



2015 Minerals Yearbook

HUNGARY [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF HUNGARY

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The mineral production of Hungary, an east central European country, consisted largely of industrial minerals; the country's metal output remained substantially below past levels. The mining of crude construction materials and other industrial minerals, such as clays, diatomite, lime, peat, perlite, and quartzite, was mainly for domestic consumption. In 2015, Hungary was estimated to be the fifth-ranked producer of perlite in the world and to have accounted for about 3% of global production. Among the mining of metals, only manganese ore extraction remained notable in the country. Although the country had once been an important producer of bauxite, copper, and uranium, bauxite mining was very minor and continued to decrease, and copper and uranium were no longer being mined. Coal production was also much lower than in the past, and brown coal output continued to decrease (table 1; Katona and others, 2008, p. 139; Bennett, 2016, p. 123).

Hungary's resources of bauxite were 123.9 million metric tons (Mt), and of manganese ore, 79 Mt; the reserves of these mineral commodities totaled 79.8 Mt and 52.1 Mt, respectively. Resources of copper ore were 781.2 Mt; lead and zinc ore, 90.8 Mt; iron ore, 43.2 Mt; and uranium ore, 26.8 Mt. Coal reserves consisted of 5.7 billion metric tons (Gt) of lignite, 3.2 Gt of brown coal, and 1.6 Gt of bituminous coal (Hungarian Office for Mining and Geology, 2015).

Minerals in the National Economy

Hungary's real gross domestic product (GDP) increased by 2.9% in 2015 compared with a 3.7% rate of growth in 2014. The recent GDP growth was owing in part to capacity upgrades in the automotive industry. The nominal GDP was \$121.7 billion in 2015. The deceleration in the rate of growth was mainly owing to decreased receipt of European Union (EU) funds for investment in the rebuilding of energy and other infrastructure (European Commission, 2016b, p. 98; International Monetary Fund, 2016, p. 4; U.S. Commercial Service, 2016; World Bank, The, 2016).

In 2015, mining and quarrying remained a minor component of Hungary's industrial sector, making up 0.2% of the GDP, which was unchanged from that of 2014. Manufacturing, of which base metals, fabricated metal products, and nonmetallic mineral products manufacturing were important components, accounted for 24.6% of the GDP in 2015 compared with 23.3% in 2014. Mining and quarrying output decreased by 13.4% in 2015, whereas total industrial production, in terms of tonnage, increased by 7.4%. The production of base metals and fabricated metal products, except machinery and equipment, increased by 3.4%, and that of rubber and plastic products and other nonmetallic mineral products, by 15.1%. The production of coke and refined petroleum products decreased by 2.9% (Hungarian Central Statistical Office, 2016d, f, g).

Exports of mining and quarrying products made up a very small portion of the country's total exports. They were valued at

\$43.8 million¹ and accounted for about 0.05% of the total value of all exports of \$96.4 billion in 2015. In terms of tonnage, mining and quarrying exports decreased by 22.6% in 2015 compared with those of 2014. Exports of nonmetallic mineral products, including rubber and plastic products, made up 5.4% of total exports, by value, and increased in amount by 18.4% in 2015; base metals and fabricated metal products, except machinery and equipment, made up 4.5% of total exports and increased in amount by 2.1%; and coke and refined petroleum products made up 1.3% of total exports and decreased in amount by 27.4%. The value of exports of metal products increased by 8.4%; nonmetallic mineral products, by 5.8%; and nonferrous metals, by 0.5%. Exports of petroleum and petroleum products decreased in value by 37.1%; natural gas, by 39.9%; coal, coke, and briquets, by 22.1%; and iron and steel, by 13.8% (Hungarian Central Statistical Office, 2016a, b, e).

