



2020–2021 Minerals Yearbook

IRAQ [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF IRAQ

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

In 2020, Iraq was an important global producer and exporter of crude petroleum. It was the world's fifth-ranked crude petroleum producer and third-ranked crude petroleum exporter. The country produced about 1.51 billion barrels (Gbbbl) of crude petroleum in 2020. Iraq hosted the world's fifth-largest proven crude petroleum reserves, accounting for 8.4% of the world's total. Proven natural gas reserves were estimated to be 3.5 trillion cubic meters, or 1.9% of the world's total. Other mineral commodities produced in Iraq included ammonia, cement, gypsum, refined petroleum products, salt, sand and gravel, silica, sulfur, and urea. Iraq did not mine any metallic minerals. Undeveloped mineral resources in Iraq included bauxite, bentonite, chromite, copper, feldspar, gypsum, iron ore, kaolin, lead, platinum, salt, silica sand, sodium sulfate, uranium, and zinc. Iraq had been a participating member of the Organization of the Petroleum Exporting Countries (OPEC) and the Extractive Industries Transparency Initiative since 1960 and 2010, respectively (table 1; Iraq Geological Survey, 2019; BP p.l.c., 2021, p. 16, 34; 2022, p. 15; Extractive Industries Transparency Initiative, 2021, p. 20–21; Organization of the Petroleum Exporting Countries, 2022, p. 48).

Minerals in the National Economy

In 2020, the real gross domestic product (GDP) of Iraq decreased by 15.7% compared with an increase of 5.8% in 2019. The country's nominal GDP decreased to \$169 billion in 2020 from \$234 billion in 2019, or by 28%. The hydrocarbon sector was estimated to have accounted for about 31% of the total GDP. The sector was also estimated to account for 90% of Government revenue in 2020 compared with 93% in 2019. Exports of crude petroleum decreased by 45% to \$44 billion from \$80 billion in 2019. Furthermore, crude petroleum exports accounted for 87% of the country's total export value of nearly \$51 billion. The decreased value of crude petroleum exports in 2020 was attributed to the decline in global petroleum consumption and prices owing to the global economic downturn caused by the coronavirus disease 2019 (COVID-19) pandemic. The annual average spot price of Basrah Light crude petroleum from Iraq decreased by 49% to \$41.55 per barrel in 2020 from \$63.64 per barrel in 2019. The quantity of crude petroleum exports from the country decreased by 14% to about 3.4 million barrels per day (Mbbbl/d) from about 4.0 Mbbbl/d in 2019. The country's top three crude petroleum export destinations were, in decreasing order of quantity, China (which received 33%), India (26%), and Europe (22%) (International Monetary Fund, 2021, p. 21–22; 2022; Organization of the Petroleum Exporting Countries, 2022, p. 17–18, 46, 48, 66).

Exports of goods to the United States from Iraq were valued at \$3.1 billion in 2020. Crude petroleum accounted for about 99% of these exports. Other significant mineral-related

exports to the United States included petroleum products (other) valued at \$22 million, and jewelry, \$4 million. Imports from the United States were valued at \$770 million in 2020. Drilling and oilfield equipment accounted for about 4% of these imports, or about \$32 million. Other significant mineral-related imports from the United States included excavating machinery valued at \$28 million; petroleum products (other), \$7 million; and iron and steel products (other), \$4 million (U.S. Census Bureau, 2022a, b).

Government Policies and Programs

The mining sector in Iraq is regulated by the Ministry of Industry and Minerals (MIM) through law No. 38 of 2011. Investment in the country's mining sector is regulated under the Law for the Regulation of Mineral Investments No. 91 of 1988. The National Investment Commission, established under The Investment Law No. 13 of 2006 and its amendments, regulates investments and property rights. The Iraqi Geological Survey and Mining Company (Geosurv-Iraq) is responsible for carrying out geological surveys and mineral explorations, promoting mining projects in the private and public sectors, and conducting environmental impact studies. The hydrocarbon sector is regulated under Articles 111 and 112 of Iraq's Constitution (2005). Under Article 111, crude petroleum and natural gas are owned by the Government. Under Article 112, the Federal Government and Governorate governments are tasked with formulating policies to develop hydrocarbon resources and with undertaking the management of crude petroleum and natural gas production. Law No. 84 of 1985 establishes regulations for the exploration and operations for and the production, refining, and transportation of crude petroleum. The Ministry of Oil (MOO), which is responsible for implementing hydrocarbon policies, oversees the development and production of crude petroleum and natural gas. International petroleum companies operate under technical service contracts implemented by the MOO (Extractive Industries Transparency Initiative, 2021, p. 85, 92; Ministry of Industry and Minerals, 2021; Ministry of Oil, 2021).

