



2014 Minerals Yearbook

HUNGARY

THE MINERAL INDUSTRY OF HUNGARY

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Hungary is a landlocked, largely lowland country in the southeastern part of Central Europe that borders the European Union (EU) member states of Austria, Croatia, Romania, Slovakia, and Slovenia, and Serbia and Ukraine, which are not EU states. The territory of Hungary lies in the central part of the Pannonian Basin, whose pre-Tertiary geologic structure is composed of coal-bearing formations, bauxite, and limestone. Although the country has about 80 different identified mineral deposits, only a limited amount of those mineral resources were extracted in 2014. Hungary historically was an important producer of bauxite, coal, copper, hydrocarbons, iron and steel, and uranium. The mineral industry's output and employment as well as its contribution to the national economy decreased substantially during the transition from a centrally planned to a free-market economy in the 1990s as many state-owned enterprises were either closed or downsized after being privatized. In 2014, bauxite mining ceased and copper and uranium mining remained nonexistent. Coal mining continued to decrease with the exception of lignite. Iron and steel production, however, reversed its recent decline. The mining of crude construction materials (including aggregates, crushed rock, dimension stone, gravel, and sand) and other industrial minerals (such as clays, diatomite, lime, peat, perlite, and quartzite) were sustained by the expansion of the construction sector (table 1; Haas, 2008, p. 34; 2015, p. 7; Katona and others, 2008, p. 139–142; Kiss, 2008, p. 157; Kocsis and Schweitzer, 2008, p. 9–12; György, 2011, p. 2; Mining Journal, 2014; Horváth, 2015, p. 3–5; Hungarian Central Statistical Office, 2015k; U.S. Department of State, 2015, p. 3).

In 2014, Hungary was estimated to be the fifth-ranked producer of perlite (mostly for use in construction) in the world and to have accounted for about 3% of global production. In terms of metallic minerals, alumina and aluminum were still being produced in the country, as was gallium as a byproduct of alumina refining, but at substantially lower levels than before owing to the recent decline of bauxite mining. Hungary accounted for less than 1% of the world's production of gallium, which was its share in previous years. Hungary continued to produce mineral fuels and related materials, but production continued to decrease and imports accounted for about 80% of the country's total energy consumption (Hungarian Central Statistical Office, 2015a; Bennett, 2016; Jaskula, 2016).

Minerals in the National Economy

Hungary's real gross domestic product (GDP) increased by 3.7% in 2014 compared with an increase of 1.1% in 2013 and almost reached the 2008 pre-economic crisis level. The nominal GDP was \$138.4 billion in 2014. Growth was mainly owing to increased domestic demand, which contributed 4.0%, while net exports (exports minus imports) subtracted 0.4% from it. The increase in both public and private investment was in large part owing to the increased use of EU funds and the

provision of subsidized loans by the Central Bank of Hungary to small- and medium-size enterprises; the increase in private consumption was primarily owing to increases in incomes resulting from decreases in utility prices mandated by the Government. All sectors of the economy, in particular industry (1.5%), contributed positively to economic growth (European Commission, 2015b, p. 98; Hungarian Central Statistical Office, 2015e, p. 2, 2015h; International Monetary Fund, 2015, p. 4).

The value of production by the mining and quarrying sector was HUF 99.4 billion (\$410 million)¹ and accounted for 0.3% of the GDP in 2014, which was about the same percentage of the GDP as in 2013. The value of production by the base metals and fabricated metal products manufacturing (except machinery and equipment) was HUF1,775 billion (\$7.3 billion) and accounted for 5.3% of the GDP, which was about the same as in 2013. The value of production by other nonmetallic mineral products manufacturing sector was HUF1,748 billion (\$7.2 billion), accounting for 5.2% of the GDP, which was about the same as in 2013. The value of output by the coke and petroleum refinery products manufacturing sector was HUF1,608 billion (about \$6.64 billion), accounting for 5.0% of the GDP in 2014 compared with 5.5% (revised) in 2013 (Hungarian Central Statistical Office, 2015h, i).

The value added to the GDP by the entire manufacturing sector accounted for 23.5% of the GDP in 2014 compared with 22.6% in 2013. The bulk of the industrial sector's added value had to do with assembling manufactured products for export. The value added to the GDP by the mining and quarrying sector was 0.2% in 2014, which was unchanged from 2013. The construction sector, whose value added was 4.4% in 2014, used at least some domestically produced construction materials (Hungarian Central Statistical Office, 2015g).