Production

The production of mineral commodities showed significant changes in Hungary in 2015, with production of some decreasing by more than 70%. Among metals, the production of bauxite decreased by 43% to a very low 8,000 t, and alumina production ceased altogether. The production of pig iron increased by 56%; crude (raw) steel, by 45%; and manganese, by 12%. Among industrial minerals, the production of quartzite decreased by 86%; common sand, by 39%; gravel, by 17%; alginite, by 11%; and perlite, by 4%. The production of kaolin increased more than fourfold and that of diatomite almost doubled; production of peat increased by 73%; marl, by 33%; sandstone, by 17%; glass (silica) sand, by 14%; foundry sand, by 11%; dolomite, by 10%; and bentonite and zeolites, by 9% each. Among mineral fuels and related materials, brown coal output decreased by 75% and diesel and heating oil, by 11%. Motor gasoline output increased by 9%; fuel oil, by 5%; liquefied petroleum gas (LPG), by 4%; and crude petroleum, by 3% (table 1).

Structure of the Mineral Industry

All major mineral producers were privately owned, with the exception of bauxite producer Magyar Aluminium Ltd. (MAL) and hydrocarbons producer Hungarian Oil and Gas Co. plc (MOL). MAL had been nationalized in 2013 following its declaration of bankruptcy. The Government held a 25.2% ownership interest in MOL. Foreign ownership was concentrated in the cement and iron and steel sectors. ISD Dunafer Co. Ltd., which was the leading iron and steel producer, was owned by the Industrial Union of Donbass Corp. (ISD) of Ukraine (table 2; ISD Dunafer Co. Ltd., 2013;

¹Where necessary, values have been converted from Hungarian forints (HUF) to U.S. dollars (US\$) at an annual average exchange rate of HUF290.64=US\$1.00 for 2015.

Keszthelyi, 2014a; International Cement Review, 2015, p. 165; MOL Group, 2016b).

Commodity Review

Metals

Aluminum, Bauxite, and Alumina.—MAL, which had been the sole bauxite and alumina producer in the country, was in the process of liquidation. The company ended alumina production in 2014, and its bauxite production had decreased substantially since the closure of the Halimba bauxite mine in 2013. In April 2014, a company called Nemzeti-MAL-A Aluminiumtermelő had been established by the Government-owned Hungarian National Asset Management Co. (MNV) to take over MAL's assets. In October 2014, IC Profil, a local company, acquired MAL's alumina assets after the MNV initiated a sale in July 2014. Information on when or whether IC Profil planned to restart alumina production at the Ajka Timfoldgyar plant was not available (Hungary A.M., 2014; Keszthelyi, 2014b; Dunai, 2016).

Iron and Steel.—ISD Dunafer, one of the largest industrial producers in Hungary, completed the upgrading of its hot-rolling and cold-rolling mills and was in the process of renovating its blast furnace in Dunaújváros in 2015. The company sought to increase its production of higher value-added products at both of the hot- and cold-rolling plants; specifically, the manufacturing of galvanized steel and other coated products. The new blast furnace would allow the company to fulfill smaller-size orders and increase the overall quality of the steel products. ISD Dunafer aimed to increase its crude steel production capacity to 2 million metric tons per year (Mt/yr) from about 1.7 Mt/yr. The company exported crude steel and pig iron mainly to, in descending order of export tonnage, Germany, Poland, Austria, the Czech Republic, Slovakia, and Italy (Keszthelyi, 2014a; Daily News Hungary, 2016).

Industrial Minerals

Cement.—In 2015, the production of cement increased by an estimated 15% owing to an increase of 6.2% in road and railway construction and an increase of 5.8% in residential construction. Lafarge Cement Magyarország Kft. operated the Királyegyháza integrated cement plant near Pécs. LafargeHolcim Ltd. of Switzerland held a 70% interest in the joint venture together with STRABAG SE of Austria, which had a 30% interest. STRABAG reported that production in Hungary and Austria accounted for 22% of the cement it used for its construction projects around the world in 2015. More than one-half of STRABAG's concrete output of 3.5 million cubic meters in 2015 was produced in Hungary, Austria, and the Czech Republic (International Cement Review, 2015, p. 165; STRABAG SE, 2016, p. 26, 86).

