for Kroman Çelik Sanayii—Turkey, accessed December 9, 2004, at URL http://www.danieli.com/press_release/2004/ottobre.oct_26_b.html.
- Ereğli Demir ve Çelik Fabrikaları T.A.Ş., 2005, 2004 annual report, accessed September 16, 2005, via URL http://www.erdemir.com.tr/faaliyet_2004/index.html.
- Eti Maden İşletmeleri Genel Müdürlüğü, 2004 (May 30), 30 Mayıs 2004 tarihinde işletmeye alınan Beypazrı Trona yatakları—Cözelti madenciliği ile soda külü üretimi pilot tesisiinin açılışı yapıldı [Operations at the Beypazrı Trona deposit established as of May 20, 2004], accessed January 24, 2005, at URL http://www.etiholding.gov.tr/tr/0_sayfa_ortakSayfa. asp?hangiSayfa=1608_sayfa.
- International Monetary Fund, 2005 (April), Turkey, World Economic Outlook Database, accessed May 3, 2005, via URL http://www.imf.org/external/pubs/ft/weo/2005/01/data/dbginim.cfm.
- Maden Tetkik ve Arama Genel Müdürlüğü, [undated], Türkiye maden rezervleri [Mineral reserves of Turkey], accessed January 29, 2005, at URL http://www.mta.gov.tr/madenler/turmaden/tur_rez.asp.
- Meta Madencilik Sanayi Enerji Turizm İç ve Dış Ticaret Ltd. Şti., [undated], Gördes nickel project summary, accessed September 19, 2005, at URL http://www.metamaden.com/project.htm.
- State Institute of Statistics, 2005 (January 25), Number of newly established and liquidated companies by economic activity and selected provinces—Cumulative Turkey 2004, accessed May 9, 2005, at URL http://www.die.gov.tr/ENGLISH/SONIST/SIRKET/250105ingt4.gif.
- T.C. Başbakanlık Devlet Planlama Teşkilatı Müsteşarlığı, 2005 (March), Main economic indicators, Part 5— Foreing[sic] trade and balance of payment, accessed May 10, 2005, via URL http://ekutup.dpt.gov.tr/teg/2005/03/mei.html.

U.S. Central Intelligence Agency, 2004, Turkey, accessed September 13, 2005, at URL http://www.brainyatlas.com/geos/tu.html.

Voest-Alpine Industrienalagenbau AG, 2004 (September 20), VAI—21 million euro orders for rolling mill orders, accessed September 20, 2004, at URL http://www.vatech.at/view.php3?f_id=13953&LNG=EN&nl=1.

Voest-Alpine Industrienalagenbau AG, 2005 (March 1), Further major orders from India, Japan, Korea and Russia for VAI worth a total of EUR 200 m, accessed March 1, 2005, at URL http://www.vatech.at/view.php3?f_id=14725&LNG=EN&nl=1.

Walsh, H.S., 2004 (July 19), Economic impact policy, accessed September 10, 2004, at URL http://a257.g.aka.aitech.net/7/257/2422/06jun20041800/ edocket.access.gpo.gov/2004/01-16311.htm.

Major Sources of Information

İstanbul Maden ve Metal İhracatçı Birlikleri (Istanbul Mineral and Metals Exporters' Association)

Diş Ticaret Kompleksi A-bloc Çobançeşme Mevkii

Sanayi Cad. Yenibosna-Bahçelievler

Istanbul, Turkey

Telephone: +(90) (212) 454-00-00

Fax: +(90) (212) 454-00-01 Internet: http://www.immib.org.tr

Maden Tetkik ve Arama Genel Müdürlüğü (General Directorate

of Mineral Research and Exploration)

06520 Ankara, Turkey

Telephone: +(90) (312) 287-34-30 Fax: +(90) (312) 287-91-88 Internet: http://www.mta.gov.tr T.C. Devlet İstatistik Enstitüsü (State Institute of Statistics) 06100 Necatibey Cad. 114

Ankara, Turkey

Telephone: +(90) (312) 425-84-42

Fax: +(90) (312) 417-0432 Internet: http://www.die.gov.tr

T.C. Enerji ve Tabii Kaynaklar Bakanlığı (Turkish Ministry of

Energy and Natural Resources) Ionönü Bulvari, No. 27 Bahçelievler

Ankara, Turkey

Telephone: +(90) (312) 212-69-15 Fax: +(90) (312) 286-47-69 URL: http://www.enerji.gov.tr