Industrial production increased by 7.7% by volume in 2014 after increasing by 1.1% in 2013. Mining and quarrying output decreased by 0.1% in 2014 compared with a decrease of 7.7% in the previous year. The production of base metals and fabricated metal products, except machinery and equipment, increased by 5.9% in 2014 compared with an increase of 0.7% in 2013; rubber and plastic products and other nonmetallic mineral products, by 5.0% (a decrease of 2.7% from 2013); and coke and refined petroleum products, by 1.0% (a decrease of 1.9% from 2013) (Hungarian Central Statistical Office, 2015j, k).

Government Policies and Programs

According to Sections 43 and 44 of the Act on Mining No. XLVIII, the Hungarian Office for Mining and Geology of the Ministry of National Development is the state entity that authorizes and regulates mineral exploration on open areas;

¹Where necessary, values have been converted from Hungarian forints (HUF) to U.S. dollars (US\$) at an average rate of HUF242.08=US\$1.00 for 2014 and HUF232.77=US\$1.00 for 2013. All values are nominal, at current prices, unless otherwise stated.

exploration and extraction of mineral reserves after the establishment of mining land; use of waste heaps; exploration, establishment, and use of geologic structures suitable for natural gas storage; and extraction and utilization of geothermal energy. The Office also prepares the Ministry's decisions on mineral reserve management and concession contracts. All mineral commodities and geothermal energy belong to the state as long as they remain in their natural place of occurrence, but they become the property of the extractor upon extraction and utilization (Katona and Fodor, 1998; United Nations Department of Social and Economic Affairs, Division for Sustainable Development, 2009; Hungarian Office for Mining and Geology, 2013).

The Act XL of 2008 on natural gas supply was amended in November 2014. The amendment allows a company to construct natural gas transmission lines on the basis of a transmission line construction permit; as such, a transmission system operator permit is not required for such activity. Thereby, the construction of a natural gas pipeline no longer falls under the scope of the 10-year network development plans, and a company would need only the approval of the Hungarian Energy Office and not that of any other bodies, such as the European Commission (EC). The Commission had ruled previously that all bilateral intergovernmental agreements on the South Stream natural gas pipeline projects between the Government of Russia and EU member states were in breach of the EU Gas Directive of the Third Energy Package, which stipulated that pipeline operators could not also be natural gas extractors in order to preserve free competition in energy supply (Gotev, 2014; Varga, 2015, p. 101).

Production

Metal ore production continued to decrease in 2014, with the exception of manganese. Among metals, the production of bauxite and gallium decreased by about 85% each; alumina, by 25%; and aluminum, by 24%. The production of manganese ore increased by 44%. Iron and steel output increased in 2014 after decreasing in 2013. The production of crude steel increased by 31%, and pig iron, by 28%. The production of steel semimanufactures decreased by 6% (table 1).

Among industrial minerals, the production of sandstone increased by 65%; gravel, by 64%; zeolite, by 40%; dolomite, by 37%; foundry sand, by 21%; common sand, by 19%; ammonia, by 16%; hydraulic cement, by 14%; quartzite and limestone, by 13% each; silica sand, by 8%; and sulfuric acid, by 6%. The production of peat decreased by 42%. Among mineral fuels and related materials, natural gas output decreased by 6% and crude petroleum and brown coal, by 2% each. Lignite coal output increased by 1% (table 1).

Structure of the Mineral Industry

All major mineral producers were privately owned, with the exception of aluminum producer Magyar Aluminium Ltd. (MAL) and hydrocarbons producer Hungarian Oil and Gas Co. plc (MOL). MAL was nationalized in February 2013 following its bankruptcy in order to be liquidated. The Government continued to hold a 24.7% ownership interest in MOL as of June 2015. The state's role and ownership in the energy sector has increased substantially since 2013 through regulatory measures that

mandated multiple decreases in household utility prices in 2013 and 2014, the acquisition of the gas distribution company Fogaz from RWE of Germany in April 2014, and the establishment of the state utility company ENKSz in 2015. Table 2 is a list of major mineral industry companies and facilities operating in 2014 (table 2; Budapest Times, The, 2013; European Bank for Reconstruction and Development, 2014; MOL Group, 2015c; U.S. Department of State, 2015, p. 8).

Mineral Trade

Hungary's exports were valued at \$107.7 billion in 2014 compared with \$95.2 billion (revised) in 2013. Its imports were valued at \$104.2 billion in 2014 compared with \$99.1 billion in the previous year. European countries accounted for 85.3% of Hungary's exports and 71.4% of its imports in 2014, and the EU accounted for 77.1% of exports and 59.2% of imports. In terms of both exports and imports, Germany by far had the largest shares, with 27.5% and 22.4%, respectively. The United States accounted for only 3.0% of Hungary's exports and 2.5% of its imports (Hungarian Central Statistical Office, 2015c, d).

