



# 2013 Minerals Yearbook

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## TURKMENISTAN

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# THE MINERAL INDUSTRY OF TURKMENISTAN

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Turkmenistan has more than 200 identified mineral deposits, including celestine; clays, such as bentonite and kaolin; coal; gypsum; marble; potash; quartz sand; salt; sand and gravel; and sulfur. The country's most important mineral deposits, from an economic perspective, are its oil and gas deposits and bromine-iodine brines. Globally, in 2013, Turkmenistan was ranked 4th in iodine production and 10th in bromine production. Turkmenistan had the world's fourth-ranked proven gas reserves, which were estimated to be 17.5 trillion cubic meters, and the country was the second-ranked dry natural gas producer in Eurasia, after Russia. The country's proven crude oil reserves were estimated to be 600 million barrels (Mbbbl). In 2013, the nonfuel minerals produced in Turkmenistan included bentonite clay, cement, gypsum, lime, and salt, among others (Infoabad, 2013; BP p.l.c., 2014; Ober, 2015; Polyak, 2015).

## Minerals in the National Economy

In 2013, the nominal gross domestic product (GDP) was \$41.85 billion. Turkmenistan's real GDP increased by 10.2% in 2013 compared with 11.1% in 2012 owing to the increase in gas exports to China, Iran, and Russia, and to an increase in public investment in the nonhydrocarbons sector. The Government planned to diversify the economy of Turkmenistan and to reduce the country's reliance on hydrocarbon resources. The Government decided to increase its share of the nonhydrocarbon sector by using public investment funds to improve the infrastructure of the nonhydrocarbon sector. Industrial production increased by 7.3% in 2013 compared with 8.6% in 2012 owing to the increase in the production of chemicals, construction materials, electrical power, and hydrocarbons (Asian Development Bank, 2014, p. 121; Economist, The, 2014; Eurasian Development Bank, 2014).

Turkmenistan's total trade value for 2013, including exports and imports, increased to \$34.36 billion, or by 2.4% compared with that of 2012, owing to an increase in gas exports to China, Iran, and Russia. Total exports were valued at \$19.9 billion, of which hydrocarbon exports accounted for \$18.7 billion (or 94% of the total export value), and total imports were valued at \$14.46 billion. Export commodities included cotton fiber, crude oil, gas, petrochemicals, and textiles. In 2013, Turkmenistan's main export partners were China (which received 69% of Turkmenistan's exports), the European Union (EU) (9%), Turkey (5%), the United Arab Emirates (UAE) (3%), Afghanistan and Iran (2% each), and Kazakhstan and Russia (1% each). Import commodities included chemicals, foodstuffs, and machinery and equipment. In 2013, Turkmenistan's main import partners were Turkey (which supplied 23% of Turkmenistan's imports), Russia (16%), China (13%), the UAE (7%), Ukraine (5%), Belarus (4%), Iran and the United States (3% each), and Kazakhstan (1.9%). In 2013, to support domestic cement production and streamline cement imports, the President of Turkmenistan signed a resolution stating that

cement importers to Turkmenistan have to pay a 100% customs duty; the minimum customs import duty is \$200 per metric ton of cement (European Commission, 2013a, p. 9; Global Cement, 2013a; International Monetary Fund, 2013; U.S. Department of Commerce, 2014, p. 2).

Most of the foreign direct investment (FDI) in Turkmenistan was invested in the oil and gas sector. The FDI was directed toward the development of three onshore production-sharing agreements (PSAs)—the Nebitdag contractual territory, which was operated by Eni S.p.A. of Italy (formerly Burren Energy Plc. of the United Kingdom); the Khazar project, which was a joint venture between the Turkmennebit State Oil Concern and Mitro International of Austria; and the Bagtyyarlyk contractual territory, which was operated by China National Petroleum Corp. (CNPC). Six additional PSAs were in effect for offshore operations, including Block I, which was operated by Petroliam Nasional Berhad (Petronas) of Malaysia; Block II (Cheleken contractual territory), which was operated by Dragon Oil plc of the UAE; Block III, which was operated by Buried Hill Serdar Ltd. of Canada; Blocks 11 and 12, which were operated by the joint venture of Maersk Oil of Denmark and Wintershall Holding GmbH of Germany; Block 23, which was operated by Rheinisch-Westfälisches Elektrizitätswerk AG (RWE) of Germany; and Block 21, which was operated by Itera Oil and Gas Co. of Russia (Itera). Under the PSAs, the corporate entities are subject to a 20% profit tax and a 15% royalty; in addition, 70% of the workforce of the foreign-owned company must be Turkmen citizens, and 20% of the social welfare tax of the local staff is to be paid by foreign investors and their subcontractors (U.S. Department of State, 2013, p. 18).

