



2020–2021 Minerals Yearbook

MONGOLIA [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF MONGOLIA

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Note: In this chapter, information for 2020 is followed by information for 2021.

Historically, Mongolia's economy relied on herding and agriculture practices, but since the mid-2000s, it had become increasingly reliant on the mining sector. The country has extensive deposits of coal, copper, fluorite, gold, iron, tungsten, uranium, and zinc. In 2020, Mongolia was the world's third-ranked producer of fluorspar (excluding that of the United States), accounting for 8% of the world's production. The country had reserves of 22 million metric tons (Mt) of fluorspar, accounting for 7% of the world's reserves. As of 2020, Mongolia had some steelworks; however, the country had no smelters for nonferrous ore concentrates and no refineries for crude petroleum and thus exported most of these commodities for processing outside the country (National Development Agency, 2020, p. 34; McRae, 2021, 2022; Mineral Resources and Petroleum Authority of Mongolia, 2021, p. 13).

Minerals in the National Economy

In 2020, Mongolia's real gross domestic product (GDP) decreased by 4.6% compared with an increase of 5.6% in 2019; the nominal GDP was \$13.3 billion. The decrease was mainly owing to reduced mining activities as a result of the coronavirus disease 2019 (COVID-19) pandemic. The mining and quarrying sector accounted for about 24% of the GDP in 2020; the value added by the mining and quarrying sector decreased by 9.9%. Employment in the mining and quarrying sector decreased by 11% to 51,575 people in 2020 and accounted for 4.4% of the country's total employment of 1.163 million (Asian Development Bank, 2021, p. 207; National Statistics Office of Mongolia, 2022a; 2022b, p. 385, 389; World Bank, The, 2023).

In 2020, total exports of goods were valued at \$7.58 billion. Mineral products (excluding unwrought gold) accounted for 69% of total exports, including coal (28%); copper concentrates (23%); iron ore (8%); and crude petroleum, fluorspar, silver concentrates, and zinc concentrates (2%, each). Unwrought gold accounted for 24% of total exports. Total imports of goods were valued at \$5.30 billion, of which imports of refined petroleum products accounted for 15% (Bank of Mongolia, The, 2021, p. 15–16; Zen Innovations AG, 2022).

Regulations governing the mineral sector include the Law on Petroleum Products of 2005; the Law on Petroleum of 2014; the 2014 amendments to the Minerals Law of 2006; and Government Resolution No. 355 of 2019 on artisanal and small-scale mining. Other laws related to the mineral industry include the Law on Nuclear Energy of 2009 and the Law on Investment of 2013 (Mineral Resources Authority, 2016, p. 31, 38; Extractive Industries Transparency Initiative, 2021, p. 42; Mineral Resources and Petroleum Authority of Mongolia, 2022).

The amendment to the 1992 Constitution that was adopted on November 14, 2019, became effective on May 25, 2020. Regarding public wealth and restrictions for foreigners,

Article 6.2 was amended by adding a sentence, "In compliance with the country's long term development policy, the State Natural Resource Exploitation Policy shall aim to ensure citizens' right to healthy and safe environment and equitably distribute wealth through the Sovereign Wealth Fund." This amendment indicates that the Government's future policy would place more emphasis on environmental regulation and wealth management for mining activities (Munkhzul, 2020).

The Government launched the 2020–2024 Action Program in 2020. The program includes a long-term plan to construct transportation networks and to develop the mineral industry and ensure growth in mineral revenues (Cabinet Secretariat of Government of Mongolia, 2020, p. 12–13, 16).

Production

In 2020, substantial increases in production included that of salt, by 392%; mined tin, an estimated 285%; fluorspar (acid grade), 77%; and mined gold, 24%. The production of mined tungsten decreased by an estimated 91%; anthracite, 76%; raw steel, 46%; crude petroleum, 40%; metallurgical coal, 25%; copper (solvent extraction), 19%; bituminous coal, 17%; and lignite, 10%. These declines in production were likely due to the export disruptions caused by the COVID-19 pandemic. Data on mineral production are in table 1.