T.C. Petrol İşleri Genel Müdürlüğüne (General Directorate of

Petroleum Works)

Ziya Gölkalp Cad. No. 41 Poyraz Han

06420 Yenişehir Ankara, Turkey

Telephone: +(90) (312) 435-51-45 Fax: +(90) (312) 435-23-64 Internet: http://www.pigm.gov.tr

TURKEY—2004 56.5

 $\label{eq:table1} \textbf{TABLE 1} \\ \textbf{TURKEY: PRODUCTION OF MINERAL COMMODITIES}^{1}$

(Metric tons unless otherwise specified)

| Commodity | 2000 | 2001 | 2002 | 2003 | 2004 ^p |
|--|----------------------|----------------------|------------------------|------------------------|-------------------|
| METALS | | | | | |
| Aluminum: | | | | | |
| Bauxite ² | 458,537 | 242,040 | 287,403 | 364,306 | 365,836 |
| Alumina: | 155 440 | 1.45.002 | 150.060 | 160 174 | 160.001 |
| Gross weight | 155,448 | 145,993 | 152,869 | 162,174 | 169,991 |
| Metal, smelter ^e | 61,000 | 61,730 ³ | 62,501 ^{r, 3} | 63,000 | 60,000 |
| Antimony: e | | | | | |
| Ore, mine output: Gross weight | 6 900 | 6,300 ^r | 4,800 ^r | 12,500 ^r | 20,107 3 |
| Sb content | 6,800 360 | 330 ^r | 4,800 ^r | 650 ^r | 900 |
| Concentrates: | 300 | 330 | 230 | 030 | 900 |
| Gross weight | 1,000 | 1,000 | 1,000 | 2,000 r | 2,500 |
| Sb content | 200 | 200 | 150 | 400 ^r | 500 |
| Chromium, gross weight (34% to 43% chromic oxide) ⁴ | 545,725 | 389,759 | 313,637 | 229,294 ^r | 506,421 |
| Copper: | 343,723 | 309,739 | 313,037 | 229,294 | 300,421 |
| Mine output, exclusive of pyrite: ⁵ | | | | | |
| Gross weight | 4,473,711 | 3,467,306 | 2,942,721 | 2,620,896 | 2,356,147 |
| Cu content of ore | 76,053 | 56,864 | 48,253 | 58,000 ^{r, e} | 49,000 e |
| Metal: | 10,033 | 50,004 | 70,233 | 50,000 | 77,000 |
| Smelter output, primary and secondary | 32,550 | 33,504 | 32,550 | 30,400 r. e | 11,500 e |
| Refined ^e | 64,100 | 58,400 | 41,000 | 45,000 | 50,000 |
| Gold ^{e, 6} kilograms | 500 | 2,000 | 5,000 r | 6,500 r | 4,500 |
| Iron and steel: | | _,,,,, | -, | -, | ., |
| Iron ore: | | | | | |
| Gross weight thousand metric tons | 4,076 | 3,932 | 3,433 ^r | 3,429 ^r | 3,857 |
| Fe content ^e do. | 2,200 | 2,100 | 1,830 ^r | 1,830 r | 2,060 |
| Metal: | • | | , | ŕ | , |
| Pig iron and ferroalloys: | | | | | |
| Ferrochromium | 97,240 | 50,735 | 11,200 | 35,393 ^r | 28,701 |
| Ferrosilicon | | 5,895 | 7,245 | 7,000 e | |
| Pig iron | 300,000 ^e | 247,598 | 157,622 | 181,080 | 213,210 |
| Steel, crude including castings thousand metric tons | 14,325 | 14,382 | 16,046 | 18,298 ^r | 19,868 |
| Lead: | | | | | |
| Mine output, Pb and Pb-Zn ores: | | | | | |
| Gross weight | 345,391 | 388,795 | 375,592 | 379,250 | 407,637 |
| Pb content | 17,270 | 17,923 | 17,352 | 17,500 | 18,650 |
| Concentrates: ^e | | | | | |
| Gross weight | 13,000 | 13,000 | 13,000 | 13,000 | 14,000 |
| Pb content | 8,500 | 8,500 | 8,500 | 8,500 | 9,100 |
| Metal, refined ^e | 4,000 | 4,000 | 4,000 | 6,000 | 6,000 |
| Manganese ore, gross weight ⁷ | 23,300 | 20,000 | 20,000 | 18,000 | 13,751 |
| Nickel, mine output, Ni content ^e | | NA | NA | 640 | |
| Silver, mine output, Ag content ⁸ kilograms | 110,000 ^e | 118,000 ^r | 79,000 ^r | 95,000 ^r | 73,000 e |
| Zinc: | | | | | |
| Mine output, Zn and Cu-Zn ore: | | | | | |
| Gross weight thousand metric tons | 861 | 816 | 895 ^r | 930 ^r | 765 |
| Zn content do. | 39 | 37 | 46 ^r | 47 ^r | 44 |
| Concentrates: ^e | | | | | |
| Gross weight | 26,000 r | 25,300 ^r | 33,100 ^r | 33,600 ^r | 33,400 |
| Zn content | 26,000 ^r | 25,300 ° | 33,100 ^r | 33,600 ^r | 33,400 |
| INDUSTRIAL MINERALS | | | | | |
| Aluminum sulfate, alunite | 12,266 | 11,531 | 11,389 | 10,458 | 10,920 |
| Barite, crude | 120,893 | 57,373 | 106,843 | 119,648 | 134,504 |
| Boron minerals: | | | | | |
| Run of mine | 2,398,220 | 2,357,592 | 2,214,064 | 2,207,092 | 2,878,930 |
| Concentrates | 1,402,000 | 1,493,361 | 1,368,000 ^r | 1,399,000 ^r | 1,697,000 |
| Refined borates | 435,000 | 420,000 ^e | 436,000 | 518,000 ^r | 715,000 |
| Cement, hydraulic thousand metric tons | 35,825 | 30,125 | 32,576 | 35,077 | 38,019 |
| See footnotes at end of table | | | | | |