## Government Policies and Programs

To support Turkmenistan's economic development, the Government planned to increase trade with neighboring countries, to develop natural resources, and to construct necessary infrastructure. On March 2013, the Presidents of Afghanistan, Tajikistan, and Turkmenistan signed a memorandum of understanding for the construction of a 400-kilometer (km) railway that would connect all three countries. The railway would start in the east of Turkmenistan in the Atamyrat District, run to Akina-Andkhoy, Afghanistan, continue to Shir Kahn, Afghanistan, and connect with the town of Payndzh in Tajikistan. The project was part of the Central Asia Regional Cooperation Program, which was financed by the Asian Development Bank. The construction of the railway started on June 2, 2013, and the railway was expected to be completed in all three countries by 2015. The estimated cost was between \$1.5 billion and \$2 billion (Economist, The, 2013; Safirova, 2013; Salimov, 2013; Daly, 2015).

In 2013, Turkmenistan, Afghanistan, Pakistan, and India (TAPI) signed an agreement on the construction of a 1,680-km gas pipeline. The Asian Development Bank was assigned as an

advisor for this project and was to work closely with the TAPI countries to attract foreign investors. The pipeline was expected to start operating by 2018 with the capacity to carry 90 million cubic meters per day of gas. Turkmenistan expected to sell 38 million cubic meters per day of gas to India and Pakistan (each), and Afghanistan would receive the remaining 14 million cubic meters per day of gas (Hindu, The, 2012).

In November 2013, in Brussels, the EU Commissioner for Development announced that Turkmenistan's individual partnership and cooperation agreement (PCA) with the EU had been signed. Also the Commissioner announced that, between 2014 and 2020, about 1 billion euros (EUR)<sup>1</sup> (\$1.4 billion) would be available for Central Asia countries, including Turkmenistan, to support sustainable management of natural resources, social-economic development (including education), and regional security (European Commission, 2013b).

## Production

Detailed production data and other information regarding production of most mineral commodities in Turkmenistan, except natural gas and oil, have not been available for a number of years. The State Committee on Statistics of Turkmenistan reported only production growth rates for most of the economic categories that it tracks, including those for construction materials, metallurgy, mineral fertilizers, and mineral products. Production estimates in table 1 are based on past levels of production and occasional data reports published in the mass media. In 2013, bentonite production increased by 16.4%; cement, by 12%; and rolled steel, by 11.7% (Safirova, 2013, p. 46.1; State Committee on Statistics of Turkmenistan, The, 2013, p. 2–3).

## Commodity Review

### *Industrial Minerals*

**Cement.**—In 2013, cement production in Turkmenistan increased by 12% to 2.7 million metric tons (Mt) from 2.4 Mt in 2012. Turkmenistan had four cement plants operating with a total production capacity of 4.25 million metric tons per year (Mt/yr). State-owned Turkmcement operated two cement plants—the Bezmeinsky and the Kelete plants. Polimeks İnşaat Taahhüt ve San. Tic. A.Ş. of Turkey (Polimeks) operated the other two cement plants—Garlyk and Jebel. The Garlyk cement plant in Lebap Welayaty began operating in 2013 with a designed production capacity of 1.4 Mt/yr; however, the plant produced at a rate of 1 Mt/yr. The Garlyk plant produced Portland cement, oil well cement, and sulfate-resistant cement, and it employed 800 people (Global Cement, 2013b; Chumakin, 2014).