Structure of the Mineral Industry

Most of the mining companies in Mongolia were owned by the Government (such as Erdenet Mining Corp. and Mongolrostsvetmet LLC) or by joint-venture companies made up of foreign companies and the Government of Mongolia (such as Oyu Tolgoi LLC). A few companies were wholly owned by foreign investors (such as PetroChina Daching Tamsag-Mongolia LLC). Table 2 is a list of major mineral industry facilities.

The Mineral Resources and Petroleum Authority of Mongolia is the Government entity responsible for supporting the development of state policy on mining and petroleum and for administering the activities related to the country's "geological" resources. In 2020, the Government approved a resolution on establishing the National Geological Survey (NGS). The NGS, which had 68 staff, was tasked with conducting geologic surveys and creating the country's mineral resource database (Unurzul, 2020).

The construction of a 415-kilometer (km) railway with an annual capacity of 30 Mt between the Tavan Tolgoi coal mine and Zuunbayan (northeast of Tavan Tolgoi) continued in 2020. Another railway project, the 240-km railway from Tavan Tolgoi to Gashuun Sukhait (along the Chinese border, southeast of Tavan Tolgoi) continued in 2020; it was scheduled to begin operating in 2022. As of 2020, Mongolia exported coal and iron

ore mainly by truck through dry ports, including ports at the border with the Inner Mongolia Autonomous Region of China, such as the Ports of Zamyn-Uud, Khangai, Gashuun Sukhait, and Shivee Khuren. Completion of these two projects would enable Mongolia to increase the export of metallurgical coal to China (Ankhtuya, 2020b; Batchimeg, 2020a, b).

Commodity Review

Metals

Copper.—In 2020, Oyu Tolgoi LLC's Oyu Tolgoi Mine produced 149,600 metric tons (t) of copper (Cu content) compared with 146,300 t in 2019; the increase was attributed to the development of high-grade ore areas. The underground expansion project at Oyu Tolgoi continued during the year. First output from the project would be achieved in October 2022, and the total output from the open pit and underground mine was expected to reach 480,000 metric tons per year (t/yr) of copper for the period 2028–36. As of 2020, Oyu Tolgoi's reserves were 743 Mt at a grade of 0.44% copper at the open pit and 448 Mt at a grade of 1.51% copper at the underground mine. Turquoise Hill Resources Ltd. of Canada managed Oyu Tolgoi LLC on behalf of all shareholders. Rio Tinto plc of the United Kingdom held a 50.8% stake in Turquoise Hill Resources (Rio Tinto plc, 2021, p. 53, 221, 339, 341).

Gold and Silver.—In 2020, Mongolia produced about 20,230 kilograms (kg) of gold and 57,000 kg (estimated) of silver and exported 30,500 kg of unwrought gold (valued at \$1.8 billion) and 202,000 t of silver ore concentrates (\$124 million). Because only a small amount of gold ore concentrate was exported (\$6.3 million) and there were no commercial gold refineries in the country, it is likely that most gold ore was processed to unwrought gold domestically through local beneficiation facilities and small refinery workshops (table 1; Bank of Mongolia, The, 2021, p. 15; Zen Innovations AG, 2022).

The Oyu Tolgoi Mine was the country's leading gold producer and the second-ranked silver producer after Erdenet Mining Corp.'s Erdenetiin-Ovoo Mine. In 2020, gold output at Oyu Tolgoi decreased to 5,660 kg from 7,520 kg in 2019, owing to a temporary reduction in gold grades. The mine extracted 27,250 kg of silver compared with 26,970 kg in 2019. As of 2020, Oyu Tolgoi had reserves of 370 t of gold (which was down from 403 t in 2019) and 2,370 t of silver (down from 2,600 t in 2019) (Rio Tinto plc, 2021, p. 30, 339–340, 342–343).