See footnotes at end of table.

$TABLE \ 1--Continued \\ TURKEY: \ PRODUCTION \ OF \ MINERAL \ COMMODITIES^1$

(Metric tons unless otherwise specified)

| Clays: | Commodity INDUSTRIAL MINERAL | SContinued | 2000 | 2001 | 2002 | 2003 | 2004 ^p |
|--|---|----------------------------|----------------------|---------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| | | 5 Commucu | | | | | |
| Manufact | | | 626 272 | 674 170 | 550 224 | 921 146 | 950,000 |
| Distance | | | | | | · · · · · · · · · · · · · · · · · · · | , |
| Distribute | | | | | | | |
| Emery | | | | | | | |
| Felsbarn, run of mine | | | , | · · · · · · · · · · · · · · · · · · · | | , | , |
| Fluorspare | | | , | · · · · · · · · · · · · · · · · · · · | , | | |
| Class. crude | | | | | | | |
| | | thousand motivis tons | | | , | | |
| System S | | thousand metric tons | , | <i>'</i> | , | , | , |
| Limes | | | | | · · | | * |
| Magnesic, run of mine kilograms 5,00 4,40,01 3,044,440 3,234,278 3,732,926 Nitrogen, N. content of ammonia 53,400° 67,100° 300,500 20,000 150 Pertite, run of mine 14,492 70,783 11,902 136,683 133,839 Purice, cuproous gross weight 61,655 662,872 95,204 1,032,77 765,432 Solitica sand, gross weight 60 21,26 1,771 2,197 2,243 2,188 Solitica sand, gross weight 60 620 640 825 83,58 84 Solitius and gross weight 60 620 640 825 83,58 84 Solitius and gross weight 60 620 640 825 83,58 84 Solitius and gross weight 60 620 640 825 83,58 84 Solitius and gross weight 60 60 640 825 83,58 84 Solitius and gross weight 60 60 640 825 | | | | | | · · · · · · · · · · · · · · · · · · · | , |
| Merchaum | | thousand metric tons | | <i>'</i> | · · · · · · · · · · · · · · · · · · · | , | |
| Nitrogen, N. content of ammonia 153,400 ° 67,100 ° 300,500 289,300 329,400 290,000 289,000 313,829 200 200 200 200,800 200 | | | | | | | |
| Perfine mun of mime | | kılograms | | | | | |
| Pamice | | | , | <i>'</i> | | <i>'</i> | |
| Pyrites, cupreous, gross weight 561,565 662,872 952,094 1,103,872 765,432 5816a aand, gross weight thousand metric tons 504 1,485 1,207 1,274 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,283 1,188 504 1,108 1,188 1,283 1,188 1,283 1,283 1,188 1,283 1, | | | | | | | |
| Silica and, gross weight thousand metric tons 50dium compounds: | | | | | | | , , |
| Sodium compounds: Salt, NaCl, all types do. 2,126 1,771 2,197 2,243 2,158 8.05 8.00 8.00 9.00 | <u>, , , , , , , , , , , , , , , , , , , </u> | | | | | | |
| Salt, NaCl, all types | | thousand metric tons | 1,485 | 1,207 | 1,274 | 1,283 | 1,188 |
| Soda ash, trona do. 620 640 825 ' 835 ' 846 Sodium sulfare, concentrates 456,590 300,000 ' 562,660 ' 556,575 ' 523,285 ' Stone: Dolomite 456,590 ' 300,000 ' 562,660 ' 556,575 ' 523,285 ' Dolomite Limestone, other than for cement thousand metric tons Marble cubic iemeters 647,160 ' 40,572 ' 30,261 ' 28,600 ' 30,963 ' Marble cubic iemeters 647,160 ' 460,834 ' 557,630 ' 544,629 ' 668,996 ' Quarzite 40,000 ' 110,000 ' 116,278 ' 116,000 ' 100,000 ' Stonetrates 40,000 ' 24,150 ' 36,555 ' 70,000 ' 70,000 ' 60,000 ' Stoffutr' 45,000 ' 26,000 ' 43,000 ' 50,000 ' 35,000 ' 40,000 ' 100,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40,000 ' 40, | | | | | | | |