The Kurdistan Regional Government (KRG) regulates petroleum activities by the KRG's Ministry of Natural Resources (MNR) and the Regional Council for Oil and Gas Affairs (RCOGA) through the Oil and Gas Law No. 22 of 2007 of the Kurdistan Region. In 2020, the Kurdistan Parliament passed the Oil and Gas Products Anti-Smuggling Law (law No. 3/2020). The law made it a crime to smuggle crude petroleum and its byproducts, embezzle and sell crude petroleum products that are assigned to the Government or nongovernmental authorities, and manipulate any license or official document for the purpose of smuggling (Amereller and Zamel, 2021; Extractive Industries Transparency Initiative, 2021, p. 92, 99).

Production

In 2020, the most significant decreases in mineral commodity production were for gasoline, which decreased by 49%; natural gas (marketable), by 36%; other refinery products, by 24%; kerosene (including jet fuel), by 22%; residual fuel oil, by 15%; crude petroleum (including condensate) and liquefied petroleum gas, by 14% each; and distillate fuel oil and sulfur, by 13% each. The most significant increases in mineral production were those for crushed limestone (for construction), by 17% (estimated), and salt, by 11% (estimated). Data on mineral production are provided in table 1.

Structure of the Mineral Industry

The MIM administered the activities of the hard-rock mineral sector through several state-owned companies, including the General Company for Phosphate, Iraqi Cement State Co., Mishraq Sulphur State Co., Northern Cement State Co., Southern Cement State Co., the State Company for Iron and Steel (SCIS), and the State Enterprise for Fertilizer and Petrochemical. The MOO managed the hydrocarbon sector through several state-owned petroleum companies. In 2020, state-owned upstream companies included Iraq Drilling Co., Midland Oil Co., Missan Oil Co., North Oil Co. (NOC), Oil Exploration Co., Oil Project Co., and South Oil Co (SOC). The KRG held production-sharing agreements with international petroleum companies; these agreements were administered through the MNR (table 2; Extractive Industries Transparency Initiative, 2021, p. 92).

Commodity Review

Metals

Iron and Steel.—In 2020, seven iron and steel companies in Iraq had a combined production capacity of about 3 million metric tons per year (Mt/yr) of steel products. Leading companies included Mass Iraq Iron and Steel Industry Co. (a subsidiary of Mass Group Holding Ltd. of Jordan), which operated the 1.25-Mt/yr Bazian plant in As Sulaymaniyah Governorate; Al Anmaa Co. for Constructional Material Production (a subsidiary of Al Tanmiya Co. for Steel Industries), which operated a 735,000-metric-ton-per-year (t/yr) plant at Khawr az Zubayr in Al Basrah Governorate; FF Steel Co. of Turkey, which operated a 580,000-t/yr plant at Erbil in Erbil Governorate (Kurdistan Region); and SCIS, which operated a 500,000-t/yr plant at Khawr az Zubayr, Al Basrah Governorate. In March 2020, Dhi Qar Governorate's Investment Commission announced plans for the construction of a 150,000-t/yr steel plant, which was expected to take 4 years to complete at a cost of \$17 million (table 2; Commodity Inside, 2019; Zawya, 2020).

Industrial Minerals

Cement.—Iraq was estimated to have produced about 28 million metric tons (Mt) of cement in 2020, an increase of 3.7% compared with 27 Mt (revised) in 2019. State-owned cement companies, which included Iraqi Cement State Co., Northern Cement State Co., and Southern Cement State Co., had a combined cement production capacity of between 16 and

17 Mt/yr. Other leading cement producers were LafargeHolcim Group (majority owner of Bazian Cement Co., Karbala Cement Manufacturing Ltd., and United Cement Co.) (in separate partnerships with Faruk Group Holding and Merchant Bridge Co.), which had the capacity to produce 7.9 Mt/yr of cement, and Mass Group Holding Ltd., which had the capacity to produce 6 Mt/yr of cement. During the year, Etihad Al Saqar Co. continued to develop a 2.2-Mt/yr cement plant in Erbil. Etihad Al Saqar entered into a \$260 million contract with China Machinery Engineering Corp. in 2019 for the construction of a plant; the construction was expected to take 30 months (table 2; Global Cement, 2019; Cemnet, 2020; International Cement Review, 2020; BNC, 2021).

