2013 Minerals Yearbook

FRANCE

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The Mineral Industry of France

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France's gross domestic product (GDP) was $2.739 trillion in 2013, which represented real GDP growth of 0.3% for the year. France had the third largest GDP in the European Union (EU) after Germany and the United Kingdom. The output value of France's entire industrial sector accounted for 18.7% of the GDP in 2013. The country was an important processor of raw mineral materials and a manufacturer and consumer of industrial durable goods. France's heavy industries, which among other product categories produced automotive and aviation products, chemicals, and machine tools for domestic consumption and export, relied mainly on imported metal ores and concentrates and on imported industrial minerals and mineral fuels (U.S. Central Intelligence Agency, 2015).

Minerals in the National Economy

France has gradually transitioned in the past two decades from being a mineral producer and processor of mineral commodities to being principally a processor and manufacturer of mineral goods and commodities. Mining of metals has ceased in metropolitan France; however, mining and processing of industrial minerals and processing of metal commodities was still ongoing. Owing to the size and structure of France's economy, the upstream input of minerals was key to the continued maintenance and growth of the country's heavy industries.

Government Policies and Programs

The role of the Government of France in the functioning of the mineral industry is principally through its mining code and the Ministry of Ecology and Sustainable Development and the Bureau de Recherches Geologiques et Minieres (BRGM).

The French mining code was last modified on March 1, 2011. Most of the changes were aimed at simplifying the acquisition of exploration licenses and licenses for the development of future projects (Legifrance, 2013).

The Ministry of Ecology and Sustainable Development was responsible for overseeing and regulating such environmental issues as agricultural runoff; air pollution from industrial and vehicle emissions; forest damage from acid rain; and water pollution from mining, mineral processing, and urban waste. BRGM, which is France's geological survey, is the French institution that performs and develops geologic and mineral research in France and abroad; the headquarters are located in Orleans.

Production

In 2013, the volume of production of the mineral industry decreased by more than 10% compared with the previous year in alumina, cement, cobalt, ferrosilicon, kaolin, secondary lead, lime, limestone, slate, and zinc metal. The volume of production of chalk, dolomite, diverse sand and gravel aggregates, and hot-rolled steel increased by less than 9% compared with that of the previous year (table 1).

Mineral Trade

Most of France's demand for fuel and nonfuel mineral raw materials was met by imports. The major commercial partners of France were all members of the EU and included Belgium, Germany, Italy, and Spain. The United States was a leading non-EU commercial partner of France in 2013. France's exports were estimated to be $578 billion in 2013, and imports, $659.8 billion. The estimated value of the trade balance of France with EU countries that were not in the euro area was $1.82 billion, and that with non-EU member countries was $1.8 billion. Imports by France included aircraft, chemicals, crude oil, machinery and equipment, plastics, and vehicles. France's exports were principally aircraft, beverages, chemicals, iron and steel, machinery and transportation equipment, pharmaceutical products, and plastics (European Union 2014, p. 44–45; U.S. Central Intelligence Agency, 2015).

Structure of the Mineral Industry

In 2013, the French Government maintained partial ownership of the country's electricity generation and natural gas production and distribution facilities, as well as ownership of rail and public transportation systems at the national level. Most French cities owned and ran their own local transportation systems, the notable exception being bus and commercial transportation, which was privately owned and run. Although the Government of France continued to maintain state monopolies in a number of sectors of the economy (principally in the energy production and transport sectors) in 2013, state ownership in the mineral sector was minimal. France had several leading mineral producer companies that had operations in France and abroad, among them Imerys Group, which was a major French producer of industrial minerals. Imerys mined and processed ball clays, carbonates, feldspar, and red clays domestically and from deposits in such countries as China, Germany, Spain, the United States, and Vietnam for domestic use and export; Imerys also owned Talc de Luzenac S.A., which was a leading talc-producing company in the world market (Imerys S.A., 2014, p. 17).

LaFarge S.A. and Societe de Ciments Francais S.A. are leading cement producers in the world and have between them more than 20 facilities in France that produce and manufacture cement and construction products. Total S.A. was the eighth-ranked energy company in the world by value of sales. Most of Total's crude oil and gas production originates outside of France, although it has several refineries that operate and distribute products in continental France and its territories (Platts Top 250, 2014).

Table 2 provides data on the major enterprises that produced metals, industrial minerals, and mineral fuels in France in 2013.