| Sodium sulfate, concentrates | | | , | , , , | | | , |
| Dolomite | | do. | | | | | |
| Dolomite | · · · · · · · · · · · · · · · · · · · | | 456,590 | 300,000 ° | 562,660 | 556,575 | 523,285 |
| Limestone, other than for cement Cubic meters | | | | | | | |
| Marble | | | | | | | |
| Quartzite 2,743,271 2,085,791 2,006,654 2,908,584 2,961,932 | | | | | | , | |
| Strontium minerals, celestite: | | cubic meters | | · · · · · · · · · · · · · · · · · · · | | · · · · · · · · · · · · · · · · · · · | |
| Run of mine | | | 2,743,271 | 2,085,791 | 2,006,654 | 2,908,584 | 2,961,932 |
| Concentrates | | | | | 2 | 2 | |
| Sulfure | | | | | | · · · · · · · · · · · · · · · · · · · | |
| S content of pyrites 45,000 ° 26,000 ° 43,000 ° 50,000 ° 35,000 | | | 24,150 3 | 63,635 3 | 70,000 | 70,000 | 60,000 |
| Petroleum | | | | | | | |
| Petroleum 43,000 51,000 48,000 ³ 42,000 ° 49,000 Other 75,000 75,000 75,000 72,000 72,000 72,000 Total 163,000 152,000 166,000 ° 164,000 ° 156,000 MINERAL FUELS AND RELATED MATERIALS 883 98 60 ° 60 Asphalt, natural 150,000 ° 150,000 ° 37,413 ° 6,754 32,686 Corbon black 35,144 35,000 37,413 ° 6,754 32,686 Cotal: Brad coal, run of mine do. 61,315 58,173 49,627 43,749 43,749 Coke and semicoke do. 2,090 1,890 2,080 2,759 7,84196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 | | | 45,000 ^r | 26,000 ^r | 43,000 ^r | 50,000 ^r | 35,000 |
| Other 75,000 75,000 75,000 72,000 60 60 60 60 60 60 60 60 60 60 60 70,000 180 00 71,159 738,915 738,915 738,915 738,915 743,916 743,749 743,749 743,749 740,600 74,960 74,960 74,979 74,979 74 | | | | | | | |
| Total 163,000 152,000 166,000 164,000 156,000 156,000 Talc 154,278 883 98 60 60 60 MINERAL FUELS AND RELATED MATERIALS | | | , | · · · · · · · · · · · · · · · · · · · | | , | , |
| Tale | | | | | | | |
| MINERAL FUELS AND RELATED MATERIALS Asphalt, natural 150,000 ° 150,000 ° 118,235 217,759 738,915 Carbon black 35,144 35,000 37,413 ° 6,754 32,686 Coal: Bard coal, run of mine thousand metric tons 3,330 3,370 3,313 3,090 2,843 Lignite, run of mine do. 61,315 58,173 49,627 43,749 43,754 Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 638 | | | | | | - , | · · · · · · · · · · · · · · · · · · · |
| Asphalt, natural 150,000 ° 150,000 ° 118,235 217,759 738,915 | | | 54,278 | 883 | 98 | 60 r | 60 |
| Carbon black 35,144 35,000 37,413 ° 6,754 32,686 Coal: Hard coal, run of mine thousand metric tons 3,330 3,370 3,313 3,090 2,843 Lignite, run of mine do. 61,315 58,173 49,627 43,749 43,754 Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° | | TED MATERIALS | | | | | |
| Coal: Hard coal, run of mine thousand metric tons 3,330 3,370 3,313 3,090 2,843 Lignite, run of mine do. 61,315 58,173 49,627 43,749 43,754 Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° 14,000 Kerosene do. 6,38 209 312 <td< td=""><td>Asphalt, natural</td><td></td><td>150,000 ^e</td><td>150,000 ^e</td><td>118,235</td><td>217,759</td><td>738,915</td></td<> | Asphalt, natural | | 150,000 ^e | 150,000 ^e | 118,235 | 217,759 | 738,915 |