In July 2015, CRH plc. of Ireland acquired Holcim Ltd.'s cement assets in Hungary. Although Holcim had not produced cement in Hungary since late 2012, it still owned the Labatlan cement plant and 16 batching plants. These were part of the assets Lafarge S.A. of France and Holcim Ltd. were required to divest in Europe and North America in order to meet regulatory

conditions for the merger, which created the world's largest cement company. CRH restarted cement production in Labatlan in 2015. In November 2015, the Rohrdolfer Group of Germany acquired 5 aggregate quarries and 34 ready-mix plants in Hungary from CEMEX S.A.B. de C.V. of Mexico. The quarries sold 1.36 Mt of aggregates and the plants sold 460,000 cubic meters of ready-mix concrete in 2014 (CEMEX S.A.B. de C.V., 2015; International Cement Review, 2015, p. 165; Lafarge S.A., 2015; CRH plc., 2016, p. 45, 203).

Mineral Fuels and Related Materials

In 2014, domestic energy production consisted of nuclear energy (40%), renewable energy sources (20.3%), coal (15.7%), natural gas (14.2%), and crude petroleum and petroleum products (8.8%). Natural gas accounted for 30.7% of total energy consumption; crude petroleum and petroleum products, 27.9%; nuclear energy, 17.8%; coal, 11.2%; and renewable energy sources, 8.4%. In 2015, imports of natural gas and petroleum supplied about 55.8% of the primary energy supply. In July 2015, a new natural gas pipeline with Slovakia began operations, linking Hungary with the Western European gas network (European Bank for Reconstruction and Development, 2015, p. 2; European Commission, 2016a; Hungarian Central Statistical Office, 2016c).

Coal.—Brown (subbituminous) coal production, which was the predominant segment of Hungary's coal sector until the early 1990s, continued to decrease in 2015, whereas lignite open pit production slightly increased. Bituminous coal production, which had ceased in 2012 and 2013, showed an increase in 2015 compared with its level in 2014, but remained very low. Hungary's lignite output was about 9.1 Mt in 2015, which was a slight increase from the 8.9 Mt produced in 2014. Brown coal output was only 162,000 metric tons (t) in 2015 compared with its peak level of 22.4 Mt in 1964. The extraction of brown coal had decreased substantially since the closure of the last significant brown coal mine, Markushegy, in 2014. Two opencast mines, Bukkabrany and Visonta, accounted for almost all Hungary's coal production. The Bukkabrany Mine supplied the 950-megawatt-capacity Matrai Erömu powerplant, which was the country's largest coal-fired powerplant. There were a total of 72 coal mining sites in the country, of which 30 were on care-and-maintenance status in 2015 (table 1; Euracoal, 2013, p. 37; 2015, p. 7; 2016, p. 15; Horváth, 2015, p. 5, 15; Hungarian Office for Mining and Geology, 2015).

Natural Gas, Petroleum, and Petroleum Products.—MOL, which was the leading hydrocarbons and refined petroleum products producer in Hungary, averted a projected decline in hydrocarbon production in 2015. The company produced 11,400 barrels of oil equivalent per day (BOE/d) of crude petroleum and condensate in 2015 compared with 10,900 BOE/d in 2014, which was an increase of 5.1%. MOL produced 25,700 BOE/d of natural gas compared with 26,000 BOE/d in 2014, which was a decrease of 0.9%. MOL's new butadiene plant began production in 2015 (MOL Group, 2016a, p. 6, 44).

In November 2015, MOL increased its exploration acreage in Hungary to 4,530 square kilometers (km²) after acquiring the 584-km² Dany license in eastern Hungary and the 391-km² Battonya-Pusztafoldvar-Eszak license in southeastern Hungary