Commodity Review

Metals

Aluminum.—In 2013, France's output of primary aluminum remained at about the same level as in 2012 (table 1). Rio Tinto Ltd. of Australia was the country's sole producer of primary aluminum. Rio Tinto also operated facilities for the production of aluminum semimanufactures. Rio Tinto had sold its Gardanne specialty alumina plant in 2012 to H.I.G Capital Europe, which in turn formed a company called Alteo Holdings (Alteo) to manage the plant (Rio Tinto Alcan, 2012). In March 2013, Alteo announced that it was building a second filter press in the Gardanne facility for an investment of about $17 million and to be completed by 2015 (Alteo Holdings, 2013).

Ferroalloys.—Vale S.A. of Brazil reported that it had sold its manganese ferroalloys operations in Europe for $160 million to subsidiaries of Glencore International plc of Switzerland. The facilities included in the sale were Vale Manganese France SAS, located in Dunkerque, France, and Vale Manganese Norway AS, located in Mo I Rana, Norway (Vale S.A., 2012, p. 4).

Iron and Steel.—In 2013, France's output of pig iron increased by 7.8% compared with that of the previous year. Crude steel production remained about the same level as in 2012 (table 1). Crude steel apparent use increased by about 3% (World Steel Association, 2014, p. 79).

Industrial Minerals

Cement.—In 2013, cement production was unchanged, and cement consumption, principally in the engineering sector, decreased by 3% compared with the same levels in 2012. France's principal cement manufacturers were Lafarge S.A. and Société des Ciments Français, a subsidiary of Italcementi S.p.A of Italy. In addition to their cement-producing facilities in France, both companies had major capital assets abroad. The other significant producers of cement in France were Vicat Group, which had five plants with a total cement production capacity of 6 million metric tons per year (Mt/yr), and Holcim Ciments S.A, which had six plants and a total cement production capacity of 5.9 Mt/yr (table 2; Cembureau, 2014, p. 10).

Mineral Fuels and Other Sources of Energy

In 2012 (the latest year for which data were available), nuclear energy accounted for an estimated 94% of primary electricity production. The principal sectors that consumed energy in France were, in order of consumption, the residential sector (44.5%), the transportation sector (31.9%), and the manufacturing and steelmaking industries and agricultural sectors combined (23.7%) (Institut National de la Statistique et des Études Économiques, 2014a).

Renewable energy production increased by 18.9% in 2012. Within the renewable energy sector, production of photovoltaic cell solar energy increased by 88.2% and the production of wind power energy increased by 22.04% (Institut National de la Statistique et des Études Économiques, 2014b).

Nuclear Energy.—Group Areva, which was the Government-owned nuclear technology company, was building the first nuclear reactors in Western Europe in 20 years. Areva's reactor, which is called a Third Generation, or evolutionary power reactor (EPR), or European Pressurized Reactor (as it is known in the rest of Europe), had helped the company compete for new construction contracts for nuclear powerplants in France and abroad.

In December 2011, the last segment of the seismic isolation pit basemat was poured at the International Thermonuclear Experimental Reactor (ITER) complex in Cadarche in the Provence-Alpes-Côte d'Azur region, and the toroidal magnetic field (Tokamak) reactor pit construction was reportedly progressing according to schedule; the reactor was expected to be commissioned by 2019. The seven participants in the ITER project were China, the EU, India, Japan, the Republic of Korea, Russia, and the United States. The project was focused on developing nuclear power production from fusion-generated energy rather than fission-generated energy (International Thermonuclear Experimental Reactor, 2011).

Outlook

The French economy has not yet recovered fully from the recession, and this continued to affect its industry and employment. Unemployment in the country increased in 2013 and is expected to remain high in the near future. France is principally a processor of minerals, and the domestic rate of consumption of nationally produced goods and services, as well as the demand for French manufactured goods abroad, has affected the French mineral industry and its expectations for growth. France will likely continue to import much of its ores and minerals for its manufactured goods industry in the near future, although the French Government has indicated that it is interested in restarting the mining of commodities in metropolitan France. The share of renewable energy in France's total consumption of energy continues to grow as the Government is investing and promoting renewable energy usage. Despite this increase, and although there is public interest in decreasing the role of nuclear energy in the country, nuclear power very likely will remain the focus of the Government's energy generation strategy for the near future.