Industrial Materials

Fluorspar.—Mongolrostsvetmet LLC was the leading fluorspar producer in Mongolia; artisanal and small-scale miners also played a significant role in the country's fluorspar production. The country produced fluorspar at both acid grade (more than 97% CaF₂) and metallurgical grade (less than or equal to 97% CaF₂). In 2020, acid-grade fluorspar production increased by 77% to 85,000 t, whereas metallurgical-grade production was estimated to decrease by 2% to 640,000 t. After the modernization of the Bor-Undur Mine in 2017, Mongolia produced an average of nearly 660,000 t/yr of both grades of fluorspar during the years 2018–20. All output of fluorspar

was exported owing to the lack of domestic demand. In 2020, Mongolia exported 683,000 t of both grades, which together were valued at \$101 million; China, the leading recipient, received 512,000 t valued at \$61 million, followed by Russia, 153,000 t valued at \$30 million (table 1; Montastudio, 2020; Zen Innovations AG, 2022).

Mineral Fuels

Coal.—In 2020, Mongolia was the world's sixth-ranked producer of metallurgical coal, accounting for nearly 3% (27.5 Mt) of the world's production. The country was the world's fourth-ranked exporter (23.8 Mt) of metallurgical coal after Australia (171.8 Mt), the United States (38.1 Mt), and Canada (27.0 Mt). China was the sole recipient of Mongolia's export of metallurgical coal (table 1; U.S. Energy Information Administration, 2022; Zen Innovations AG, 2022).

Erdenes Tavan Tolgoi (ETT) JSC, which was the country's leading metallurgical coal producer, was partially owned by the Government (81.5%). The company extracted 13.1 Mt of metallurgical coal in 2020. After failures in 2011 and 2015, Mongolia's legislature approved the 2018 plan to resume an initial public offering (IPO) for ETT through the Hong Kong Stock Exchange by 2020. The IPO would sell up to a 30% share of the company (valued at more than \$1 billion) of ETT. In April 2020, however, the Government canceled the plan owing to the COVID-19 pandemic (Jamasmie, 2020; Baljmaa, 2021).

Petroleum.—Construction of Mongolia's first petroleum refinery continued in Altanshiree Soum of Dornogovi Aymag (Province) in 2020. The plant, which was funded by the Government of India, would start operations in 2023 and have a capacity of 1.5 million metric tons per year (about 11 million barrels per year) of refined petroleum. The new refinery was expected to enable Mongolia to increase productivity in the industrial sector by 30% and the GDP by 10% by increasing its self-sufficiency with respect to refined petroleum products. In 2020, Mongolia produced 560,000 t (4.1 million barrels) of crude petroleum and exported about the same amount. During the year, the country imported 1.67 Mt (valued at \$771 million) of refined petroleum products, mostly from Russia, which supplied 93% (1.56 Mt) of Mongolia's refined petroleum imports (Anudari, 2020; Mineral Resources and Petroleum Authority of Mongolia, 2021, p. 24; Zen Innovations AG, 2021).

MINERAL INDUSTRY HIGHLIGHTS IN 2021

In 2021, Mongolia's real GDP increased by 1.4%; the nominal GDP was \$15.3 billion. The slowed GDP growth was attributed to China's border closures during the ongoing COVID-19 pandemic, which had led to trade disruptions, including delays in the export of metallurgical coal to China. The mining and quarrying sector accounted for about 25% of the GDP in 2021. Employment in the mining and quarrying sector increased by 9% to 56,003 people in 2021, which accounted for 5.0% of the country's total employment of 1.126 million (Bank of Mongolia, The, 2022, p. 9, 15; National Statistics Office of Mongolia, 2022a; 2022b, p. 389; World Bank, The, 2023).