through the third Hungarian licensing round. A total of 17 bids were made by multiple companies for 8 of the 9 hydrocarbon blocks (including coal) offered in April 2015. Aside from two licenses awarded to MOL, the Government awarded 4 blocks (the Berettyoujfalu, the Mogyorod, the Nagykata, and the Ocsa Blocks) to O&GD Central Kft (OGD), a portfolio company of private equity investor Warburg Pincus; 1 block (Puspokladany) to Panbridge Hungary Zrt., which was a joint venture of Bankers Petroleum Ltd. of Canada (85% interest) and TDE Services (15% interest); and 1 block (Lakocsa) to Hungarian Horizon Energy Kft (HHE). The Sellye (oil and gas) and Dubicsany (coal) blocks were not awarded. The Puspokladany Block covered 878 km² containing the abandoned Biharnagybajom (BNB) oilfield. Bankers Petroleum planned to acquire three-dimensional seismic data on the area in early 2016 (Bankers Petroleum Ltd., 2015; Conybeare, 2015; MOL Group, 2016a, p. 40).

TXM Exploration and Production LLC, which was a subsidiary of Falcon Oil & Gas Ltd. of Ireland, did not undertake any drilling in its licensed area, Mako Trough, in 2015. In January 2015, Falcon announced the expiration of the extension granted to its partner, Nafna Industrija Srbije (NIS) of Serbia, regarding its three-well drilling program in Hungary. NIS had drilled and tested two wells, both of which had been plugged and abandoned in 2014. In December 2015, the two companies signed a termination agreement for the oil services contract for the Mako Trough (Rigzone, 2015; Falcon Oil & Gas Ltd., 2016, p. 4, 11, 12).

Uranium.—Uranium was produced in Hungary through mine remediation in 2015. Since the closure of the Mecsek Mine near the city of Pecs in late 1997, uranium recovered as a byproduct of water treatment activities had amounted to between 1 and 6 metric tons per year. Nuclear fuel for the country's four nuclear reactors was provided by JSC TVEL of Russia. Hungary's uranium resources were limited to the Mecsek deposit, which had 17,900 t of inferred uranium resources and 13,400 t of undiscovered resources. In October 2014, Wildhorse Energy Ltd. of Australia, which held a license in the Mecsek area, terminated its Mecsek Hills project owing to lack of progress and high operational costs, and no further exploration was undertaken in 2015. In April 2015, the European Commission approved the extension of the Paks nuclear powerplant under the condition that uranium would be supplied exclusively by Rosatom State Nuclear Energy Corp. of Russia for no longer than 10 years (European Bank for Reconstruction and Development, 2015, p. 2; European Commission, 2016a; Organization of Economic Cooperation and Development Nuclear Energy Agency and the International Atomic Energy Agency, 2016, p. 59, 248, 249; World Nuclear Association, 2016).

Outlook

Hungary's production of bauxite and aluminum is likely to remain very low, and alumina production is not expected to resume in the near future owing to the bankruptcies of the leading producers. Crude steel and manufactures output may increase owing to ISD Dunaferr's ongoing steel-production-capacity expansion. The production of coal, particularly that

of lignite, will remain much lower than the levels of the past, although production may increase slightly if new mines are opened as planned by the Government. The production of cement and other construction materials is expected to decrease, given the expected decrease in public infrastructure spending and decreased investment funds from the new EU budget. Crude petroleum and natural gas output are expected to decrease unless new reserves are identified in the onshore blocks for which exploration licenses have been awarded in recent bidding rounds. Uranium production is likely to remain very limited with the suspension of exploration in Mecsek.

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TABLE 1
HUNGARY: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015
METALS					
Alumina, gross weight, calcined basis	165 ^e	110	81	61	--
Aluminum, unwrought, including secondary	185 ^e	234	62	47	40 ^e
Bauxite, gross weight	155	144	94 ^r	14 ^r	8
Gallium ^e kilograms	5,000	4,600	1,700	300	100
Iron and steel, metal:					
Pig iron	1,317	1,229	628	801	1,247
Steel:					
Crude	1,746	1,542	883	1,152	1,675
Semimanufactures	1,765	1,928	1,936	1,823	1,900 ^e
Manganese ore, run-of-mine:					
Gross weight	167	147	35 ^r	51 ^r	57
Mn content	15	13	9 ^r	13	15

See footnotes at end of table.