| Hard coal, run of mine thousand metric tons 3,330 3,370 3,313 3,090 2,843 Lignite, run of mine do. 61,315 58,173 49,627 43,749 43,754 Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° 14,000 Kerosene do. 638 209 312 540 ° 340 | Carbon black | | 35,144 | 35,000 | 37,413 ^r | 6,754 | 32,686 |
| Lignite, run of mine do. 61,315 58,173 49,627 43,749 43,754 Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 638 209 312 540 ° 340 Kerosene do. 70,333 58,901 59,281 53,800 ° 53,660 Lubricants do. 4,322 1,736 2,090 1,960 ° 2,050 < | | | | | | | |
| Coke and semicoke do. 2,090 1,890 2,080 2,543 2,855 Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° 14,000 Kerosene do. 638 209 312 540 ° 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 ° 53,660 Lubricants do. 4,322 1,736 2,090 1,960 ° 2,050 | Hard coal, run of mine | thousand metric tons | | | | | |
| Gas, natural, marketed thousand cubic meters 611,822 600,000 ° 268,000 ° 275,947 344,196 Petroleum: Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° 14,000 Kerosene do. 638 209 312 540 ° 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 ° 53,660 Lubricants do. 4,322 1,736 2,090 1,960 ° 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 ° 40,270 <td>Lignite, run of mine</td> <td>do.</td> <td>61,315</td> <td></td> <td>49,627</td> <td>43,749</td> <td>43,754</td> | Lignite, run of mine | do. | 61,315 | | 49,627 | 43,749 | 43,754 |
| Petroleum: Crude | Coke and semicoke | | | 1,890 | | 2,543 | |
| Crude thousand 42-gallon barrels 19,783 18,370 17,579 16,980 16,270 Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 ° 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 ° 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 ° 14,000 Kerosene do. 638 209 312 540 ° 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 ° 53,660 Lubricants do. 4,322 1,736 2,090 1,960 ° 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 ° 40,270 Asphalt do. 7,764 6,661 7,548 8,550 ° 8,430 Unspecified 11 do. 3,110 <t< td=""><td></td><td>thousand cubic meters</td><td>611,822</td><td>600,000 e</td><td>268,000 e</td><td>275,947</td><td>344,196</td></t<> | | thousand cubic meters | 611,822 | 600,000 e | 268,000 e | 275,947 | 344,196 |
| Refinery products: Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 r 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 r 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 r 14,000 Kerosene do. 638 209 312 540 r 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Petroleum: | | | | | | |
| Liquefied petroleum gas do. 7,409 8,019 8,580 7,960 r 8,340 Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 r 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 r 14,000 Kerosene do. 638 209 312 540 r 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Crude | thousand 42-gallon barrels | 19,783 | 18,370 | 17,579 | 16,980 | 16,270 |
| Gasoline do. 39,889 24,993 31,634 28,800 27,350 Naphtha do. 15,717 16,656 11,947 10,700 r 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 r 14,000 Kerosene do. 638 209 312 540 r 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Refinery products: | | | | | | |
| Naphtha do. 15,717 16,656 11,947 10,700 r 12,700 Jet fuel do. 11,009 9,496 9,368 13,300 r 14,000 Kerosene do. 638 209 312 540 r 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Liquefied petroleum gas | do. | | | | | 8,340 |