In 2014, the value of Hungary's exports of mining and quarrying products was \$75.9 million and accounted for about 0.1% of the total value of all exports. The value of exports of other nonmetallic mineral products was \$4.73 billion and made up 4.4% of total exports; base metals and fabricated metal products, except machinery and equipment, \$4.5 billion, or 4.2% of total exports; and coke and refined petroleum products, \$2.29 billion, or 2.1% of total exports in 2014 (Hungarian Central Statistical Office, 2015b).

In 2014, Hungary's trade balance for crude materials (including nonfuel minerals) was \$0.7 billion compared with \$1.0 billion in 2013. For mineral fuels, related materials, and energy (including electricity), the trade balance was -\$8.3 billion compared with -\$8.5 billion in 2013. In 2014, the value of the country's exports of crude materials was HUF689.2 billion (\$2.8 billion) and accounted for about 3% of the total value of all exports. The value of the country's exports of mineral fuels and related materials was HUF872.4 billion (\$3.6 billion) and accounted for 5% of the total value of all exports. The value of the country's imports of crude materials was HUF519.6 billion (\$2.1 billion) and accounted for 2% of the total value of all imports. The value of the country's imports of mineral fuels and related materials (including electricity) was HUF2,877.1 billion (\$11.9 billion) and accounted for about 15% of the total value of all imports in 2014 (Hungarian Central Statistical Office, 2015a).

In 2014, Hungary's total exports to the United States were \$5.3 billion, and its total imports from the United States were \$1.8 billion. Hungary's mineral exports to the United States included, in order of value, bauxite and aluminum (\$16.9 million); iron and steel advanced manufactures (\$12.1 million); finished metal shapes (\$6.8 million); fertilizers (\$5.2 million); iron and steel products except advanced manufactures (\$2.2 million); precious metals, except gold (\$1.1 million); iron and steel mill products (\$925,000); nonferrous metals (\$596,000); petroleum products (\$300,000); sulfur (\$272,000); nuclear fuel materials (\$193,000); and coal (\$93,000). Hungary's mineral

imports from the United States included, in order of value, finished metal shapes (\$41.5 million); iron and steel products (\$7.8 million); nonferrous metals (\$4.5 million); iron and steel mill products (\$1.9 million); fertilizers (\$1.4 million); copper (\$1.2 million); petroleum products (\$711,000); aluminum and alumina (\$486,000); and nuclear fuel materials (\$181,000) (U.S. Census Bureau, 2015a, b).

Commodity Review

Metals

Aluminum, Bauxite and Alumina, and Gallium.—Bauxite mining in Hungary ended in 2014. MAL, which had been the leading bauxite and alumina producer in the country, was in the process of liquidating its assets to comply with a court order issued in 2013 to pay off company creditors and others who had sued for damages as well as to pay substantial environmental fines that resulted from the collapse in October 2010 of a tailings dam maintained by the company. The collapse was considered the country's worst environmental accident. In July 2014, the Hungarian National Asset Management Company (MNV) initiated the sale of MAL's assets. The operation and management of the company had been taken over by the MNV in February 2013, which established a new company (Nemzeti-MAL-A Alumíniumtermelő) in April 2014 to take over the assets of MAL. The MNV had pledged initially to provide funds to maintain production at MAL and its suppliers. The company closed its Halimba bauxite mine in February 2013 owing to unprofitability and ceased processing its own bauxite (Budapest Times, The, 2013; MTI Econews, 2013; Rácz, 2013; Daily News Hungary, 2014).

Iron and Steel.—All crude steel output in Hungary remained continuous cast steel in 2014. In terms of the production process, 84.5% of crude steel was produced by oxygen-blown converters, while 15.5% of output was by electric furnaces (World Steel Association, 2015, p. 11, 17).

ISD Dunaferr Co. Ltd., which was a wholly owned subsidiary of the Industrial Union of Donbass (ISD) Corp. of Ukraine, was in the process of upgrading its hot-rolling mill and renovating its blast furnace. ISD Dunaferr, which was based in Dunaujvaros, was one of the largest industrial producers in the country. The objective of the investment was to increase the company's 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. In February 2014, ISD Corp. turned down an offer by the Government to acquire ISD Dunaferr and announced that it planned to turn ISD Dunaferr into the most competitive steelworks company in Central and Eastern Europe. The purchase offer had been made initially in September 2013 in order to maintain production and employment at the plant in response to the company's announced plans to downsize in August 2013 by laying off about 27% of its workforce. Layoffs were subsequently reduced from the originally planned 1,500 to 400 workers (Gulyas, 2013; Keszthelyi, 2014a; Landry, 2014a; Regional Today, 2014).