**Iodine and Bromine.**—In 2013, production of iodine increased by about 4% to 500 metric tons (t) from 480 t in 2012. The Government tasked the Turkmenhimiya State Concern with overseeing an increase in the production capacity of the chemical industry, such as at the Balkanabat iodine plant in Balkanabat City, Balkan Welayaty; the Bereket iodine plant in Gumdag City, Balkan Welayaty; and the Hazar chemical plant in Hazar City, Balkan Welayaty, by modernizing the equipment at the plants (AzerNews, 2013a). The modernization program was expected to last until 2030, by which time the production

capacity of the Balkanabat plant was expected to be increased to 275 metric tons per year (t/yr) of iodine and 2,645 t/yr of bromine, and of the Hazar plant, to 330 t/yr of iodine and 4,960 t/yr of bromine (Regnum, 2012).

**Nitrogen.**—Turkmenistan planned to diversify its mineral industry and to decrease the country's reliance on hydrocarbons. In 2013, the Government of Turkmenistan announced that it planned to invest \$70 billion in construction and improvements in the chemical industry during a 5-year period. In 2011, Renaissance Heavy Industries (a subdivision of Renaissance Construction of Turkey), which is headquartered in St. Petersburg, Russia, was awarded the contract for the construction of a large-scale nitrogen-production complex in Mary City. Renaissance Heavy Industries worked in cooperation with Turkmenhimiya State Concern, and such technological companies as Kawasaki Plant Ltd. of Japan and Sojitz Corp. of China. The project was expected to be completed in 2014. The complex would use Turkmenistan's natural gas as feedstock to produce 1,322 metric tons per day (t/d) of ammonia and 2,122 t/d of urea (Chumakin, 2013; Renaissance Construction, 2014a).

In 2013, an agreement was signed between the Turkmenhimiya State Concern, Mitsubishi Corp. of Japan, and GAP İnşaat Yatırım ve Dış Ticaret A.Ş. of Turkey for construction of a large chemical plant in Garabogaz City, Balkan Welayaty, in the Caspian region. Mitsubishi, in cooperation with GAP İnşaat Yatırım ve Dış Ticaret A.Ş., was expected to begin the construction of the plant in the first half of 2015. The plant was expected to start operations in June 2018 with a production capacity of 1.2 Mt/yr. The cost of the project was estimated to be \$1.3 billion (AzerNews, 2013a, p. 6).

**Potash.**—Turkmenistan has three identified potash deposits—the Garlyk, the Karabil, and the Tubegatan deposits. The total potash resources in all three deposits combined were estimated to be approximately 2.8 billion metric tons. In 2010, Turkmenhimiya signed an agreement with JSC Belgorkhimprom of Belarus for the construction of a new potash plant in eastern Lebap Welayaty. The plant's production capacity was expected to be 1.4 Mt/yr and could be increased to 4 Mt/yr. Construction of the plant was underway in 2013 and was expected to be completed in 2015 (Chumakin, 2013; Turkmenistan.ru, 2015).

**Sulfur.**—In 2013, the President of Turkmenistan signed a decree for the restoration of the infrastructure of the Turkmenabat chemical plant, which would have a production capacity of 551,000 t/yr of sulfuric acid. In 2013, Renaissance Heavy Industries, in cooperation with a consortium consisting of Mitsui Engineering & Shipbuilding Co., Ltd. of Japan and Rönesan Türkmen İnşaat Sanayi ve Ticaret A.Ş. of Turkey, was awarded the restoration contract. The restoration project was expected to use 18,000 cubic meters of concrete, 1,310 t of steel, 2,391 t of equipment, and 1,310 t of pipelines. Japan Bank for International Cooperation agreed to finance the project, which was expected to be completed by 2016 (DKL Engineering, Inc., 2014; Renaissance Construction, 2014a, b).<sup>1</sup>

<sup>1</sup>Where necessary, values have been converted from eura area euros (EUR) to U.S. dollars (US\$) at an annual average exchange rate of EUR0.76=US\$1.00 for 2013 and EUR0.76=US\$1.00 for 2012.

