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The Mineral Industry of France

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In 2009, France's gross domestic product (GDP) based on purchasing power parity of $2.097 was lower than the GDP of $2.15 trillion of the previous year although France continued to be the country with 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 about 19.3% of its GDP in 2009. The country was a significant processor of raw mineral materials and a manufacturer of industrial and consumer 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, 2010).

The economic downturn that affected the world had a significant effect on France's industries across the board. The recession in France was less severe than that of other countries with a similar GDP, however, because of the country's generous social net that protected domestic demand and its limited reliance on exports. Recovery, however, was expected to be rather slow precisely for the same reasons (International Monetary Fund, 2010).

Minerals in the National Economy

During the past 20 years, France gradually transitioned from being a producer and processor of mineral commodities to being mainly a processor. By 2009, most mining, and certainly mining of metals, had ceased in metropolitan France. 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. In 2009, France reported a net negative trade balance with fellow members of the EU of about $85,800 million[1] and a net positive balance with nonmembers of $10.9 million; it had a net negative total trade balance of $74.9 million (Eurostat, 2010a, p. 228-237).

Government Policies and Programs

The French Government's trend towards to taking a smaller role in regulating private industry seemed to decrease as the recession prompted the Government to take direct action to try to stimulate the economy. This reversal is similar to what happened in other countries in the world, including the United States, during 2009. The French Government created the Fonds Stratégique d'Investissement (FSI), or strategic investment fund, to direct Government investments in private industry. The FSI planned to invest a total of $2.78 billion per year in private industry (Economist, The, 2009).

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. The Government had created the Agency for Industrial Innovation [l'Agence de l'Innovation Industrielle (AII)] in June 2005. In 2008, the AII was integrated into a new association called OSEO that was created to fund and help businesses, particularly small-and medium-size businesses, develop and finance innovation. In 2009, OSEO received the approval of the French President to invest $2.08 billion in technological development and research and entrepreneurship. An important aspect of this investment was its emphasis on the promotion and development of new technologies by small- and medium-sized businesses that otherwise would not have access to funds to develop their research (OSEO, 2010).

Production

In 2009, the mineral industry of France trended generally toward decreased production owing to the drop in the international prices of many commodities combined with an increase in energy costs. Alumina output decreased by 41%; silicon metal, by 40%; secondary aluminum, by 33.9%; pig iron, by 28.7%; crude steel, by 28.2%; hydraulic cement, by 14.4%; and primary aluminum, by 11.3%. There were also reductions in the output of silicomanganese (by 10%), crude petroleum (6.9%), and ferromanganese (2%). Some minerals showed increases in the volume of production, in particular, industrial minerals, which included an increase of 271% in the production of nitrogen, 123% in the production of chalk, 43.1% in the production of industrial sands, and 8.9% in the production of granite. Other significant increases or decreases shown in table 1 and not mentioned here might be subject to future revisions as estimated production data are revised (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 leading non-EU commercial partner of France was the United States. In 2009, exports from France to other countries in the EU[2] included nonferrous metals,[3] which were valued at $4.01 billion; nonmetallic mineral

[1]Where necessary, values have been converted from euro area euros (€) to U.S. dollars (US$) at an average exchange rate of €.719=US$1.00.

[2]In the European Commission's official reports, exports from one member country to other countries within the European Union (EU) are referred to as "dispatches," and imports by a member country from other countries in the EU are referred to as "arrivals."

[3]The classifications stated are from the United Nation's Statistics Division's Standard International Trade Classification, Revision 4 (series M, no. 34, rev. 4, March 2006).

manufactures, $3.49 billion; metalliferous ores and metal scraps, $2.56 billion; and crude minerals, excluding coal, crude oil and precious stones, $534 million. Imports by France of goods originating from other countries in the EU included manufactured metals valued at $11.77 billion; nonferrous metals, $5.82 billion; and metalliferous ores and metal scrap, $1.44 billion. In contrast, France's leading mineral industry imports, in terms of value, from a non-EU country, not including mineral fuels, were manufactured metals ($2.98 billion) and nonferrous metals ($1.99 billion). The leading mineral exports to non-EU countries were iron and steel and manufactured metals, which were valued at $4.35 billion and $3.98 billion, respectively (Eurostat, 2010a, p. 106-108, 114-116, 122-124,130-132).