Industrial Minerals

Cement.—In 2014, the production of cement increased owing to a 14% increase in domestic construction activity. Multiple construction projects in transportation infrastructure, industrial buildings, and warehouse properties resulted in increased demand for cement in the country. Activity in the ground engineering sector increased by 23.1% and accounted for about 61% of construction projects in progress; this was in large part owing to new road and railway construction by the Government. The physical volume of output by the building construction sector increased by 10%. The residential sector output increased by 3%, but this followed a contraction of 15% in 2013 (Hungarian Central Statistical Office, 2015i; STRABAG SE, 2015, p. 92).

Lafarge Cement Magyarország Kft. operated the Kiralyegyhza integrated cement plant near Pecs and had an approximate market share of 20% in Hungary. The company had launched the plant in September 2011 in partnership with STRABAG SE of Austria as one of the newest greenfield plants in Central and Eastern Europe. In December 2014, Lafarge opened an alternative fuel warehouse at the Kiralyegyhza plant to store waste rubber, plastic, and industrial waste. STRABAG reported that production from its facilities in Hungary and Austria accounted for 27% of the cement and 28% of the concrete it used for its construction projects around the world in 2014. The company had a market share of 6.4% in Hungary's construction sector as a whole and a 10.1% share in road construction (Global Cement, 2014; International Cement Review, 2015, p. 165; STRABAG SE, 2015, p. 24, 92).

Holcim Ltd. of Switzerland ended cement production in Hungary in 2013 after it announced plans to permanently close its Labatlan wet-process cement plant in October 2012 partly owing to the downturn of the construction sector in the aftermath of the 2008 global economic crisis. Its Hungarian subsidiary, Holcim Magyarország Zrt., operated 16 batching plants. Holcim planned to sell its Hungarian unit in 2015 in order to meet regulatory conditions for its planned merger with Lafarge S.A. (Keszthelyi, 2014b; International Cement Review, 2015, p. 165).

Mineral Fuels and Related Materials

In 2013 (the latest year for which comprehensive data were available), Hungary's primary energy supply was provided by natural gas (33.9%), crude oil and petroleum products (25.6%), nuclear energy (17.6%), coal (11.9%), and renewable energy sources (8.4%). The country's energy production was supplied by nuclear energy (39.2%), renewable energy sources (20.6%), natural gas (14.7%), coal and lignite (15.7%), and crude oil and petroleum products (8.9%). Hungary was import dependent for about 56% of its energy needs, 78% of its natural gas consumption, 81% of its petroleum consumption, and 40% of its coal consumption. Russia was the largest source of the country's imports of crude petroleum (91%), natural gas (65%), and petroleum product imports (39%) (European Commission, 2014, p. 6, 8; International Energy Agency, 2014, p. 235, 240; European Commission, 2015a,

p. 121–122; 2015c, p. 7; Hungarian Central Statistical Office, 2015f; Than and Dunai, 2015).

Coal.—Lignite open pit production continued its recent upward trend in 2014, while brown coal production, which was the predominant segment of the coal sector until the early 1990s, continued to decrease. Bituminous coal production, which had decreased in the country since the early 1970s, had almost ceased in the mid–2000s and was very minor. Hungary’s lignite output was about 8.9 million metric tons (Mt) in 2014, which was a slight increase from 8.8 Mt in 2013. Brown coal output was 734,000 metric tons (t) in 2014, which was a decrease from 747,000 t in the previous year; at its peak in 1964, brown coal output amounted to about 22.4 Mt. The total number of mining plots was 72, of which 30 were in suspended status (table 1; Horváth, 2015, p. 5, 15).

In December 2014, the Márkushegy underground mine, which is located in northwestern Hungary, was closed under EU rules because it was financially uncompetitive. The EC had authorized public funding in January 2013 to aid in the process of closing the Markushegy Mine by the end of 2014 to mitigate any social or environmental effects from the closure. The mine was the last major underground coal mine in the country and had accounted for about 10% of national coal output. As a result of the closure, the state-owned Magyar Villamos Muevek Zrt. planned to convert the Vertes powerplant, which had used coal from the Márkushegy Mine for electricity generation, into a biomass power plant with a built-in capacity of 108 megawatts (MW) (European Commission, 2013; Horváth, 2015, p. 15; Varga, 2015, p. 102).