| Jet fuel do. 11,009 9,496 9,368 13,300 r 14,000 Kerosene do. 638 209 312 540 r 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Gasoline | do. | 39,889 | 24,993 | 31,634 | | 27,350 |
| Kerosene do. 638 209 312 540 г 340 Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 г 53,660 Lubricants do. 4,322 1,736 2,090 1,960 г 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 г 40,270 Asphalt do. 7,764 6,661 7,548 8,550 г 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 г 3,610 | | do. | | | | | |
| Distillate fuel oil 10 do. 70,333 58,901 59,281 53,800 r 53,660 Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified 11 do. 3,110 5,969 6,125 2,640 r 3,610 | Jet fuel | do. | 11,009 | 9,496 | | | 14,000 |
| Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified ¹¹ do. 3,110 5,969 6,125 2,640 r 3,610 | | do. | 638 | 209 | 312 | 540 ^r | 340 |
| Lubricants do. 4,322 1,736 2,090 1,960 r 2,050 Residual fuel oil do. 8,769 56,323 53,077 38,600 r 40,270 Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified ¹¹ do. 3,110 5,969 6,125 2,640 r 3,610 | Distillate fuel oil ¹⁰ | do. | 70,333 | 58,901 | 59,281 | 53,800 ^r | 53,660 |
| Residual fuel oil do. 8,769 56,323 53,077 38,600 г 40,270 Asphalt do. 7,764 6,661 7,548 8,550 г 8,430 Unspecified ¹¹ do. 3,110 5,969 6,125 2,640 г 3,610 | Lubricants | do. | 4,322 | 1,736 | 2,090 | 1,960 ^r | 2,050 |
| Asphalt do. 7,764 6,661 7,548 8,550 r 8,430 Unspecified ¹¹ do. 3,110 5,969 6,125 2,640 r 3,610 | Residual fuel oil | do. | 8,769 | 56,323 | 53,077 | 38,600 ^r | 40,270 |
| Unspecified ¹¹ do. 3,110 5,969 6,125 2,640 ^r 3,610 | Asphalt | do. | | | | 8,550 ^r | 8,430 |
| Total do. 168,960 188,963 189,962 166.850 r 170.750 | | | | | | | |
| | Total | | | · · · · · · · · · · · · · · · · · · · | | | |

See footnotes at end of table.

TABLE 1--Continued TURKEY: PRODUCTION OF MINERAL COMMODITIES¹

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ^pPreliminary. ^rRevised. NA Not available

¹Table includes data available through September 12, 2005. In addition to the commodities listed, large quantities of construction materials (clay, sand, and gravel) are quarried. Also mined are basalt, diabase, granite, onyx, sandstone, serpentine, slate, and travertine for building stone, limestone and gypsum for cement manufacture, and molybdenum, olivine, titanium, tungsten, and zeolite, but information is inadequate to estimate output.

²Data are for public sector production only. Data for private sector production are not available, but production is believed to be approximately 30,000 metric tons per year.

³Reported figure.

⁴Approximately 70% of gross production is salable product.

⁵Copper 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.

⁶Data includes estimated content of Turkish copper refinery tankhouse slimes. Prior to 2001, all gold production was the byproduct of base-metals refining.

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 3% to 5%.

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

⁹Estimated sales only.

¹⁰Diesel fuel (gasoil) and special heating oil.

¹¹Includes refinery fuel and losses.