TABLE 1—Continued
HUNGARY: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ²	2011	2012	2013	2014	2015
INDUSTRIAL MINERALS					
Alginite metric tons	2,400	4,600	6,500	6,500	5,800
Ammonia	NA	NA	359	417	400 ^e
Cement, hydraulic	1,950	1,600 ^r	1,500 ^r	1,830 ^r	2,100 ^e
Clay:					
Bentonite, raw metric tons	27,800	1,100	9,900	12,500 ^r	13,600
Chamotte, refractory clay do.	5,200	300	800	500	500 ^e
Kaolin, beneficiated do.	-- ^r	-- ^r	90 ^r	500 ^r	2,700
Other, unspecified do.	4,300 ^e	2,800 ^e	2,100 ^e	2,200 ^e	2,200 ^e
Diatomite do.	3,100	2,900	1,000	1,300 ^r	2,500
Lime, calcined ^e	250	230	250	250	250
Paludal mud metric tons	NA	67,200	47,900	26,900 ^{r,e}	48,700 ^e
Peat, agricultural use	602	493	713	398 ^r	687
Perlite metric tons	81,300	83,100	74,500	78,600	75,100
Quartzite do.	500	300	1,200	1,400	200
Sand and gravel:					
Gravel	24,435	21,833	26,193	42,379 ^r	35,194
Sand:					
Common	8,959	8,731	10,620	13,042 ^r	7,986
Foundry	192	88	81	153 ^r	170
Glass (silica)	135 ^r	-- ^r	--	90 ^r	103
Stone:					
Dimension, unspecified	8,870	8,600	8,330	8,400 ^e	8,400 ^e
Dolomite	4,875	4,036	4,795	6,576	7,260
Limestone	6,067	5,853	6,042	6,690 ^r	6,934
Marl	55	60	3	3	4
Sandstone	18	12	25	41 ^r	48
Zeolites	33	37	34	47	51
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Bituminous metric tons	3,000 ^r	--	--	100 ^r	6,000
Brown	755	859	747	636 ^r	162
Lignite	8,800	8,438	8,834	8,918	9,095
Total	9,558 ^r	9,297	9,581	9,554 ^r	9,263
Coke, metallurgical ^e	820	870	850	860	860
Natural gas, marketable million cubic meters	2,667	2,286	2,065	1,946 ^r	1,887
Petroleum:					
Carbon black	3,000	--	--	--	--
Crude ³ thousand 42-gallon barrels	4,200	4,100	3,800	3,900 ^r	4,000
Natural gas liquids do.	287	309	272	244	250 ^e
Refinery:					
Liquefied petroleum gas do.	854	739	1,489	2,100	2,193
Naphtha do.	9,439	9,946	7,901	7,883	7,927
Motor gasoline do.	9,436	9,719	8,909	9,093	9,903
Diesel and heating oil do.	26,580	26,423	25,871	26,177	23,171
Kerosene do.	1,883	1,332	1,426	1,505	1,505
Fuel oil do.	1,037	560	580	463	484
Total do.	49,229	48,719	46,176	47,221	45,183
Uranium metric tons	1	1	3	2	4 ^e

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

¹Table includes data available through November 12, 2016.

²In addition to the commodities listed, talc, urea, and a variety of other industrial minerals and construction materials may have been produced, but available information was inadequate to make reliable estimates of output.

³Figures were converted to thousand 42-gallon barrels from production reported in thousand metric tons at a rate of 6.29 42-gallon barrels per metric ton.