Two opencast mines, Bükkábrány and Visonta, accounted for about 90% of Hungary’s coal production. The Bükkábrány Mine was the larger of the two and nationally more important in terms of output and electricity generation; it supplied the 880-MW-capacity Matrai Erömu powerplant, which is located in northeastern Hungary. In 2014, the Vasas coal mine, which is located near Pecs, was reopened for small-scale production in order to supply local households, but no production data were available. The reopening of the Vasas coal mine followed the reopening of the Farkaslyuk coal mine, which is located in northeastern Hungary, in the second half of 2013 after 20 years of being closed (Euracoal, 2013, p. 37; European Commission, 2013; Mining Journal, 2014, p. 23; Horváth, 2015, p. 15).

Natural Gas, Petroleum, and Petroleum Products.—Hungary’s crude petroleum production decreased by 7.1% and its natural gas production decreased by 5.6% in 2014 as a result of natural depletion. The domestic extraction of crude petroleum had reached its peak in 1985 at about 64,000 barrels per day (bbl/d) and natural gas, in 1990 at 4.9 billion cubic meters, but they have fallen sharply since then. Domestic production of petroleum met about 13% of the country’s petroleum demand, while that of natural gas accounted for about 24% of domestic consumption. In order to revitalize hydrocarbon exploration and extraction, the Government issued tenders in February 2014 and June 2014. Contracts were subsequently signed with six companies for eight hydrocarbon concession blocks and two geothermal concession blocks (table 1; Conybeare, 2014; International Energy Agency, 2014, p. 233, 240; Horváth, 2015, p. 4).

Hungary’s refining industry supplied about 80% to 85% of domestic demand for oil products, with imports accounting for the remainder. The composition of production was gas and diesel oil (45%), motor gasoline (16%), naphtha (15%), and residual fuel oil (1%). Hungary’s three refineries, which were all owned by MOL, produced sufficient amounts of diesel, gasoline, jet kerosene, and residual fuels to meet domestic consumption; demand exceeded production for only naphtha, liquefied petroleum gas (LPG), and ethane. Crude oil distillation was concentrated in the Duna refinery, which had a capacity of 165,000 bbl/d. The refinery’s main products were benzene, ethylene, propylene, toluene, and xylenes. The Tisza refinery hydrofinished gas oil and produced ethyl tertio butyl ether (ETBE). The Zala refinery blew and blended bitumen (International Energy Agency, 2014, p. 235, 236; MOL Group, 2015d).

MOL continued to be the dominant hydrocarbons and refined petroleum products producer in Hungary with a 98% market share in crude oil and a 95% share in natural gas. The company reported average daily crude oil and condensate production of 10,900 barrels of oil equivalent (BOE) in 2014 compared with 11,500 BOE in 2013, which was a decrease of 5.2%, and average daily natural gas production of 26,000 BOE compared with 27,200 BOE in 2013, which was a decrease of 4%. The company’s goal was to keep the production decline below 5% by developing resources from new exploration concessions. In 2014, MOL was awarded exploration licenses for the Szeged Basin West and Okany Eastern hydrocarbon concession blocks and the Jaszbereny geothermal block. The company also continued its unconventional exploration project in the Derecske basin (Horváth, 2015, p. 7, 10; MOL Group, 2015a, p. 27, 31, 61; 2015b).

TXM Exploration and Production LLC, which was a subsidiary of Falcon Oil & Gas Ltd. of Ireland, held a 35-year hydrocarbon production license in the Makó Trough, which formed a part of the greater Pannonian Basin of Central Europe. The license covered an area of approximately 1,000 square kilometers located in the Makó Trough and close to the MOL group-owned and operated Algyö field, which had produced approximately 220 million barrels of crude oil and 708 billion cubic meters of natural gas through 2014. In January 2014, Falcon began testing operations on the first of three planned exploration wells, Kút völgy-1, to determine reservoir quality and gas productivity from the target Algyö formation. In May 2014, the company completed well-testing operations on Kút völgy-1 and also spudded a second well, Besa-D-1. Falcon plugged and abandoned the former because production did not meet commercial rates, and focused on the latter. In July 2014, the company suspended the Besa-D-1 well after drilling reached 3 kilometers and encountered gas shows. The three well program was extended through December 31, 2014. In December, however, Falcom also plugged and abandoned the second well after production did not meet commercial rates (Falcon Oil & Gas Ltd., 2014; 2015, p. 8, 9, 11).

Wildhorse Energy Ltd. of Australia terminated the coal gasification project it was in the process of developing near Mecsek Hills, which is located near the city of Pecs in southwestern Hungary, in conjunction with its uranium extraction plans. Although

the company intended to sell the coal gasification project to Linc Energy of Australia in February 2014, the deal was subsequently canceled (Landry, 2014b; World Nuclear Association, 2015).