Nitrogen.—Royal Dutch Shell plc (Shell) of the Netherlands continued to plan for the construction of the \$8 billion Nebras Petrochemicals Complex in Al Basrah Governorate. Shell originally signed a memorandum of understanding with the Government to develop the complex in 2012; however, the project had faced many delays. In August, Government officials announced a renewed interest in moving the project forward, hoping to finalize legal and contractual terms by the end of the year. The complex would have the capacity to produce 1.8 Mt/yr of downstream petrochemical products, including nitrogen fertilizers. If approved, construction of the project was expected to take about 5 years and to create about 50,000 jobs. Shell held a 49% share in the project; the Government held the remaining shares (Ministry of Industry and Minerals, 2015; Saadi, 2020).

Mineral Fuels

Natural Gas.—In January 2020, the Government approved contracts that had been awarded in 2018 as part of a fifth bidding round for natural gas exploration in Diyala Governorate, northeast of Baghdad. The exploration contracts were in natural gas fields that contained an estimated 21 million cubic meters of natural gas. Companies that were awarded contracts included Crescent Petroleum Co. of the United Arab Emirates, Geo-Jade Petroleum Corp. of China, and United Energy Group Ltd. of China (Awadalla, 2020).

In December 2020, Dana Gas PJSC of the United Arab Emirates announced that its subsidiary, Pearl Petroleum Co. Ltd., had restarted its natural gas expansion project in the Khor Mor Field in the Kurdistan Region of Iraq; the project had been suspended earlier in the year owing to COVID-19 related restrictions. Pearl Petroleum was a five-company consortium composed of Crescent Petroleum and Dana Gas (35% each), MOL Hungarian Oil and Gas Co. p.l.c. of Hungary (10%), OMV Aktiengesellschaft of Austria (10%), and RWE Supply and Trading GmbH (RWEST) of Germany (10%). The expansion project would increase the Khor Mor Field's capacity from 4.0 billion cubic meters per year to 6.7 billion cubic meters per year by 2023 and to 9.3 billion cubic meters by 2025 (Dana Gas PJSC, 2020; Watkins, 2020; Pearl Petroleum Co. Ltd., 2021).

Petroleum.—After achieving a 5-year production high of 1.74 Gbbl of crude petroleum in 2019, crude petroleum production in Iraq decreased to a 5-year production low of 1.51 Gbbl of crude petroleum in 2020. During the year, the Government held negotiations with Chevron Corp. of the United States to carry out exploration work in the

Nassiriya Field in Dhi Qar Governorate in southern Iraq, which was estimated to contain reserves of about 4.4 Gbbl of crude petroleum. Chevron already had a presence in the Kurdistan Region of Iraq, including interests in the Qara Dagh Block and the Sarta Block (table 1; Andersen, 2020).

MINERAL INDUSTRY HIGHLIGHTS IN 2021

In 2021, the real GDP of Iraq increased by 5.9%; the country's nominal GDP was about \$208 billion. The hydrocarbon sector was estimated to have accounted for about 37% of the total GDP and for 84% of Government revenue in 2021. Exports of crude petroleum increased in value by 81% to \$80 billion and accounted for 92% of the country's total export value of nearly \$86 billion. The increase was attributed to the recovery in global demand for crude petroleum and global crude petroleum prices; the annual average spot price of Basrah Light crude petroleum from Iraq increased by 68% to \$69.86 per barrel in 2021. The quantity of the country's crude petroleum exports remained at 3.4 Mbbbl/d. The country's top three crude petroleum export destinations were, in decreasing order of quantity, India (32%), China (28%), and Europe (25%) (International Monetary Fund, 2021, p. 21–22; 2022; Organization of the Petroleum Exporting Countries, 2022, p. 17–18, 46, 48, 66).