TABLE 2
HUNGARY: STRUCTURE OF THE MINERAL INDUSTRY IN 2015

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity holders	Location of main facilities	Annual capacity
Alumina	IC Profil	Ajka Timfoldgyar plant, about 120 kilometers southwest of Budapest, near Lake Balaton	NA ¹
Aluminum	Alcoa-Köfém Kft (Alcoa Inc., 100%)	Szekesfehervar ingot plant.	NA
Bauxite	Magyar Aluminium Ltd. (MAL) (Government, 100%)	Bakony and Halimba Mines, ² 5 kilometers south of Ajka, northwestern Hungary	NA
Bentonite	Bentonit Hungaria Kft (S&B Industrial Minerals S.A., 100%)	Mines and plant at Egyhazaskeszto	NA
Cement	Duna-Drava Cement Kft. (HeidelbergCement AG, 50%, and Schwenk Zement KG, 50%)	Plants at Beremend, 30 kilometers south of Pecs, and Vac, 35 kilometers north of Budapest	2,800
Do.	CRH Magyarorszag Zrt. (CRH plc., 100%)	Plant at Labatlan	300
Do.	Lafarge Cement Magyarorszag Kft. (LafargeHolcim Ltd., 70%, and STRABAG SE, 30%)	NOSTRA plant at Kiralyegyhaza, southwestern Hungary	1,000
Clay	Agyag-Asvany Kft.	Two opencast mines at Felsopeteny	NA
Coal:			
Brown coal	Vertes Power Plant Ltd. (Magyar Villamos Muvek Zrt., 96.59%)	Markushegy Mine ³ at Oroszlany, 55 kilometers west of Budapest	1,400 ^c
Do.	NA	Bakonyoszlop Mine in Veszprem	NA
Do.	NA	Farkaslyuk Mine in Borsod-Abauj-Zemplen	NA
Lignite	Mátrai Erömu Zrt. (MÁTRA) (RWE AG, 50.9%; Magyar Villamos Muvek Zrt., 25.5%; EnBW AG, 21.7%)	Thorez opencast mine at Visonta, 80 kilometers northeast of Budapest	4,700 ^c
Do.	do.	Opencast mine at Bukkabrany, 130 kilometers northeast of Budapest	4,000 ^c
Do.	NA	Vasas opencast mine in Pecs	NA
Coke	ISD Kokszolo Ltd. {ISD Dunaferri Co. Ltd. [Industrial Union of Donbass Corp. (ISD)]}	Dunaujvaros, 60 kilometers south of Budapest	900
Iron, pig iron	ISD Dunaferri Co. Ltd. [Industrial Union of Donbass Corp. (ISD)]	do.	1,300
Manganese	Mangán Mining and Processing Ltd.	Urkut manganese ore mines, 120 kilometers southwest of Budapest	NA
Natural gas	Hungarian Oil and Gas Co. plc. (MOL) (Foreign investors, 25.2%; Government, 25.2%; CEZ MH B.V., 7.5%; OmanOil Ltd., 7.1%; others, 35%)	Oil and gas fields in southern and southwestern Hungary	NA
Perlite	Perlit 92 Kft	Palhaza, northeastern Hungary; opencast mine and processing plant	NA
Petroleum:			
Crude	42-gallon barrels per day Hungarian Oil and Gas Co. plc (MOL) (Foreign investors, 25.2%; Government, 25.2%; CEZ MH B.V., 7.5%; OmanOil Ltd., 7.1%; others, 35%)	Oil and gas fields in southern and southwestern Hungary	14,800 ^c
Refined	do.	Duna Refinery [Hungarian Oil and Gas Co. plc (MOL), 100%]	165,000
Do.		Tisza Refinery [Hungarian Oil and Gas Co. plc (MOL), 100%]	NA
Do.		Zala Refinery [Hungarian Oil and Gas Co. plc (MOL), 100%]	NA
Silica	Uveg-Asvany Banyaszati Ipari Kft.	Mine and plant at Fehevaresugo	NA
Steel, crude:			
Primary	ISD Dunaferri Co. Ltd. [Industrial Union of Donbass Corp. (ISD)]	Dunaujvaros, 60 kilometers south of Budapest	1,700
Secondary	OAM OZD Steelworks Ltd.	120 kilometers northeast of Budapest	360
Do.	Dam 2004 Acel-es Hengermu Kereskedemi es Szolgáltato Ltd.	Diosgyor, 145 kilometers northeast of Budapest	550

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

¹Stopped production in October 2014.

²Halimba Mine was closed in February 2013.

³Closed in December 2014.