Hungary was a participant in the proposed South Stream Pipeline project, which would transmit gas from Russia across the bed of the Black Sea to Bulgaria, then through Bulgaria and Serbia to Central Europe. In November 2014, the Government announced plans to begin the construction of its portion of the pipeline in 2015. Gazprom of Russia had stored up to 700 million cubic meters of gas in Hungary since 2013. In December 2014, however, the project was canceled by the Government of Russia in response to infringement proceedings initiated by the EC against Bulgaria regarding the South Stream project for breach of the EU Gas Directive on competitive energy markets. The Government considered joining the proposed alternative project, the Turkish Stream pipeline, which would transmit gas through Turkey (Gotev, 2014; Leifheit, 2014; Russia Today, 2014; Than and Dunai, 2015).

Uranium and Nuclear Energy.—Uranium had not been produced since 1997 when the Mecsek Hills Mine was closed owing to inefficiency of operations. The in situ resources at the Mecsek Hills deposits were about 26.8 Mt of uranium ore, whereas inferred resources were 15 Mt and indicated resources were 750,000 t. Demonstrated (measured plus indicated) and inferred resources were about 31,400 t of contained uranium. A total of 20,600 t of uranium was produced at Mecsek Hills at an average rate of recovery of 50% to 60% between 1956 and 1997. In June 2012, the Government decided to examine the feasibility study prepared by Wildhorse, which was awarded an exploration license for uranium at the site in 2006. The area covered by Wildhorse's 20-year exploration and extraction license near the city of Pecs was subsequently expanded to 355 square kilometers, which increased the Joint Ore Resources Committee (JORC)-compliant inferred resource to 30,000 t of contained uranium. In October 2014, however, the company stopped all exploration activities in Hungary and divested itself of the project, citing a lack of progress and high operational costs, to focus on its Golden Eagle uranium and vanadium project in the United States (MTI Econews, 2012; Interactive Investor, 2014; Horváth, 2015, p. 14; Varga, 2015, p. 102; World Nuclear Association, 2015).

Hungary operated four nuclear reactors at the country's sole nuclear powerplant, the Paks Nuclear Power Plant, which had an electricity-generating capacity of 2 gigawatts and accounted for about 42% of the country's electricity generation. All nuclear fuel supply was contracted from TVEL of Russia. In November 2014, Paks Unit 2's operating license was extended by 20 years. The official target was to increase the share of nuclear energy in national electricity generation to about 60% by increasing nuclear capacity. In January 2014, the Government granted Rosatom State Atomic Energy Corp. of Russia the right to build two new nuclear reactors with a capacity of 1,200 MW each, which would increase the capacity of the Paks Power Plant from 2,000 MW to 2,400 MW. The first new unit was expected to be operational by about 2023. Nuclear fuel for the plant was to be supplied solely by Rosatom (World Nuclear News, 2014; U.S. Department of State, 2015, p. 3; Varga, 2015, p. 101; World Nuclear Association, 2015).

Outlook

Hungary's production of alumina, aluminum, and gallium is expected to continue to decrease owing to the end of bauxite mining in the country in 2014. Metal output levels will be largely determined by whether MAL's facilities and mines are kept in operation or dismantled following the company's liquidation. The production of crude steel and manufactures is expected to increase with Dunaferr's ongoing plant modernization. Coal output levels will decrease with the closing of the Márkushegy Mine in 2014; the production by newly reopened mines is likely to remain low in the near future and not make up the loss of output from Márkushegy. The production of cement and other construction materials may continue to increase if the Government continues to budget more stimulus funds for the sector. Crude petroleum and natural gas outputs in Hungary are projected to decrease further, although MOL's new wells may reduce the rate of decline. The new exploration licenses granted by the Government in the two bidding rounds are not expected to result in increased hydrocarbon extraction in the near future. No petroleum production is expected to materialize at the Makó Trough following Falcon's decision to end drilling in the country. Uranium production is likely to remain nonexistent after Wildhorse's termination of its Mecsek Hills project in 2014.