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TABLE 1
FRANCE: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2009	2010	2011	2012	2013
METALS						
Aluminum:						
Bauxite, gross weight[e, 3]	thousand metric tons	160	--	--	69 [4]	--
Alumina, metallurgical, gross weight[e]	do.	348 [4]	481 [4]	470	430 [4]	315
Metal:						
Primary	do.	345	356	334	349	346
Secondary	do.	138	184	191	184	180
Cadmium metal[e]		50	50	--	--	--
Cobalt, metal		368	302	354	350	308
Gold, mine output, Au content[e]	kilograms	1,500	1,500	--	--	--
Iron and steel:						
Metal:						
Pig iron	thousand metric tons	8,104	10,137	9,698	9,532	10,276
Ferroalloys, electric furnace:[e]						
Ferromanganese	do.	46	138	131	131	130
Ferrosilicon	do.	22 r	32 r	72 r	63 r	50
Silicomanganese	do.	54	62	63	63	60
Silicon metal	do.	80	112	104 r	95 r	100
Other	do.	60	60	60	60	60
Total[5]	do.	262	400	440	440	400
Steel:						
Crude	do.	12,840	15,414	15,780	15,609	15,685
Hot-rolled	do.	11,382	13,581	13,715	13,529	14,716
Lead, refined:[e]						
Primary		--	--	--	--	--
Secondary		82,000	71,000 r	80,000 r	83,000 r	71,000
Total		82,000	71,000 r	80,000 r	83,000 r	71,000
Nickel, refinery products, Ni content[6]		13,900	14,400	13,700	14,500	14,500
Tin, secondary[e]		1,500	1,500	--	--	--
Zinc metal, including slab and secondary		161,000	163,000	164,000	161,000	152,000

See footnotes at end of table.

TABLE 1—Continued
FRANCE: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2009	2010	2011	2012	2013
INDUSTRIAL MINERALS						
Abrasives, undifferentiated[e]		270	270	270	270	270
Cement, hydraulic	thousand metric tons	17,974 [r]	17,733 [r]	19,270 [r]	18,000	18,018 [r]
Clays:						
Kaolin and kaolinitic clay (marketable)	do.	519	315	315	315	267
Refractory clay, unspecified[e]	do.	15	15	15	15	15
Diamond, synthetic, industrial[e]	thousand carats	3,600	3,600	3,600	3,600	3,600
Gypsum and anhydrite, crude	do.	3,351	3,440	4,231	3,685	3,455
Lime, quick and hydrated, dead-burned dolomite[e]	do.	4,000	4,000	4,000	4,000	3,371 [4]
Mica[e]		20,000	20,000	20,000	20,000	20,000
Nitrogen, N content of ammonia[e]	thousand metric tons	2,970 [4]	3,517 [4]	3,500	2,644 [4]	2,600
Pigments, mineral, natural, iron oxide[e]		1,000	1,000	1,000	900 [r]	900
Phosphates, Thomas slag[e]	thousand metric tons	50	50	50	50	50
Pumice and other natural abrasives[e]	do.	270	270	270	270	270
Salt, all sources	do.	6,200 [e]	5,867	5,430	5,457	5,893
Stone, sand and gravel:						
Chalk	do.	1,294	1,765	2,733	1,702	2,214
Dolomite, crude	do.	777	700	393	423	647
Granite, crude	do.	403	426	482	233	289
Limestone, agricultural and industrial	do.	8,302	9,102	10,666	10,216	9,721
Marble and travertine, crude[e]	do.	150	150	150	150	23 [4]
Sand and gravel:						
Industrial sands		7,442	8,498	6,286	8,880	8,752
Other sand, gravel, and aggregates		263,530	249,512	277,521	251,015	260,524
Slate, crude[e]		8,700	8,700	8,700	8,700	7,081 [4]
Talc, crude[e]	thousand metric tons	420	420	420	420	450
MINERAL FUELS AND RELATED MATERIALS						
Asphaltic material[e]		11,675 [4]	11,600	11,600	11,600	11,600
Carbon, black		178,777	203,563	134,329	134,000	105,041
Coal, briquets[e]	thousand metric tons	100	100	100	100	100
Gas, natural, marketed	million cubic meters	1,444	1,245	1,132	538 [r, 4]	600
Petroleum:						
Crude	thousand 42-gallon barrels	6,624	6,606	6,508	5,949	5,840
Refinery products:						
Liquefied petroleum gas	do.	29,236	24,346	24,300	16,973 [r]	17,000
Gasoline, all kinds	do.	133,225	115,596	115,000	100,740 [r]	100,000
Kerosene and jet fuel	do.	39,274	35,113	35,100	-- [r]	--
Distillate fuel oil	do.	246,959	224,950	224,900	194,801 [r]	195,000
Residual fuel oil	do.	61,137	59,313	59,300	52,962 [r]	53,000
Other products	do.	107,748	106,617	106,600	86,578 [r]	87,000
Total	do.	617,579	565,900	565,200	452,054 [r]	452,000

[e]Estimated; estimated data rounded to no more than three significant digits; may not add to totals shown. [r]Revised. do. Ditto. -- Zero.

[1]Table includes data available through December 30, 2014.

[2]In addition to the commodities listed, France produces antimony, metallurgical coke, diatomite, feldspar, germanium, kyanite, sandstone, sodium compounds, and sulfur, but actual output is not regularly reported, and available information is inadequate to make reliable estimates of output.