During the year, exports of mineral products (excluding unwrought gold) accounted for 81% of the country's total

exports of goods (or \$9.25 billion), including copper concentrates (31%), coal (30%), and iron ore (10%). Unwrought gold accounted for 11% of total exports. Imports of refined petroleum products accounted for 17% of the country's total imports of goods (or \$6.85 billion). The Tavan Tolgoi-Zuunbayan railway project, which was originally planned to be completed in 2021, was rescheduled to start operations in 2022 (Oyun-Erdene, 2021b; Bank of Mongolia, The, 2022, p. 14–16; Zen Innovations AG, 2022).

Notable increases in mineral production included that of mined tungsten, by an estimated 264%; anthracite, 171%; raw steel, 135%; lime, 34%; metallurgical coal, 27%; metallurgical coke and crude petroleum, 14% each. The production of salt decreased by 49%; fluor spar (acid grade), 29%; and iron ore, 23% (table 1).

The Ecological Police force, which was established in 2020, is a Government unit responsible for implementing policies to protect the environment, combat and prevent environmental crime and conflict, and reduce environmental destruction. In 2021, the Ecological Police reported 23 cases of illegal mining—including at 20 gold deposits, 2 fluor spar deposits, and 1 deposit of other minerals—across 13 Aymags. Unauthorized mining (mostly artisanal or small-scale operations) had been problematic in the country, causing soil and water pollution (Ankhtuya, 2020a; Extractive Industries Transparency Initiative, 2021, p. 41–42; Oyun-Erdene, 2021a).

In July, Badrakh Energy LLC (formerly AREVA Mines LLC) launched a pilot program to extract uranium from the Zoovch Ovoo (or Zuuvch-Ovoo) uranium deposit in Dornogovi Aymag. The company aimed to extract 20 t of uranium from the deposit after a 2-year pilot program. As of 2018, geologic reserves at the Zoovch Ovoo deposit were estimated to be about 93,000 t of uranium. Badrakh Energy was a joint venture of AREVA Mongol LLC (a subsidiary of Orano Mining Group of France, 66%) and state-owned MonAtom LLC (34%) (Badrakh Energy LLC, 2021a, p. 7, 12; 2021b).

Outlook

In line with the Government's Action Program for 2020–2024, Mongolia is promoting the mineral industry through companies that are partially or wholly owned by the Government. If successful, the country is expected to increase the production capacity of the leading mines, such as the Erdenetiin-Ovoo and the Oyu Tolgoi copper mines and the Baganuur, Shivee Ovoo, and Tavan Tolgoi coal mines. The country is expected to start to produce petroleum refinery products once the Altanshree Soum refinery is commissioned. Completion of the railways from Tavan Tolgoi to Zuunbayan and Gashuun Sukhait in the near future is expected to increase the export of metallurgical coal to China. Meanwhile, the amendment to the Constitution that would allow the Government to control mining activities and ownership shares over previously legally granted rights may lead to an adverse environment for foreign mining companies (Cabinet Secretariat of Government of Mongolia, 2020, p. 12–13; U.S. Department of State, 2023).

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TABLE 1
MONGOLIA: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons, gross weight, unless otherwise specified)