Exports of goods to the United States from Iraq were valued at \$3.8 billion in 2021. Crude petroleum accounted for \$3.7 billion of these exports. Other significant mineral-related exports to the United States included fuel oil valued at \$95 million, and jewelry, \$4 million. Imports from the United States were valued at \$806 million in 2021. Drilling and oilfield equipment accounted for about 4% of these imports, which were valued at about \$30 million. Other significant mineral-related imports from the United States included excavating machinery valued at \$16 million; petroleum products (other), \$14 million; and iron and steel products (other), \$4 million (U.S. Census Bureau, 2022a, b).

In 2021, the most significant mineral commodity production increases were for other refinery products, by 71%; natural gas (marketable), by 30%; residual fuel oil, by 20%; and distillate fuel oil, by 15%. Production of gasoline decreased by 9%.

Government officials inaugurated a new steel facility at Erbil in the Kurdistan Region of Iraq in May 2021. The facility, which was owned by Med Steel Co., cost \$100 million to construct and had a production capacity of 350,000 Mt/yr of steel products. Med Steel noted that the facility produced high-grade metal and steel products and employed 1,000 workers. In March 2021, Lucky Cement completed construction and began operations at its new 1.2-Mt/yr cement plant in Samawah. The facility was a joint venture with the Al-Shamookh Group (Cemnet, 2021; Iraq-Business News, 2021).

In September 2021, the MOO announced that it had signed a \$27 billion deal with TotalEnergies SE of France to develop several energy projects in Basrah. The projects included installations to enhance oil recovery and to recover flared natural gas from three oilfields, a natural-gas-processing plant, a new natural gas gathering and treatment facility, a solar power plant, and a large-scale seawater treatment unit. In June, a consortium of the World Bank's International Finance Corp. and eight international banks announced approval of a \$360 million

loan to Basrah Gas Co. to fund a project to expand the Basrah Natural Gas Liquids extraction plant to reduce natural gas flaring. The project was expected to increase the plant's capacity by 40% to 14.6 billion cubic meters per year from 10.4 billion cubic meters per year. In April, the MOO signed a 25-year agreement with China Petroleum and Chemical Corp. (Sinopec) to develop the Mansuriya natural gas field, which is located northeast of Baghdad in Diyala Governorate; Sinopec's share was 49%. The MOO estimated resources in the Mansuriya Field to be about 133 billion cubic meters of natural gas (Alrawi, 2021; Watkins, 2021; Wright, 2021).

Abu Dhabi Future Energy Co. (Masdar) of the United Arab Emirates announced plans to build five solar powerplants in Iraq in October 2021. Masdar, which was a subsidiary of Mubadala Investment Co. of the United Arab Emirates, signed the agreement with the Ministry of Electricity and National Investment Commission of Iraq. The five plants would have a combined capacity of 1 gigawatt (GW); the largest, a 450-megawatt (MW) plant, was set to be built in Dhi Qar Governorate. The other plants would include a 250-MW plant and a 100-MW plant in Ramadi, a 100-MW plant in Amarah, and a 100-MW plant in Mosul. An additional 1 GW of solar power was also included in the agreement as part of the second phase of construction, but further details were not provided. The Government of Iraq expressed interest in increasing the solar power deal with Masdar by 10 to 12 GW, which would go towards working to achieve a goal of generating 20% to 25% of electricity from renewables by 2030 (Arab News, 2021; Derhally, 2021).

Outlook

The economy of Iraq is projected to grow by 9.5% in 2022 and 5.7% in 2023. Iraq is likely to remain an important world supplier of crude petroleum. Government revenues are expected to remain dependent on exports of crude petroleum and therefore dependent on the global crude petroleum demand and international crude petroleum commodity prices. Deals by the Government with TotalEnergies and Sinopec are expected to increase crude petroleum and natural gas production while reducing natural gas flaring (International Monetary Fund, 2022).