## *Mineral Fuels*

**Oil and Natural Gas.**—In 2013, Turkmenistan became a leading natural gas exporter among Caspian Sea and Central Asian countries. Turkmenistan produced 69 billion cubic meters of natural gas, about 94% of which was exported to China, Iran, and Russia. From 2007 through 2013, Turkmenistan signed several agreements with China, Russia, and other countries for the exploration and development of gas and oil fields. In 2007, the initial sales and purchase agreement was signed between CNPC and state-owned Turkmenengaz State Concern for China to import 30 billion cubic meters per year of gas for 30 years, and to explore and develop gasfields in the Amu Darya River region. In 2008, the project was extended to the Bagtyyarlyk contract area, which consists of Block A and Block B. In 2009, CNPC commissioned a natural-gas-processing plant with a processing capacity of 5 billion cubic meters per year. In the same year, China started importing gas through the Central Asia-China Gas Pipeline (Line A and Line B). By the end of 2012, the pipeline had transported more than 44 billion cubic meters of natural gas to China (China National Petroleum Corp., 2014; Natural Gas Europe, 2014).

The CNPC started construction of line C, which would have a transmission capacity of 25 billion cubic meters per year; the line was expected to be operational at the end of 2015. Line C would start at Gedaim on the Turkmen-Uzbek border, run through Uzbekistan and Kazakhstan, and end at the border town of Khorghos in China's western Xinjiang Province, where it would link with China's domestic west-east pipeline (China National Petroleum Corp., 2014).

In 2011, the CNPC and state-owned Turkmenengaz agreed to increase gas shipments to 65 billion cubic meters per year of natural gas by 2016, and an additional natural gas supply was expected to come from the Galkynysh (formerly the Southern Yolotan-Osman) gasfield. The total reserves of the Galkynysh deposit, which is located in the south of Yolotan district, were estimated to be 13.1 to 21.2 trillion cubic meters. The development of Galkynysh started in December 2009 when Petrofac Ltd. of Jersey [United Kingdom] was awarded a \$3.4 billion contract for construction of a gas-processing plant (which would have a production capacity of 10 billion cubic meters per year of natural gas), infrastructure, and pipelines (which would have the capacity to transport 20 billion cubic meters per year). In September 2013, the President of China announced the completion of the first phase of construction and that the second phase of the project had been initiated (Gurt, 2013; Jafarova, 2013; RIA Novosti, 2013; Tiantian, 2013; Platts, 2014; White and Phua, 2014, p. 4).

In May 2013, a joint venture of Republic of Korea companies Hyundai Engineering Ltd. and LG International Corp. was awarded the contract for a large-scale project. The project included the construction of four facilities with a total designed production capacity of 17 Mbbbl of high-octane gasoline and the modernization of two existing oil refineries. The facilities were planned to start operating in May 2015 (AzerNews, 2013b; Hasanov, 2013b; Tandem Post, 2013).

In 2013, Toyo Engineering Corp. of Japan was awarded a contract for the development of a petrochemical complex for

state-owned company Turkmenengaz. The cost of the contract was estimated to be \$800 million. Toyo Engineering Corp. planned to work on this project in cooperation with South Korean companies Hyundai Engineering, Hyundai Engineering and Construction Co. Ltd., and LG International. The complex was expected to produce ethylene, high-density polyethylene, and polypropylene from natural gas produced on the Caspian Sea shelf. Toyo Engineering would be responsible for engineering, procurement, and commissioning the complex's gas-separation unit, which would have a production capacity of 5 billion cubic meters per year, and the ethylene and polypropylene production units (Alperowicz, 2014, p. 26; AzerNews, 2014)

Eni took over Burren Energy in 2008. Eni operated a project under a PSA in the western part of Turkmenistan in a 200-square-kilometer (km<sup>2</sup>) area. Eni held a 100% stake in the Nebitdag Block. The oil production came mainly from the Burun oilfield, and the produced oil was transported to the Turkmenbashi refinery plant by pipeline. In 2013, Eni produced 3.0 Mbbbl of oil and 60 million cubic meters of natural gas (Eni S.p.A., 2013, p. 28, 35, 36; 2014).