[3]Reprocessed bauxite not for metallurgical use.

[4]Reported figure.

[5]Data may not add to totals shown.

[6]Excludes secondary production from nickel-cadmium batteries.

TABLE 2
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY IN 2013

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina, metallurgical		Alteo Holdings, 100%	Plant at Gardanne	700
Aluminum		Rio Tinto Ltd.	Aluminum smelters, of which:	
Do.		do.	Saint-Jean-de-Maurienne, Savoie	120
Do.		do.	Dunkerque, Calais du Nord	250
Andalusite		Denain-Anzin Minéraux Réfractaire Céramique	Glomel Mine, Brittany	75
Antimony, metal		Produits Chimiques de Lucette	Plant at Le Genest, Mayeene Province	15
Barite		Barytine de Chaillac	Mine and plant at Chaillac	150
Do.		Société Industrielle du Centre	Mine at Rossigno, Indre Province	100
Cement		Four companies:	80 plants, including:	26,700
Do.		LaFarge S.A.	14 plants, the largest of which is at St. Pierre-la-Cour (1,160)	10,000
Do.		Société des Ciment Français (Italcementi S.p.A.)	Nine plants, the largest of which is at Gargenville (1,100)	7,500
Do.		Vicat Group	Five plants	6,000
Do.		Holcim Ciments S.A.S	Nine plants	5,900
Clay, kaolin		Groupe Mineral Harwanne (GMH)	Kaolin d'Arvor Mine, Quessoy	300
Cobalt, metal	metric tons	Société Métallurgique le Nickel (SLN)	Plant at Sandouville, near Le Havre	600
Copper, metal		Compagnie Générale d'Électrolyse du Palais	Electrolytic plant at Palais-sur-Vienne	45
Diatomite		Ceca S.A.	Mines and plants at Riom-les-Montagnne and St. Bauzille	100
Feldspar		Denain-Anzin Mineraux S.A. (Imerys Group)	Mine and plant at St. Chely d'Apcher	55
Ferroalloys		Comilog Dunkerque (ERAMET, 100%)	Dunkerque	70
Do.		FerroPem S.A. (Grupo Ferro Atlantica, 100%)	Six plants	290
Do.		Glencore Manganese France S.A. (Glencore Xstrata plc, 100%)	Plant at Dunkerque	140
Gypsum		S.A. de Matériel de Construction	Mine at Taverny	1,500
Indium		Nyrstar S.A.	Plant at Auby	48
Iron and steel, steel:		ArcelorMittal Group	Plants at:	
Crude		do.	Dunkerque	6,700
Rolling mills		do.	Fos-sur-Mer	4,200
Do.		do.	Florange[1]	3,200
Do.		do.	Gandrange, Neuves Maisons	8,400
Mica		Denain-Anzin Minéraux S.A. (Imerys Group)	Mine at Ploemeur, Brittany	160
Natural gas	million cubic meters	Total Group	Gasfield and plant at Lacq	20,000
Nickel, metal		Société Métallurgia le Nickel (SLN)	Plant at Sandouville	16
Nitrogen, N content of ammonia		GPN S.A	Plant at Grandpuits	390
Petroleum:				
Crude	42-gallon barrels per day	Total S.A.	Paris Basin oilfields	1,000
Refined	do.	do.	Refineries at Gonfreville and La Mede	446,000
Do.		Petroplus S.A.	Refinery at Petite Couronne	285,000
Do.		Total S.A.	Refinery at Feyzin	120,000
Do.		do.	Refinery at Donges	200,000
Do.		do.	Refinery at Grandpuits	96,000
Do.		Ineos Group Ltd.	Refineries at Lavera	175,000
Do.		Esso S.A.	Refineries at Fos-sur-Mer	62,000
Do.		do.	Refineries at Gravenchon	237,000
Do.		Cie. Rhenane de Raffinage (CRR)[2]	Refinery at Reichstett	80,000
Salt		Compagnie des Salins du Midi et des Salines de l'Est (Salins Group)	Mines and plants at Aigues-Mortes, Dax, Salin-de-Giraud, and Varangeville	2,500
Sulfur		Total S.A.	Byproduct from natural gas, Lacq plant	3,000
Talc		Talc de Luzenac S.A. (Imerys S.A., 100%)	Trimouns Mine near Ariege, Pyrenees	450
Zinc, metal		Nyrstar S.A.	Plant at Auby	172

Do., do. Ditto.

[1]The Florange blast furnace was idle for all of 2012.

[2]Production operations terminated; conversion to petroleum product distribution in 2012.