The most significant component of France's mineral trade in 2009 was the net imports of mineral fuels; France imported 72.25 million metric tons (Mt) of crude petroleum, which was a decrease of 13.5% compared with the level of crude petroleum imports in 2008. Of this amount, France imported at least 32% from the Commonwealth of Independent States, principally from Azerbaijan, Kazakhstan, and Russia. At least 16% of French crude petroleum came from Africa; 13%, from Norway; 8%, from Saudi Arabia; 4%, from Iran; and 3%, from Iraq. The remaining 24% came from other sources.

France continued to be a net importer of petroleum products. The country imported 37.46 Mt of petroleum products in 2009, which was an increase of 10.48% compared with that of 2008, and exported 22.45 Mt, which was a decrease of 18.79% compared with that of 2008 (Eurostat, 2010b, p. 2-5, 8).

Structure of the Mineral Industry

Although France continued to maintain state monopolies in a number of sectors of the economy, principally in the energy production and transportation sectors, state ownership of the mineral sector was minimal. In 2009, the French Government maintained partial ownership of the country's electricity-generating and natural gas production and distribution facilities, as well as rail and public transportation systems in most French cities. Table 2 provides data on the major French-owned enterprises that produced metals, industrial minerals, and mineral fuels in 2009.

Commodity Review

Metals

Aluminum.—In 2009, France's output of primary aluminum decreased by 11.3%, and that of secondary aluminum decreased by 34% (table 1). Rio Tinto Ltd. was the country's sole producer of primary aluminum. Rio Tinto also operated facilities for the production of alumina and aluminum semimanufactures. At the end of 2008, Rio Tinto closed the Gardanne refinery and ceased production of smelter-grade alumina, although it continued to produce specialty alumina at the Gardanne specialty alumina plant (Rio Tinto Ltd., 2010a, p. 84; 2010b).

Cobalt.—Orrion Chemicals Group expected increased demand for cobalt chemicals, and the group's CEO forecasted that the company would be producing at capacity levels by May. Orrion's subsidiary Orrion Chemicals Metalchem (OCM) operated the former Pharmacie Central de France (PCF) facilities which it had purchased in March; OCM expected to recover 80% to 90% of PCF's historical commercial activity in France and to recover its share of the business in the rest of Europe as well (Metal Bulletin, 2009a).

Copper.—Nexans S.A. announced in September that, owing to market conditions, it would close its copper wire rod plant in Chauny. The plant had a production capacity of 300,000 metric tons per year (t/yr) of copper wire (Metal Bulletin, 2009b).

Ferroalloys.—The Brazilian company Vale Group invested $34.7 million in its subsidiary Vale Manganese France S.A., which was located in Dunkerque. The company planned to rebuild the electric arc furnace that had been damaged during the previous summer. The plant had the capacity to produce 140,000 t/yr of ferromanganese. The company did not begin production on the plant until April because of the work on the furnace (Bouet, 2009).

Grupo Ferroatlantica, S.L. of Spain extended the winter shutdown of its French silicon and silicon alloy plants owing to slow demand but resumed operations in April. Ferroatlantica's subsidiary Ferropem S.A. also closed its silicon furnace for an extended winter shutdown of 4 months beginning in December 2008. Ferroatlantica's French production of silicon metal and silicon alloys was expected to be 40% lower in 2009 than in 2008 (Metal-Pages, 2009).

Iron and Steel.—France's output of pig iron decreased by 28.7% to 8.1 Mt, which continued a trend of decreased production. Crude steel production decreased by 28.2% to 12.8 Mt, which also continued the trend toward decreased production (table 1). Crude steel consumption decreased by 31.4%, which was the equivalent of slightly more than 5.6 million metric tons per year (Mt/yr) (World Steel Association, 2010, p. 90).

ArcelorMittal of Luxembourg announced in July that it was restarting its blast furnace in Florange, France. The plant, which had been closed since May owing to low demand from key automobile and construction sector customers, was back in production in August (Reuters, 2009).

Nickel.—Orrion, through OMC, stated that the volatility in the price of nickel had not hampered Orrion's business because the company had been able to pass increased costs on to its customers, thus retaining the profitability in the production of the allotting metal. Orrion also stated that it would produce at capacity at its former PCF operations at Aubenas in the south of France (Metal Bulletin, 2009b).

Industrial Minerals

France produced a broad variety of industrial minerals. In 2009, Imerys S.A., which was a major French producer of industrial minerals, 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 S.A., 2010, p. 8-11).

Cement.—In 2009, cement consumption in France dropped by 15.9% compared with that of 2008 owing to a 7.1% decrease in the total construction sector output. This trend was expected

to continue into 2010 with a further decline in consumption of between 3% and 5%. France's principal cement manufacturers were Lafarge S.A. and Société des Ciment Français, which was 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 important producers of cement in France were the Vicat Group, which had five plants with a total cement production capacity of 6 Mt/yr, and Ciments d'Origny, which had six plants and a total cement production capacity of 4.2 Mt/yr (Cembureau, 2010, p. 7).