In 2000, Dragon Oil was granted a 25-year contract under a PSA for the Cheleken area. The Cheleken contract area was estimated to be approximately 950 km<sup>2</sup>. The area consisted of two offshore oil and gas fields—the Dzheitune (Lam) field and the Dzhygalybeg (Zhdanov) field, at a water depth of between 8 and 42 meters (m). On December 31, 2013, Dragon Oil's proven and probable oil and condensate reserves were estimated to be 675 Mbbbl and its oil and condensate contingent (or inferred) resources were estimated to be 69 Mbbbl; the company's gas reserves were estimated to be 40 billion cubic meters and its contingent gas resources were estimated to be 37 billion cubic meters. Dragon Oil planned to increase its oil production to 35 million barrels per year and to employ 1,500 people, of which 92% would be Turkmen nationals, by 2015. Dragon Oil was expected to construct a gas treatment plant in the Hazar area that would have a capacity of 3.57 billion cubic meters per year of gas. The plant was expected to start operating in 2016 (Dragon Oil plc, 2013, p. 8, 15).

In 2009, Itera signed a PSA with the State Agency on Control and Usage of Hydrocarbon Resources. Under the agreement, Itera would be able to conduct surveys for the exploration and development of oil and gas fields within offshore Block 21 on the Caspian shelf. From 2009 through 2012, Itera conducted the following: a two-dimensional seismic survey, an environmental assessment, geochemical exploration for oil and gas on the entire Block, a marine two-dimensional–four-component (2D–4C) and three-dimensional–four-component (3D–4C) seismic survey, and the processing and interpretation of two-dimensional and three-dimensional data. In 2013, Itera drilled the first exploration well on Block 21. This well was the first in Turkmenistan to be drilled to a depth of 7,500 m and at a pressure higher than 1,000 atmospheres. Itera was expected to employ Turkmen citizens, and provide training and the construction of social facilities in the long term (Hasanov, 2013a; ITERA International Group of Companies, 2014).



## Outlook

Turkmenistan is expected to continue to develop its hydrocarbon sector. The first phase of the development of the Galkynysh gasfield has been completed, and it is likely to boost the country's natural gas production and exports. The Government of Turkmenistan also plans to develop the national oil-refining sector because exporting refined petroleum products is usually more profitable than exporting crude oil. In 2013, Turkmenistan focused on the development of the nonhydrocarbon sector. One sign of this emphasis on the nonhydrocarbon sector is Turkmenistan's investment in the chemical and construction material industries. The Government was planning to modernize the existing iodine and bromine plants and to construct new nitrogen- and potash-processing plants, and thus to increase production in the nonhydrocarbon sector (Chumakin, 2013; Safirova, 2013, p. 46.3).

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TABLE 1  
TURKMENISTAN: ESTIMATED PRODUCTION OF MINERAL COMMODITIES<sup>1,2</sup>

(Metric tons unless otherwise specified)

Commodity <sup>3</sup>	2009	2010	2011	2012	2013
<b>METALS</b>					
Rolled steel	10,000	40,000	50,000	120,000	134,000
<b>INDUSTRIAL MINERALS</b>					
Bentonite	50,000	50,000	50,000	61,000 <sup>r</sup>	72,000
Bentonite powder	250	250	250	255	260
Bischofite	100	100	100	105 <sup>r</sup>	110
Bromine	420	445	460	480	500
Cement thousand metric tons	1,100,000 <sup>4</sup>	1,150,000 <sup>r,4</sup>	1,950,000 <sup>r,4</sup>	2,370,000 <sup>r</sup>	2,650,000
Ferrous bromide, 74% Br	85	85	85	95	95
Gypsum	100,000	100,000	100,000	105,000	105,000
Iodine	468 <sup>r</sup>	470 <sup>r</sup>	470 <sup>r</sup>	480	500
Lime	16,000	16,000	16,000	18,000	19,000
Nitrogen, N content of ammonia	270,000 <sup>r</sup>	270,000	270,000	280,000	285,000
Salt	215,000 <sup>r</sup>	215,000	215,000	220,000	225,000
Sodium sulfate	60,000	60,000	60,000	62,000	63,000
Sulfur	9,000	9,000	9,000	10,000	11,000
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Natural gas <sup>4</sup> million cubic meters	38,000	44,000	66,000	69,000	69,000
<b>Petroleum:</b>					
<b>Crude:</b>					
In gravimetric units	8,850,000	9,097,800 <sup>4</sup>	9,882,300 <sup>4</sup>	11,000,000 <sup>4</sup>	12,000,000
In volumetric units thousand 42-gallon barrels	64,300 <sup>r</sup>	66,100 <sup>r</sup>	71,800 <sup>r</sup>	79,915 <sup>r,4</sup>	88,900
<b>Refinery products:</b>					
In gravimetric units	7,600,000	7,752,000 <sup>4</sup>	7,900,000	8,000,000	8,128,000 <sup>4</sup>
In volumetric units thousand 42-gallon barrels	61,100	62,322 <sup>4</sup>	63,200	64,300	65,329 <sup>4</sup>