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TABLE 1
HUNGARY: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ²	2010	2011	2012	2013	2014
METALS					
Alumina, gross weight, calcined basis	214	165 ^c	110	81	61
Aluminum, unwrought, including secondary	234	185 ^c	234	62	47
Bauxite, gross weight	171 ^r	155 ^r	144 ^r	52 ^r	8
Gallium ^c kilograms	4,000	5,000	4,600	1,713 ³	260
Iron and steel, metal:					
Pig iron	1,325	1,317	1,229	628	801
Steel:					
Crude	1,678	1,746	1,542 ^r	883	1,152
Semimanufactures	1,594	1,765	1,928	1,936 ^r	1,823
Manganese ore, run-of-mine:					
Gross weight	158 ^r	167 ^r	147 ^r	100 ^r	144
Mn content	14	15	13	9	13
INDUSTRIAL MINERALS					
Alginite cubic meters	590 ^r	1,020 ^r	1,914	2,719	2,706
Ammonia	NA	NA	NA	359 ³	417 ³
Cement, hydraulic ^c	2,100	1,950 ^r	1,770 ^r	2,415 ^{r,3}	2,750
Clays:					
Bentonite, raw	6 ^r	7 ^r	1 ^r	3 ^r	6
Chamotte, refractory clays	82	86	80 ^c	64 ^c	70 ^c
Kaolin, beneficiated	239	248	250 ^c	310 ^{c,r}	320 ^c
Other, unspecified	1,271	1,780 ^c	1,170 ^c	870 ^{c,r}	900 ^c
Diatomite metric tons	2,490	1,309	1,229 ^{r,3}	434	450 ^c
Gypsum and anhydrite do.	2,560	--	--	--	--
Lime, calcined	260	250	230	250 ^{c,r}	250 ^c
Nitrogen, N content of ammonia ^c	300	300	300	300	300
Paludal mud cubic meters	NA	NA	28,000 ³	19,974 ³	19,000 ^c
Peat, agricultural use ³	70 ^r	100 ^r	82 ^r	119 ^r	69
Perlite cubic meters	34 ^r	34 ^r	35 ^r	31 ^r	33
Quartzite do.	380 ^r	188 ^r	123 ^r	507 ^r	571
Sand and gravel:					
Gravel	17,525 ^r	16,440 ^r	14,689 ^r	17,622 ^r	28,886
Sand:					
Common	6,877 ^r	5,741 ^r	5,595 ^r	6,806 ^r	8,078
Foundry	121 ^r	123 ^r	56 ^r	52 ^r	63
Glass (silica)	271	287	124 ^c	353 ^{r,3}	382 ³
Stone:					
Dimension, all types	9,810	8,870	8,600	8,330 ^r	8,400 ^c
Dolomite	5,375 ^r	4,958 ^r	4,105 ^r	4,877 ^r	6,689
Limestone	7,468 ^r	6,047 ^r	5,834 ^r	6,022 ^r	6,789
Marl	23 ^r	48 ^r	52 ^r	3 ^r	3
Sandstone metric tons	30,190 ^r	16,266 ^r	10,909 ^r	22,723 ^r	37,452
Sulfur, byproduct, elemental, all sources ^c	60	60	60	60	60
Sulfuric acid ^c	75	75	75	63 ^{r,3}	67 ³
Zeolites cubic meters	17,084	13,947	15,467	14,135	19,712
MINERAL FUELS AND RELATED MATERIALS					
Coal:					
Brown	910	755	859	747 ^{r,3}	734 ³
Lignite	8,203	8,800	8,438	8,834	8,918 ³
Total	9,113	9,555	9,297	9,581 ^r	9,652
Coke, metallurgical ^c	1,100	820	870	853 ^r	862
Gas, natural, net (marketable) million cubic meters	3,036 ^r	2,667	2,286 ^r	2,065 ^{r,3}	1,934 ³
Petroleum:					
Carbon black	--	3,000	--	--	--
Crude ⁴ thousand 42-gallon barrels	4,613 ^r	4,200 ^r	4,144 ^r	3,817 ^r	3,735

See footnotes at end of table.

TABLE 1—Continued
HUNGARY: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons unless otherwise specified)

Commodity ²		2010	2011	2012	2013	2014
MINERAL FUELS AND RELATED MATERIALS—Continued						
Petroleum—Continued:						
Refinery: ^{4, e}						
Motor fuel (including aviation fuel)	do.	10,700	11,200	12,000	10,950 [†]	10,300
Distillate fuels	do.	8,760	9,200	9,870	9,700 [†]	9,100
Kerosene	do.	1,760	1,850	1,980	1,340 [†]	1,450
Gas oils	do.	28,800	30,200	32,400	30,200 [†]	31,100
Other fuel oils	do.	367	385	414	378	380
Lubricating oils	do.	1,190	1,250	1,340	1,100 [†]	1,200
Liquefied propane and butane	do.	2,500	2,630	2,820	3,210 [†]	2,800
Petroleum jelly, paraffin wax, and other waxes	do.	328	344	370	358 [†]	370
Petroleum coke, bitumen, and residues	do.	5,120	5,380	5,770	5,262	5,300
Total	do.	59,500	62,400	67,000	62,500 [†]	62,300

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

¹Table includes data available through November 18, 2015.