Mineral Fuels and Other Sources of Energy

Of the total amount of primary energy consumed by France in 2009, 48.2% was electricity generated by hydroelectric, photovoltaic, thermal electric, nuclear, and wind power facilities, which was a decrease of 5.5% from 2008. Although energy consumption decreased by 5.2%, the consumption of renewable energy increased to 6.2% of total energy consumption in 2009. Nuclear energy accounted for an estimated 94.6% of primary electricity production. The principal sectors that consumed energy in France were the residential sector, which accounted for 44% of the total energy consumption in the country; the transportation sector, 31.9%; the manufacturing industry [as defined by the Institut National de la Statistique et des Études Économiques (INSEE)], 18.7%; the steel industry, 2.7%; and agriculture, 2.6% (Institut National de la Statistique et des Études Économiques, 2010).

Natural Gas and Petroleum.—In 2009, France's domestic production of crude petroleum decreased compared with the output in 2008 by an estimated 6.9%. The production of liquefied petroleum gas decreased by an estimated 2.5%, which continued the trend of a substantial production decline since 2005. Domestic production of petroleum products decreased by about 7.1% in 2008 (the latest year for which production data were available) compared with that of 2007 (U.S. Energy Information Administration, 2010).

Nuclear Energy.—In 2009, France had 59 active nuclear powerplants, which produced 94.6% of the primary electricity in France. Group Areva, which was the French 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 EPR (Evolutionary Power Reactor, or European Pressurized Reactor, as it is known in Europe), had helped the company compete for new construction contracts for nuclear powerplants in France and abroad. Delays in the construction of already contracted reactors, however, had hampered the company's ability to promote the technology to gain new investment contracts.

Construction of the International Thermonuclear Experimental Reactor (ITER) complex began in 2008 in Cadarche in the Provence-Alpes-Côte d'Azur region. The seven participants in the ITER project were China, the EU, India, Japan, the Republic of Korea, Russia, and the United States. The project is based in the toroidal magnetic field (Tokamak) reactor, and seeks to change nuclear power production from nuclear fission-generated energy to fusion-generated energy (International Thermonuclear Experimental Reactor, 2009).

Outlook

France's nuclear industry is expected to continue to grow. Future investment in the development and promotion of the nuclear energy sector is assured by the implicit support of the French Government. France is likely to continue to produce consumer and producer durables and such intermediate products as ferrous and nonferrous metals and semimanufactures, construction materials, and chemicals, although much of its ores and mineral intermediate manufactured goods will continue to be imported. France has made considerable investments in renewable energy, and the share of consumption of total energy provided by renewable energy is expected to grow as the Government, through OSEO, continues to invest and promote this sector. Nuclear energy appears to be the focus of the Government's energy generation strategy for the near future, however.

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TABLE 1
FRANCE: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2005	2006	2007	2008	2009
METALS						
Aluminum:						
Bauxite, gross weight[e, 3]	thousand metric tons	168	168	160	160	160
Alumina, metallurgical, gross weight[e]	do.	200	200	500	592 [r]	348
Metal:						
Primary	do.	540 [r]	442	428	389 [r]	345
Secondary	do.	223 [r]	231 [r]	225 [r]	209 [r]	138
Antimony, metal, including regulus[e]		500	500	500	500	500
Cadmium metal[e]		100	100	50	50	50
Cobalt, metal:						
Powder[e]		500	500	500	500	500
Chloride		280	256	305	310	310 [e]
Gold, mine output, Au content[e]	kilograms	1,500	1,500	1,500	1,500	1,500
Iron and steel:						
Metal:						
Pig iron	thousand metric tons	12,705	13,013	12,425	11,372 [r]	8,104
Ferroalloys, electric furnace:[e]						
Ferromanganese	do.	113 [r]	137 [r]	144 [r]	47 [r]	46
Ferrosilicon	do.	100	100	100	100	20
Silicomanganese	do.	52 [r]	63 [r]	65 [r]	60	54
Silicon metal	do.	75	85	85	85	51
Other	do.	65	60	60	60	60
Total	do.	405 [r]	445 [r]	454 [r]	352 [r]	231
Steel:						
Crude	do.	19,481	19,857	19,252	17,900	12,840
Hot-rolled	do.	16,566	17,028 [r]	16,903 [r]	14,746 [r]	11,382
Lead, refined:						
Primary		--	4,039	--	--	4,640
Secondary		104,979	100,195	88,000 [e]	82,000 [e]	82,000 [e]
Total		104,979	104,234	88,000 [e]	82,000 [e]	86,600 [e]
Nickel, refinery products, Ni content[4]		12,536	13,700	16,400 [e]	13,400 [e]	14,000
Silver:[e]						
Mine output, Ag content	kilograms	700	700	700	--	--
Metal, Ag content of final smelter products	do.	400	400	400	--	--
Tin, secondary[e]		1,500	1,500	1,500	1,500	1,500
Zinc metal, including slab and secondary		210,000	120,000	129,000	118,900	118,000 [e]
INDUSTRIAL MINERALS						
Abrasives, undifferentiated[e]		300	272	272	270	270
Barite, $BaSO_3$ equivalent[e]		75,000	30,000	--	--	--
Cement, hydraulic	thousand metric tons	21,277	22,300 [r]	22,300 [e]	21,400 [r]	18,300
Clays:						
Kaolin and kaolinitic clay (marketable)	do.	293	300 [e]	307	624 [r]	519
Refractory clay, unspecified[e]	do.	15	15	15	15	15