<sup>r</sup>Revised.

<sup>1</sup>Estimated data are rounded to no more than three significant digits.

<sup>2</sup>Table includes data available through October 9, 2014.

<sup>3</sup>In addition to the commodities listed, barite, bench gravel, coal, dolomite, epsomite, and kaolin are thought to be produced, but available information is inadequate to make reliable estimates of output.

<sup>4</sup>Reported figure.

TABLE 2  
TURKMENISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2013<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits <sup>2</sup>	Location or deposit names	Annual capacity
Argillite	cubic meters	Yashlykskii Keramzit plant	Yagmanskoye deposit, Balkan Welayaty	200,000
Barite-witherite		Arpaklenskiy mining enterprise	Arpaklen deposit	10,000
Do.		NA	Kumytash deposit and other deposits	NA
Bench gravel and loam:				
Bench gravel		Bezmeinskiy deposit	Near Ashgabat	1,200,000
Loam		do.	do.	12,000
Bischofite, epsomite, Caspian Sea salt, Glauber's salt		Karabogazsulfate Association	Kara-Bogaz-Gol Lagoon, off the Caspian Sea	NA
Bromine		Cheleken plant	Cheleken region	5,000
Do.		Nebitdag plant	Nebitdag region	2,500
Cement		Bezmeinskiy cement plant (state-owned Turkmenement)	Bezmein town	1,000,000
Do.		Kelete cement plant (state-owned Turkmenement)	70 km west of Ashgabat	1,250,000
Do.		Jebel cement plant (Polimeks İnşaat Taahhüt ve San.Tic. A.Ş)	Jebel, Balkanabat, Nebitdag region	1,000,000
Do.		Garlyk cement plant (Polimeks İnşaat Taahhüt ve San.Tic. A.Ş)	Lebap Welayaty, Turkmenabat region	1,400,000
Clays:				
Bentonite		Oglanly Mine	Oglanly region, Balkan Welayaty	100,000
Kaolin		Ashgabat glass plant	Kyzylkainskoye deposit	80,000 <sup>c</sup>
Do.		Tuarkyrskoye deposit	250 kilometers southeast of Turkmenbashi	NA
Coal		do.	do.	NA
Dolomite		Ashgabat glass plant	Kelyatinskoye deposit	6,000 <sup>c</sup>
Gypsum		IA Turkmenmineral	Mukry, Tagorin deposits	300,000
Do.		Wastes from Gaurdak sulfur deposit	Gaurdak, Gora	400,000
Do.		Krasnovodsk Aylagy (anhydride) deposit	9 kilometers east of Turkmenbashi	160,000
Iodine		Khazar chemical plant (SI Turkmenhimiya Holding)	Khazar, Balkan Welayaty	355
Do.		Balkanabatskiy iodine plant (SI Turkmenhimiya Holding)	Balkanabat, Balkan Welayaty	255 <sup>c</sup>
Do.		Bereketskiy iodine plant (SI Turkmenhimiya Holding)	Kumdag, Balkan Welayaty	NA
Limestone		Deposits: Gaurdak Kara-Dzhumalaks koye	Locations: 4 kilometers northeast of Gaurdak 60 kilometers from Gaurdak	NA
Limestone, for facing materials		NA	Charshanginskoye, Gaurdaks koye, Geok-Tej Kaylyu, Krasnovodsk Aylagy (tuff and granite), and Tyuzmergenskoye deposits	NA
Natural gas	million cubic meters	Achakskoye, Dauletabad, Doviët-Denmez [Donmez], Gygyrlinskoye, Ioltan (South Yolotan-Osman), North and South Naipskiye, Shatlyk, and Yashlar deposits	Onshore in eastern and southwestern parts of the country and offshore in the Caspian Sea; Murgab basin; Dashoguzskiy, Lebapskiy, Maryyskiy deposits	90,000 <sup>c</sup>
Do.	do.	China National Petroleum Corp. (CNPC)	Amu Darya Basin	5,000
Do.	do.	Eni S.p.A	Nebitdag Block	60
Ozokerite		Cheleken mining enterprise	Cheleken region	NA