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TABLE 1
IRAQ: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity ²	2017	2018	2019	2020	2021	
INDUSTRIAL MINERALS						
Cement, hydraulic ^c	14,000 ^r	24,000 ^r	27,000 ^r	28,000	29,000	
Gypsum, synthetic, industrial byproduct ^c	1,000	1,000	1,000	1,050	1,100	
Nitrogen, N content: ^c						
Ammonia	100	90	95 ^r	90	90	
Urea	80	70	70	70	70	
Salt ^c	240	270	270	300	300	
Sand and gravel, industrial, silica	50	50 ^e	50 ^e	52 ^e	52 ^e	
Stone, sand, and gravel, construction:						
Sand and gravel ^c	25,000	25,000	25,000	27,000	27,000	
Stone, crushed, limestone: ^c						
For cement	10,000	11,000	12,000	13,000	13,500	
For construction	500	500	600	700	720	
Sulfur, native, S content ^c	40	40	40	35	35	
MINERAL FUELS AND RELATED MATERIALS						
Natural gas, marketable	million cubic meters	10,650	11,130	11,544	7,374	9,586
Petroleum:						
Crude, including condensate	thousand 42-gallon barrels	1,656,332	1,690,632	1,744,509	1,505,605	1,497,230
Refinery:						
Distillate fuel oil	do.	33,215	39,055	43,070	37,332	43,070
Gasoline	do.	22,995	30,660	34,675	17,568	16,060
Kerosene, including jet fuel	do.	15,695	17,155	17,885	13,908	14,600
Liquefied petroleum gas	do.	2,008	2,920 ^r	2,409 ^r	2,745	3,000 ^e
Residual fuel oil	do.	107,310	114,610	120,085	102,114	122,275
Other	do.	15,148 ^r	57,670 ^r	54,531 ^r	41,541	71,095
Total	do.	196,000	262,000 ^r	273,000 ^r	215,000	270,000

^cEstimated. ^rRevised. do. Ditto.

¹Table includes data available through August 15, 2022. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

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

TABLE 2
IRAQ: 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	Annual capacity
Cement:			
Portland	Attock Cement Pakistan Ltd.	Al Basrah plant, Al Basrah Governorate	900.
Do.	Bazian Cement Co. (LafargeHolcim Group, 70%, and Faruk Group Holding, 30%)	Bazian plant at Sarchinar, near Hayasi, 40 kilometers west of Sulaymaniyah, As Sulaymaniyah Governorate (Kurdistan Region)	2,900.
Do.	Iraqi Cement State Co. (Government, 100%)	Four plants: Al Fallujah plant Al Qaim plant Kirkuk plant Kubaisa plant	5,200.
Do.	KAR Group LLC	Qarachough plant near Erbil, Erbil Governorate (Kurdistan Region)	1,900.
Do.	Karbala Cement Manufacturing Ltd. (LafargeHolcim Group, 51%, and Merchant Bridge Co., 49%)	Karbala plant, Karbala Governorate	2,700.
Do.	Lucky Cement Co. (Al Shawi family, 50%, and Lucky Cement Ltd., 50%)	Al Basrah plant, Al Basrah Governorate	1,740.
Do.	do.	Cement plant at Samawah, Al Muthanna Governorate	1,200.
Do.	Mass Group Holding Ltd. (100%)	Bazian plant, 40 kilometers west of Sulaymaniyah, As Sulaymaniyah Governorate (Kurdistan Region)	6,000.
Do.	Northern Cement State Co. (Government, 100%)	Six plants in Mosal: Badoosh I, II, and III plants Hammam Al Aleel I and II plants Sinjar plant	3,740.
Do.	Saman Cement Co.	Al Muthanna cement plant, Al Mushanna Governorate	2,000.
Do.	Southern Cement State Co. (Government, 100%)	Five plants: Al Basrah plant An Najaf Al plant As Samawah plant Kufa plant Muthena Nora plant	7,500.
Do.	United Cement Co. (LafargeHolcim Group, 60%, and Faruk Group Holding, 40%)	Tasluja plant, near Sulaymaniyah, As Sulaymaniyah Governorate (Kurdistan Region)	2,300.
White	Iraqi Cement State Co. (Government, 100%)	Fallujah white cement plant, Fallujah, Al Anbar Governorate	300.
Gypsum	Five subsidiaries of Al Bunnia Group: Al Ahlia Gypsum Industrial Co. Ltd. Al Ameen Gypsum Production Co. Ltd. Al Ma'moon Building Materials Co. Ltd. Al Rashid Gypsum Co. Ltd. Al Shemal Gypsum Industries Co. Ltd.	Five plants in Baghdad, Bagdad Governorate	1,369.
Iron and steel, steel products	Al Anmaa Co. for Constructional Material Production (Al Tanmiya Co. for Steel Industries, 100%)	Plant at Khawr az Zubayr, Al Basrah Governorate	735.
Do.	Darin Steel Co.	Plant at Erbil, Erbil Governorate (Kurdistan Region)	120.
Do.	Erbil Steel Co.	do.	200.