See footnotes at end of table.

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

(Metric tons unless otherwise specified)

Commodity[2]		2005	2006	2007	2008	2009
INDUSTRIAL MINERALS—Continued						
Diamond, synthetic, industrial[e]	thousand carats	3,600	3,600	3,600	3,600	3,600
Diatomite[e]	thousand metric tons	75	75	75	75	75
Feldspar, crude[e]	do.	651 [5]	650	650	650	650
Fluorspar, marketable	do.	53	40 [e]	--	--	--
Gypsum and anhydrite, crude[e]	do.	3,500	3,500	3,500	3,500	3,351 [5]
Kyanite, andalusite, related materials[e]	do.	65	65	65	65	65
Lime, quick and hydrated, dead-burned dolomite[e]	do.	3,400	3,500	4,000	4,000	4,000
Mica[e]		20,000	20,000	20,000	20,000	20,000
Nitrogen, N content of ammonia[e]	thousand metric tons	1,206 [5]	616	800	800	2,970 [5]
Pigments, mineral, natural, iron oxide[e]		1,000	1,000	1,000	1,000	1,000
Phosphates, Thomas slag[e]	thousand metric tons	50	50	50	50	50
Pumice and other natural abrasives[e]	do.	400 [5]	272 [5]	276	270	270
Salt, all sources[e]	do.	6,730 [5]	9,371 [5]	6,140	6,240	6,200
Sodium compounds:[e]						
Soda ash	do.	1,000	1,000	1,000	1,000	1,000
Sodium sulfate	do.	120	120	120	120	120
Stone, sand and gravel:						
Chalk	do.	673	554	583	580 [e]	1,294
Dolomite, crude	do.	974	991	984	980 [e]	777
Granite, crude	do.	255	245	373	370 [e]	403
Limestone, agricultural and industrial	do.	11,590	11,018	11,699	11,700 [e]	8,302
Marble and travertine, crude	do.	121	130	148	150 [e]	150 [e]
Sandstone	do.	33	32	95	95 [e]	109
Slate, crude		5,390	5,703	8,716	8,700 [e]	8,700 [e]
Sand and gravel:[e]						
Industrial sands		5,200	5,200	5,200	5,200	7,442 [5]
Other sand, gravel, and aggregates		165,000	165,000	165,000	165,000	263,530 [5]
Sulfur, all sources[e]		616 [5]	650	650	650	650
Talc, crude[e]	thousand metric tons	416 [5]	420	420	420	420
MINERAL FUELS AND RELATED MATERIALS						
Asphaltic material[e]		20,000	20,000	20,000	20,000	11,675 [5]
Carbon black[e]		200,000	200,000	200,000	200,000	178,777 [5]
Coal, briquets[e]	thousand metric tons	100	100	100	100	100
Coke, metallurgical[e]	do.	4,500	4,500	4,500	4,500	4,500
Gas, natural, marketed	million cubic meters	1,784 [r]	1,840 [r]	1,642 [r]	1,472 [r]	1,444
Petroleum:						
Crude	thousand 42-gallon barrels	7,775	7,604	7,242	7,117 [r]	6,624
Refinery products:						
Liquefied petroleum gas	do.	32,179 [r]	32,167 [r]	30,358 [r]	33,860 [r]	33,000 [e]
Gasoline, all kinds	do.	138,506 [r]	146,709 [r]	142,069 [r]	141,195 [r]	140,000 [e]
Kerosene and jet fuel	do.	43,701 [r]	45,350 [r]	44,293 [r]	44,462 [r]	44,000 [e]
Distillate fuel oil	do.	253,970 [r]	256,043 [r]	259,550 [r]	275,148 [r]	275,000 [e]
Residual fuel oil	do.	76,230 [r]	88,263 [r]	73,803 [r]	73,342 [r]	73,000 [e]
Other products	do.	123,376 [r]	115,858 [r]	115,335 [r]	124,347 [r]	124,000 [e]
Total	do.	667,962 [r]	684,390 [r]	665,408 [r]	692,354 [r]	689,000 [e]