Commodity ²	2017	2018	2019	2020	2021
METALS					
Copper:					
Mine, Cu content:					
Concentrates ^c	303,000	301,000	290,000	294,000	305,000
Solvent extraction ³	14,689	14,175	11,758	9,488	9,690
Total ^c	318,000	315,000	302,000	303,000	315,000
Refinery, electrowon	14,689	14,175	11,758	9,488	9,690
Gold, mine, Au content kilograms	19,847	20,655	16,251	20,226	19,054
Iron ore, mine:					
Gross weight thousand metric tons	7,695	6,225	8,572	9,224	7,106
Fe content do.	4,620	3,740	5,140	5,530	4,260
Iron and steel, raw steel	21,045	29,169	28,433	15,286	35,900
Lead, mine, Pb content ^c	7,000	11,000	12,000	12,000	11,000
Molybdenum, mine, Mo content	2,924	2,731	2,688	2,889	2,973
Silver, mine, Ag content ^c kilograms	62,000	60,000	57,000	57,000	59,000
Tin, mine, Sn content	25	17 ^r	26 ^r	100 ^e	100 ^e
Tungsten, mine, concentrate, W content ^c	520 ^r	430 ^r	370 ^r	33	120
Zinc, mine, Zn content ^c	41,000	44,000	41,600	38,200	37,600
INDUSTRIAL MINERALS					
Cement, hydraulic thousand metric tons	675	934	1,098	1,182	1,293
Fluorspar:					
Acid grade ⁴ do.	55	81	48	85	60
Metallurgical grade ^{c,5} do.	300 ^r	470 ^r	650 ^r	640	590
Total ^c do.	355 ^r	551 ^r	698 ^r	725	650
Lime, hydrated and quicklime do.	56	59	77 ^r	70	94
Salt	860	997	533	2,624	1,349
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Anthracite	66,300 ^r	115,700 ^r	90,100 ^r	22,000	59,700
Bituminous	8,428,000 ^r	8,387,000 ^r	11,052,000 ^r	9,122,000	9,229,000
Lignite	6,962,000 ^r	7,525,000 ^r	8,053,000 ^r	7,246,000	7,513,000
Metallurgical	32,868,000 ^r	35,374,000 ^r	36,604,000 ^r	27,454,000	34,945,000
Total	48,300,000 ^r	51,400,000 ^r	55,800,000 ^r	43,800,000	51,700,000
Coke, metallurgical	72,200	66,200	60,200	59,100	67,200
Petroleum, crude thousand 42-gallon barrels	7,624	6,389	6,876	4,106	4,667

^cEstimated. ^rRevised. do. Ditto.

¹Table includes data available through November 2, 2022. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits.

²In addition to the commodities listed, gypsum and limestone may have been produced, but available information was inadequate to make reliable estimates of output.

³The copper content of solvent extraction output at the mine level is the same as electrowon refinery output because copper produced in the solvent extraction and electrowinning process is typically reported only at the refinery level.

⁴Flotation concentrate, includes some material less than 97% CaF₂.

⁵May include some submetallurgical-grade fluorspar.