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.

³Data before 2011 may include production of alginite and (or) paludal materials (including paludal mud).

⁴Figures 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 2014

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity holders	Location of main facilities	Annual capacity
Alumina	Magyar Aluminium Ltd. (MAL)	Ajka Timfoldgyar plant, about 120 kilometers southwest of Budapest, near Lake Balaton	400
Alumina, fused	Motim Electrocorundum Ltd.	Plant at Mosanmagyaróvár	50
Aluminum	Alcoa-Köfém Kft (Alcoa Inc., 100%)	Székesfehérvár ingot plant.	NA
Bauxite	Magyar Aluminium Ltd. (MAL)	Bakony and Halimba Mines, ¹ 5 kilometers south of Ajka, northwestern Hungary	NA
Bentonite	Bentonit Hungaria Kft (S&B Industrial Minerals S.A., 100%)	Mines and plant at Egyházaskeszo	NA
Cement	Duna-Drava Cement Kft. (HeidelbergCement AG, 50%; Schwenk Zement KG, 50%)	Plants at Beremend, 30 kilometers south of Pécs, and Vac, 35 kilometers north of Budapest	2,800
Do.	Holcim Magyarország Zrt. (Holcim Ltd.) ²	Plant at Labatlan	300
Do.	Lafarge Cement Magyarország Kft. (Lafarge S.A., 70%; STRABAG SE, 30%)	NOSTRA plant at Kiralyegyhaza, southwestern Hungary	1,000
Clays	Agyag-Asvány Kft.	Two opencast mines at Felsopeteny	NA
Coal:			
Brown coal	Vertes Power Plant Ltd. (Magyar Villamos Muvek Zrt., 96.59%) ³	Markushegy Mine at Oroszlány, 55 kilometers west of Budapest	1,400 ^e
Do.	NA	Bakonyoszlop Mine in Veszprem	NA
Do.	NA	Farkaslyuk Mine in Borsod-Abaúj-Zemplen	NA
Lignite	Mátrai Erőmű 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 ^e
Do.	do.	Opencast mine at Bukkabrány, 130 kilometers northeast of Budapest	4,000 ^e
Do.	NA	Vasas opencast mine in Pécs	NA
Coke	ISD Kokszoló Ltd. (ISD Dunaferri Co. Ltd.)	Dunaujváros, 60 kilometers south of Budapest	1,000
Iron, pig iron	ISD Dunaferri Co. Ltd. (Industrial Union of Donbass Corp.)	do.	1,400
Manganese	Mangán Mining and Processing Ltd.	Úrkút manganese ore mines, 120 kilometers southwest of Budapest	NA
Natural gas	Hungarian Oil and Gas Co. plc. (MOL) (Foreign investors, 25.1%; Government, 24.7%; CEZ MH B.V., 7.3%; OmanOil Ltd., 7.0%; others, 35.9%)	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, 25.1%; Government, 24.7%; CEZ MH B.V., 7.3%; OmanOil Ltd., 7.0%; others, 35.9%)	Oil and gas fields in southern and southwestern Hungary	14,800 ^e
Refined	do.	Százhalombatta, 25 kilometers southwest of Budapest	165,000
Do.	Tisza Refinery [Hungarian Oil and Gas Co. plc. (MOL), 100%]	Tiszaújváros in northeastern Hungary	NA
Do.	Zala Refinery [Hungarian Oil and Gas Co. plc. (MOL), 100%]	Zalaegerszeg in western Hungary	NA
Pig iron	ISD Dunaferri Co. Ltd. (Industrial Union of Donbass)	Dunaujváros, 60 kilometers south of Budapest	1,300
Silica	Uveg-Asvány Banyaszati Ipari Kft.	Mine and plant at Fehevársügo	NA
Steel, crude:			
Primary	ISD Dunaferri Co. Ltd. (Industrial Union of Donbass)	Dunaujváros, 60 kilometers south of Budapest	1,600
Secondary	OAM OZD Steelworks Ltd.	120 kilometers northeast of Budapest	360
Do.	Dam 2004 Acél-es Hengermu Kereskedemi es Szolgáltató Ltd.	Diosgyor, 145 kilometers northeast of Budapest	550

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

¹Halimba Mine was closed in February 2013.

²Stopped production in October 2012.

³Closed in December 2014.