[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 October 30, 2010.
[2]In addition to the commodities listed, France produces germanium from domestic ores, but actual output is not regularly reported.
[3]Reprocessed bauxite not for metallurgical use.
[4]Excludes secondary production from nickel-cadmium batteries.
[5]Reported figure.

TABLE 2
FRANCE: STRUCTURE OF THE MINERAL INDUSTRY IN 2009

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina, metallurgical		Rio Tinto plc	Plant at Gardanne	700
Aluminum		do.	Aluminum smelters at:	
Do.		do.	Saint-Jean-de-Maurienne, Savoie	120
Do.		do.	Pyrenees, Atlantiques Province	115
Do.		do.	Lannemezan, Hautes-Pyrenees	63
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
Cadmium	metric tons	Compagnie Royale Asturienne des Mines	Plant at D'Auby-les-Douai	200
Cement		Four companies, of which the largest are:	80 plants, including:	26,700
Do.		Lafarge S.A.	13 plants, of which the largest (1,160) is located at St. Pierre-la-Cour	9,500
Do.		Société des Ciment Français	9 plants, of which the largest (1,100) is located at Gargenville	7,500
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
Do.		Société Française d'Affinage du Cuivre	Smelter at Carrieres-sous-Poissy	11
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. (Ferroatlantica, 100%)	Plants at Anglefort, Laudun-L'ardoise, Petit-Coeur, Gavet, and Saint-Julien-Montdenis	148
Gypsum		S.A. de Matériel de Construction	Mine at Taverny	1,500
Iron and steel, steel		AcelorMittal Group	Dunkerque	6,700
Do.		do.	Fos-sur-Mer	4,200
Do.		do.	Florange	3,200
Do.		Usinor Group	Gadrange, Neuves Maisons	8,400
Mica		Denain-Anzin Minéraux S.A. (Imerys Group)	Mine at Ploemeur, Brittany	160
Natural gas	million cubic meters	Société Nationale Elf Aquitaine (SNEA)	Gasfield and plant at Lacq	20,000
Nickel, metal		Société Métallurgia le Nickel (SLN)	Plant at Sandouville	16
Nitrogen, N content of ammonia		Grande Paroisse S.A.	Plant at Grandpuits	390
Petroleum:				
Crude	42-gallon barrels per day	Société National Elf Aquitaine (SNEA)	Paris Basin oilfields	1,000
Refined	do.	Total S.A.	Refineries at Gonfreville and La Mede	446,000
Do.	do. *	Shell-Française	Refinery at Petite Couron	285,000
Do.	do. *	do.	Refinery at Berre	270,000
Do.	do. *	Société Nationale Elf Aquitaine (SNEA)	Refinery at Feyzin	120,000
Do.	do. *	do.	Refinery at Donges	200,000
Do.	do. *	do.	Refinery at Grandpuits	96,000
Do.	do. *	Ineos Group Ltd.	Refineries at Lavera	175,000
Do.	do. *	Esso S.A.	Refineries at Fos-sur-Mer	237,000
Do.	do. *	do.	Refineries at Gravenchon	62,000
Do.	do. *	Cie. Rhenane de Raffinage (CRR)	Refinery at Reichstett	80,000
Salt		Compagnie des Salins du Midi et des Salines de l'Est (Salins Group)	Mines and plants at Algues Mortes, Dax, Salin de Girad, and Varangeville	2,500
Sulfur		Société Nationale Elf Aquitaine (SNEA)	Byproduct from natural gas, Lacq plant	3,000
Talc		Talc de Luzenac S.A. (Rio Tinto plc, 100%)	Trimouns Mine near Ariege, Pyrenees	350
Uranium, U_3O_8	metric tons	Compagnie Général des Matières Nucléaires (Areva S.A., 100%)	Mines at Limousin and Vendee	1,800
Zinc, metal		Umicore Group	Plants at Auby-les-Douai and Calais	220

Do., do. Ditto.

*Correction posted on December 15, 2017.