TABLE 2
MONGOLIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2021

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities ¹	Annual capacity ²
Cement	Khutul Cement and Lime JSC	Khutul plant, Saikhan Soum, Selenge Aymag	1,000
Do.	Lian He Cement Corp.	Sergelen plant, Sergelen Soum	1,000
Do.	MonCement (Monpolymet Group)	Senj Sant plant, Orgun Soum	1,000
Do.	Mongolyn Alt (MAK) Corp.	Khukh Tsav plant, Dalanjargalan Soum	1,000
Coal:			
Bituminous	do.	Eldev Mine, Dalanjargalan Soum, Dornogovi Aymag	500
Do.	do.	Naryn Sukhait Mine, Gurvantes Soum, Omnogovi (South Gobi) Aymag	3,000
Do.	Silver Elephant Mining Corp. (formerly Prophecy Development Corp.)	Ulaan Ovoo Mine, Tushig Soum, Selenge Aymag	3,000
Lignite	Baganuur JSC [Erdenes Mongol LLC (on behalf of the Government), 75%]	Baganuur Mine, Tov Aymag	3,000
Do.	Shivee-Ovoo JSC [Erdenes Mongol LLC (on behalf of the Government), 90%]	Shivee Ovoo Mine, Dornogovi and Govisumber Aymags, 20 km from Choir	2,000
Metallurgical	Erdenes Tavan Tolgoi JSC [Erdenes Mongol LLC (on behalf of the Government), 81.5%]	Tavan Tolgoi Mine, Omnogovi (South Gobi) Aymag, 200 km north of the China border	17,000
Do.	Moenco LLC	Khushuut Mine, Darvi Soum, Hovd Aymag	3,000
Do.	Mongolyn Alt (MAK) Corp.	Naryn Sukhait Mine, Gurvantes Soum, Omnogovi (South Gobi) Aymag	3,000
Do.	Mongolian Mining Corp.	Baruun Naran Mine, Omnogovi (South Gobi) Aymag, 60 km east of Dalanzadgad	5,500
Do.	do.	Ukhaa Khudag Mine, Omnogovi (South Gobi) Aymag, 80 km east of Dalanzadgad	8,600
Do.	SouthGobi Resources Ltd. (China Investment Corp., 23.75%, and China Cinda Asset Management Co. Ltd., 17%)	Ovoot Tolgoi Mine, Omnogovi (South Gobi) Aymag	5,000
Do.	Terra Energy LLC (TerraCom Ltd., 100%)	Baruun Noyon Uul (BNU) Mine, Omnogovi (South Gobi) Aymag, 80 km east of Naryn Sukhait Mine	1,500
Unspecified	Ikht Gobi Energy LLC	Mandakhnuur Mine, Mandakh Soum, Dornogovi Aymag	1,000
Do.	Usukh Zoos LLC	Khuren Shand Mine, Gurvantes Soum, Omnogovi (South Gobi) Aymag	3,000
Copper:			
Mine, concentrate, Cu content	Erdenet Mining Corp. (Government, 100%)	Erdenetiin-Ovoo Mine, and processing plant, 180 km west of Darkhan	150
Do.	Mongolyn Alt (MAK) Corp.	Tsagaan Suvarga Mine, Omnogovi (South Gobi) Aymag, 560 km southeast of Ulaanbaatar	70
Do.	Oyu Tolgoi LLC [Turquoise Hill Resources Ltd., 66%, and Erdenes Oyu Tolgoi LLC (on half of the Government), 34%]	Oyu Tolgoi Mine, Omnogovi (South Gobi) Aymag, 80 km north of the China border	210
Refined	Achit Ikht LLC (Head of the Presidential Office, 51%, and Erdenet Mining Corp., 34%)	Solvent extraction-electrowinning plant in Orhon Aymag (near Erdenetiin-Ovoo Mine)	10
Do.	Erdenet Mining Corp. (Government, 100%)	Erdmin solvent extraction-electrowinning plant, 180 km west of Darkhan	3
Fluorspar:			
Ore, gross weight	Mongolrosvetmet LLC (Government, 100%)	Bor-Undur Mine, Hentiy Aymag, 310 km southeast of Ulaanbaatar; 3 underground and 2 open pit mines	600
Do.	Various artisanal and small-scale operators	Mines in various locations	NA
Concentrate, gross weight	Mongolrosvetmet LLC (Government, 100%)	Processing plant at Bor-Undur Mine, Hentiy Aymag, 310 km southeast of Ulaanbaatar	120

See footnotes at end of table.