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Iron and steel, steel products—Continued		Mass Iraq Iron and Steel Industry Co. (Mass Group Holding Ltd., 100%)	Bazian plant, As Sulaymaniyah Governorate (Kurdistan Region)	1,250.
Do.		FF Steel Co. (100%)	do.	580.
Do.		Med Steel Co.	Plant at Erbil, Erbil Governorate (Kurdistan Region)	350.
Do.		State Company for Iron and Steel (SCIS) (Government, 100%)	Plant at Khawr az Zubayr, Al Basrah Governorate	500.
Natural gas	million cubic meters	Basra Oil Co. (BOC) (Government, 100%)	Majnoon field, Al Basrah Governorate	1,394.
Do.	do.	BP p.l.c., 38%; China National Petroleum Corp. (CNPC), 37%; South Oil Co. (SOC), 25%	Rumaila field, Al Basrah Governorate	11,053.
Do.	do.	Eni S.p.A., 32.81%; Maysan Oil Co., 25%; South Oil Co. (SOC), 23.44%; Korean Gas Corp. (Kogas), 18.75%	Zubair field, Al Basrah Governorate	3,440.
Do.	do.	Exxon Mobil Corp., 25%; Oil Exploration Co., 25%; PetroChina Co. Ltd., 25%; Itochu Corp., 15%; Pertamina Corp., 10%	West Qurna 1 field, Al Basrah Governorate	2,500.
Do.	do.	Lukoil Oil Co., 75%, and South Oil Co. (SOC) 25%	West Qurna 2 field, Al Basrah Governorate	1,839.
Do.	do.	Pearl Petroleum Co. Ltd. (PPCL) [Crescent Petroleum, 35%; Dana Gas PJSC, 35%; MOL Hungarian Oil and Gas Co. p.l.c. (MOL), 10%; OMV Aktiengesellschaft, 10%; RWE Supply and Trading GmbH, 10%]	Chemchamal and Khor Mor fields, Kurdistan Region	4,000.
Do.	do.	Türkiye Petrolleri Anonim Ortaklığı (TPAO), 30%; Kuwait Energy, 25%; Maysan Oil Co. (MOC), 25%; Egyptian General Petroleum Corp. (EGPC), 20%	Siba field, Al Basrah Governorate	1,033.
Nitrogen		1st Global Company for Chemical Fertilizers Production Ltd.	Plant at Baiji, Salah ad Din Governorate	365 ammonia; 525 urea.
Do.		State Enterprise for Fertilizer and Petrochemical (Government, 100%)	Plant at Abu Al-khasib, Al Basrah Governorate	230 ammonia; 350 urea.
Do.		State Company for Fertilizers Northern Area (Government, 100%)	Plant at Baiji, Salah ad Din Governorate	231 ammonia; 202 urea.
Petroleum:				
Crude	thousand 42-gallon barrels per day	Basra Oil Co. (BOC) (Government, 100%)	Majnoon field, Al Basrah Governorate	235.
Do.	do.	BP p.l.c., 38%; China National Petroleum Corp. (CNPC), 37%; South Oil Co. (SOC), 25%	Rumaila field, Al Basrah Governorate	1,467.
Do.	do.	China National Petroleum Corp. (CNPC), 75%, and North Oil Co. (NOC), 25%	Al-Ahdab field, Wasit Governorate	140.
Do.	do.	China National Petroleum Corp. (CNPC), 37.5%; South Oil Co. (SOC), 25%; Petronas Carigali International Sdn Bhd, 18.75%; TotalEnergies SE, 18.75%	Halfaya field, Maysan Governorate	70.
Do.	do.	CNOOC Ltd., 63.75%; Iraq Drilling Co., 25%; Türkiye Petrolleri Anonim Ortaklığı (TPAO), 11.25%	Missan field, Maysan Governorate	450.
Do.	do.	DNO International ASA, 75%, and Genel Enerji A.S., 25%	Tawke field, Iraqi Kurdistan Region	140.