See footnotes at the end of table



TABLE 2—Continued  
TURKMENISTAN: STRUCTURE OF THE MINERAL INDUSTRY IN 2013<sup>1</sup>

(Metric tons unless otherwise specified)

Commodity		Major operating companies, main facilities, or deposits <sup>2</sup>	Location or deposit names	Annual capacity
<b>Petroleum:</b>				
Crude	thousand 42-gallon barrels	Barsa-Gelmesskoye, Burunskoye, Cheleken, Gograndagskoye, Ioltan (South Yolotan-Osman), Kamyshldzhinskoye, Korturtepinskoye, Kum Dag, Kuydzhikskoye, Okaremskoye, and Yashlar deposits	Centered in Caspian plain in west Turkmenistan and in offshore oilfields to the west of the Cheleken Peninsula in the Caspian Sea	80,600 <sup>e</sup>
Do.	do.	Eni S.p.A.	Nebitdag Block	3,000
Do.	do.	Dragon Oil plc	Cheleken Basin	35,000
Refined	do.	Refineries: Seidi oil refinery Turkmenbashi complex of oil refineries	Locations: Lebap Welayaty Turkmenbashi	78,000 <sup>3</sup>
Do.		Karabil'skoye deposit	17 kilometers south of Gaurdak	NA
Quartz sand		Annauskoye, Babadurmazskoye, Bakhardenskoye, and Kelyatinskoye deposits	NA	NA
Rock salt		Gaurdak deposit	8 kilometers from Gaurdak	15,000 <sup>e</sup>
Do.		Khodzhuymaskoye deposit	4 kilometers west of Gaurdak	NA
Do.		Kugitangskoye deposit	75 kilometers from Gaurdak	2,000 <sup>e</sup>
Do.		Uzun-Kudukskoye deposit	20 kilometers from Gaurdak	2,000 <sup>e</sup>
Salt		Kuulinskoye	40 kilometers north of Turkmenbashi	650,000 <sup>e</sup>
Salt, iodized		Guvludyz Salt Factory	Balkan Welayaty	60,000
Sand and gravel	cubic meters	Dushaksoye deposit	NA	1,150,000
Do.	do.	Kala-I-Morskoye deposit	NA	925,000
Do.	do.	Kernayskoye deposit	NA	36,000
Do.	do.	Kubatayskoye deposit	NA	740,000
Do.	do.	Ufrinskoye deposit	NA	900,000
Sodium sulfate		Karabogazsulfate Association	Bekdash, Kara-Bogaz-Gol Lagoon (off the Caspian Sea)	400,000
Steel, rolled		Turkmen metallurgical plant	Near Ashgabat	160,000
Do.		Shakhtaminskoye deposit	do.	NA
Do.		IA Turkmenmineral	Gora deposit	340,000
Do.		Kugitangskoye deposit	75 kilometers from Gaurdak	NA

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits. Do., do. Ditto. NA Not available.

<sup>1</sup>Many location names have changed since the breakup of the Soviet Union. Many enterprises, however, are still named or commonly referred to based on the former location name, which accounts for discrepancies in the names of enterprises and that of locations.

<sup>2</sup>The majority of companies are Government owned.

<sup>3</sup>Capacity estimates are totals for all enterprises that produce that commodity.