TABLE 2—Continued
MONGOLIA: STRUCTURE OF THE MINERAL INDUSTRY IN 2021

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities ¹	Annual capacity ^c
Gold, mine, Au content	kilograms	Bayan Airag Exploration LLC	Bayan-Airag Mine, Durvunjil & Zavkhan Soum	NA
Do.	do.	Erdenet Mining Corp. (Government, 100%)	Erdenetiin-Ovoo Mine, and processing plant, 180 km west of Darkhan	200
Do.	do.	Mongolrostsvetmet LLC (Government, 100%)	Zeregtsee placer mine, 240 km southwest of Ulaanbaatar	180
Do.	do.	Oyu Tolgoi LLC [Turquoise Hill Resources Ltd., 66%, and Erdenes Oyu Tolgoi LLC (on behalf of the Government), 34%]	Oyu Tolgoi Mine, Omnogovi (South Gobi) Aymag, 80 km north of the China border	15,000
Do.	do.	Steppe Gold Ltd.	Altan Tsagaan Ovoo Mine, Tsagaan Ovoo Soum	1,000
Iron ore, gross weight		Darkhan Metallurgical Plant JSC (Government, 100%)	Tumur Mine, Khongor Soum, Darhan-Uul Aymag	1,000
Do.	do.		Tumurtei Mine, Khuder Soum, Selenge Aymag	11,000
Do.		Lung Ming Mining Co. Ltd., 66.7%, and China Investment Corp., 33.3%	Eruu Gol Mine, Yeruu, Selenge Aymag, 85 km southeast of Sukhbaatar	2,000
Do.		Mongolrostsvetmet LLC (Government, 100%)	Bargilt Mine and ore dressing plant, 20 km from Bor-Undur	400
Iron and steel, raw steel		Erdenes Steel LLC (Beren Group, 50%, and Erdenes Mongolia LLC, 50%)	Plant in Choir, Bayantal Soum, Govisumber Aymag	200
Do.		Darkhan Metallurgical Plant JSC (Government, 100%)	Plant in Darkhan	100
Lead, mine, Pb content		China Nonferrous Metals Group, 51%, and Government, 49%	Tumurtiin Ovoo Mine, Sukhe Bator, 180 km southwest of Choibalsan	10
Do.		Shandong Xianglong Co. Ltd.	Tsav Mine, Dornod Aymag	15
Lime		Khutul Cement and Lime JSC	Khutul plant, Saikhan Soum, Selenge Aymag	65
Limestone		E-Trans LLC	Quarry in Bayantsagaan Soum, Tov Aymag	NA
Do.		Mongolyn Alt (MAK) Corp.	Quarry, 14 km from the Olon Ovoot station of the Trans Mongolia railway	NA
Molybdenum, mine, Mo content		Erdenet Mining Corp. (Government, 100%)	Erdenetiin-Ovoo Mine and processing plant, 180 km west of Darkhan	3
Do.		Oyu Tolgoi LLC [Turquoise Hill Resources Ltd., 66%, and Erdenes Oyu Tolgoi LLC (on behalf of the Government), 34%]	Oyu Tolgoi Mine, Omnogovi (South Gobi) Aymag, 80 km north of the China border	NA
Petroleum, crude		China Petrochemical Corp. (Sinopec)	Oilfield in Southeast Gobi Basin	NA
Do.		PetroChina Daching Tamsag-Mongolia LLC	Oilfield in Tamsag Basin	NA
Silver, mine, Ag content	kilograms	Erdenet Mining Corp. (Government, 100%)	Erdenetiin-Ovoo Mine and processing plant, 180 km west of Darkhan	31,000
Do.	do.	Oyu Tolgoi LLC [Turquoise Hill Resources Ltd., 66%, and Erdenes Oyu Tolgoi LLC (on behalf of the Government), 34%]	Oyu Tolgoi Mine, Omnogovi (South Gobi) Aymag, 80 km north of the China border	28,000
Do.	do.	Steppe Gold Ltd.	Altan Tsagaan Ovoo Mine, Tsagaan Ovoo Soum	5,000
Tin, mine, Sn content	metric tons	NA	Mines in various placer deposits	100
Tungsten, mine, W content	do.	Erdenet Mining Corp. (Government, 100%)	Erdenetiin-Ovoo Mine and processing plant, 180 km west of Darkhan	140
Do.	do.	SS Mongolia LLC	Khovd River Mine, Tsengel Soum, Bayan-Olgii Aymag	3,300
Zinc, mine, Zn content		Shandong Xianglong Co. Ltd.	Tsav Mine, Dornod Aymag	15
Do.		China Nonferrous Metals Group, 51%, and Government, 49%	Tumurtiin Ovoo Mine, Sukhe Bator, 180 km southwest of Choibalsan	50

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

¹Abbreviations used for units of measure in this table include the following: km—kilometer.