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Petroleum:—Continued				
Crude— Continued	thousand 42-gallon barrels per day	Eni S.p.A., 32.81%; Maysan Oil Co., 25%; South Oil Co. (SOC), 23.44%; Korean Gas Corp. (Kogas), 18.75%	Zubair field, Al Basrah Governorate	625.
Do.	do.	Exxon Mobil Corp., 25%; Oil Exploration Co., 25%; PetroChina Co. Ltd., 25%; Itochu Corp., 15%; Pertamina Corp., 10%	West Qurna 1 field, Al Basrah Governorate	500.
Do.	do.	Gazprom OAO, 30%; Oil Exploration Co., 25%; Korean Gas Corp. (Kogas), 22.5%; Petronas Carigali International Sdn Bhd, 15%; Türkiye Petrolleri Anonim Ortaklığı (TPAO), 7.5%	Badra field, Wasit Governorate	85.
Do.	do.	Lukoil Oil Co., 75%, and North Oil Co. (SOC), 25%	West Qurna 2 field, Al Basrah Governorate	400.
Do.	do.	North Oil Co. (NOC) (Government, 100%)	Kirkuk field, Kirkuk Governorate	280.
Do.	do.	Petronas Carigali International Sdn Bhd, 45%; Japex Garraf Ltd., 30%; North Oil Co. (NOC), 25%	Garraff field, Dhi Qar Governorate	35.
Do.	do.	Sociedade Nacional de Petróleos de Angola (Sonagol), 75%, and South Oil Co. (NOC), 25%	Qiayarah and Najmah fields, Ninawa Governorate	55.
Do.	do.	Taq Taq Operating Co. Ltd. (Genel Enerji A.S., 55%, and Addax Petroleum Corp., 45%)	Taq Taq field, 60 kilometers north of Kirkuk, Kirkuk Governorate (Kurdistan Region)	20.
Refinery products	do.	KAR Group LLC	Kalak refinery, Erbil, Erbil Governorate (Kurdistan Region)	100.
Do.	do.	Midland Refineries Co. (Government, 100%)	Daura refinery, Baghdad Governorate	210.
Do.	do.	do.	Najaf refinery, An Najaf Governorate	30.
Do.	do.	do.	Samawah refinery, Al Muthanna Governorate	30.
Do.	do.	do.	Diwaniya refinery, Al Qadisiyyah Governorate	20.
Do.	do.	North Refineries Co. (Government, 100%)	Baiji refinery, Salah ad Din Governorate	310.
Do.	do.	do.	Kirkuk refinery, Kirkuk Governorate	53.
Do.	do.	do.	Sininya refinery, Salah ad Din Governorate	30.
Do.	do.	do.	Haditha refinery, Al Anbar Governorate	16.
Do.	do.	do.	Qaiyarah refinery, Ninawa Governorate	16.
Do.	do.	do.	Kasak refinery, Ninawa Governorate	10.
Do.	do.	Qaiwan Group	Bazian refinery, As Sulaymaniyah Governorate (Kurdistan Region)	34.
Do.	do.	South Refineries Co. (Government, 100%)	Basrah refinery, Al Basrah Governorate	280.
Do.	do.	do.	Nasiriyah refinery, Dhi Qar Governorate	30.
Do.	do.	do.	Missan refinery, Maysan Governorate	30.
Phosphate fertilizer		General Company for Phosphate (Government, 100%)	Plant at Al-Qaim, Al Anbar Governorate ^{1,2}	600 TSP; 280 MAP; 650 NPK.
Phosphate rock		do.	Mines at Akashat, Al Anbar Governorate	3,400.
Salt		Artisanal	Salt pans in Samawah and Jazira, Al Muthanna Governorate	300.
Sulfur		Mishraq Sulphur State Co. (MSSC) (Government, 100%)	Mine at Qaiyarah, Ninawa Governorate ²	820.

Do., do. Ditto.

¹The fertilizer production unit U400 produces triple superphosphate (TSP), monoammonium phosphate (MAP), and compound fertilizer consisting of nitrogen, phosphorus, and potassium (NPK).

²No production has been reported since 2015.