



2008 Minerals Yearbook

ITALY

THE MINERAL INDUSTRY OF ITALY

By Alberto Alexander Perez

In 2008, Italy's gross domestic product (GDP) amounted to an estimated \$1.849 trillion based on purchasing power parity; this was a slight decrease compared with the GDP in 2007. The country remained the fourth largest economy in the European Union (EU) after Germany, the United Kingdom, and France. Italy's economy was complex and highly developed; industry accounted for about 25.7% of the GDP in 2008, which was a 1% decrease from the previous year. Industrial output as a whole increased by 0.6% compared with output in 2007. Heavy industry had facilities for the production of chemicals and iron and steel for automotive assembly and for machine building and metal working. These sectors continued to be heavily dependent on imported nonfuel and fuel mineral inputs (U.S. Central Intelligence Agency, 2008; Istituto Nazionale di Statistica, 2009, p. 186-194).

Minerals in the National Economy

Italy's mineral industries produced such metals as copper, iron and steel, lead, and zinc, all of which were important materials for the country's manufacturing sector. The raw materials used to produce these and other metals were imported ores and concentrates or were obtained from secondary scrap recovery. The country was also highly dependent on imported mineral fuels, although Eni S.P.A., which was the country's leading petroleum and natural gas company, remained among the 25 leading energy companies in the world in 2008. The Government owned a 30% share of Eni in 2008 (Petroleum Intelligence Weekly, 2009). Italy was a significant world producer of a variety of industrial minerals, which included cement, clays, feldspar, lime, marble, pumice, and sand and gravel.

Government Policies and Programs

The Government plays a significant role in the economy through regulation of ownership of large financial and industrial companies. Privatization and regulatory reform in accordance with EU directives, however, have reduced that role in recent years. Italy's basic mining legislation is mining law No. 1443 of July 29, 1927, which gives ownership of subsoil minerals to the state. The reimbursement of the state by mining concessionaires is regulated by law No. 752 of June 10, 1982. Quarrying operations are regulated by law No. 44 of September 1982.

As a member of the EU, Italy's national environmental policy generally is in full accord with established EU environmental laws and regulations. Such disparities between the two entities as the definition of the term "waste" persisted, however, and affected Italy's ferrous and nonferrous metals scrap sector (Ferrigno, 2003). Environmental issues in Italy were focused on three main problem areas—air pollution from industrial emissions, such as sulfur dioxide; water pollution of coastal and inland rivers from industrial and agricultural effluents; and such natural hazards as avalanches, landslides, land subsidence

in Venice, and volcanic eruptions (U.S. Central Intelligence Agency, 2010).

In the industrial minerals sector, a new legislative decree superseded law No. 748/1984. The new law stipulates that the standards for all domestic Italian mineral fertilizer grades are to be replaced with EU standards. Compulsory registration of fertilizer producers and products is specified in the legislation (Fertilizer Week, 2006).

Production

In 2008, the production of pig iron reportedly decreased by 6% to 10.4 million metric tons (Mt) and the production of crude steel decreased by 4.1% to 30.6 Mt compared with output levels in 2007. During the same period, the output of nonferrous metals was mixed; the estimated production of primary and secondary aluminum increased slightly to 853,900 metric tons (t) and that of copper decreased by about 15.4% to an estimated 24,200 t. Zinc metal production increased to about 107,100 t, or by 4.9% compared with output in 2007. In the industrial minerals sector, the estimated output of cement decreased by about 9.6% compared with that of 2007. Among mineral fuels, natural gas production decreased slightly whereas petroleum production increased by more than 20% to 36.3 million barrels (table 1).

Structure of the Mineral Industry

Private and mixed public and private entities were the principal owners of Italy's mineral industry. Full Government (public) ownership continued mainly in the mineral fuels sector (table 2).

Mineral Trade

In 2008, Italy's imports came mostly from other member countries of the EU (54.1%), China (8.2%) and the United States (4.1%) and were valued at a total of \$419 billion.¹ The country's exports went mostly to EU member countries (58.5%) and the United States (8.7%) and were valued at slightly more than \$388 billion. As a percentage of total exports, the value of fuel and nonfuel minerals constituted about 7.3%, or \$28.5 billion. Fuel and nonfuel minerals, in turn, accounted for more than 18.2% of the total value of imports. Italy's trade surplus for nonmetallic minerals increased by 18.5% compared with that of 2007 whereas the trade deficit for metals and metal products decreased by 31.8% compared with that of 2007 (Istituto Nazionale di Statistica, 2009, p. 453, 440, 441-442).

¹Values have been converted from European euros (€) to U.S. dollars (US\$) at a rate of €0.680=US\$1.00 for 2008.

Commodity Review

Metals

Aluminum and Bauxite and Alumina.—In 2008, Italy's total output of primary and secondary aluminum increased slightly, by about 5,800 t; estimated secondary production remained steady, and primary production increased by 3.2% (table 1). The country's chief producers of alumina and primary aluminum were, in order of volume produced, Rio Tinto-Alcoa Italia S.p.A. and Eurallumina S.p.A. (table 2).

Copper.—KME Group S.p.A. (a major European refiner and fabricator of copper that was headquartered in Florence) conducted its operations in Italy at Barga and at Scrivia under its subsidiary EuropaMetalli Italia S.p.A. Copper and copper semimanufactures were the main products at these locations. Italy imported only small amounts of copper concentrate and relied mainly on imports of copper metal and on scrap recovery for its raw material.

Iron and Steel.—Italy remained a major European producer and consumer of pig iron and crude and finished steels. In 2008, the production of pig iron decreased by about 6% compared with output in 2007 to 10.4 Mt, and the production of crude steel decreased by about 4.1% to 30,600 Mt, which was Italy's highest level of crude steel production ever (table 1). In 2008 (as in 2007), Italy was the third ranked producer of pig iron in the EU after Germany and France and the second ranked producer of crude steel after Germany. Italy's apparent consumption of crude steel continued to rank the country second in Europe (excluding the Commonwealth of Independent States) after Germany (World Steel Association, 2009, p. 9, 17, 19).

Lead and Zinc.—In 2008, Italy's mine output of lead remained static whereas that of zinc metal increased to an estimated 107,100 t. A minor amount of lead and zinc concentrate was produced in Sardinia. Domestic mine production of lead and zinc was not sufficient to meet demand, and the country imported most of its requirements for lead and zinc concentrates. Glencore International AG of Switzerland remained the country's principal processor (smelter and refiner) of lead and zinc (table 2).

Industrial Minerals

In 2008, Italy remained a leading European and global producer of such industrial minerals as pumice (25% of world output), feldspar (25%), bentonite (4%), lime (2%), cement (1.7%), and gypsum (1%) (Crangle, 2009a, b; Miller, 2009; Potter, 2009; van Oss, 2009; Virta, 2009). Domestic resources of several industrial minerals were insufficient to meet domestic demand and had to be imported; these included ball clay and barite (supplied mainly from Ukraine), chamotte (Germany), fluorspar (China), kaolin (the United States), magnesite (Turkey), mica (China), and talc (China) (Wilson, 2007).

Mineral Fuels

Natural Gas and Petroleum.—In 2008, Italy's output of natural gas remained virtually unchanged whereas petroleum production increased by slightly less than 6.3 million barrels compared with production levels in 2007 (table 1). The country was not well endowed with hydrocarbons and imported much

of its total domestic needs of gas and refined oil. Italy's natural gas reserves were estimated to be 16 billion cubic meters, and its petroleum reserves were estimated to be 120 Mt (table 1; BP p.l.c. 2009, p. 6).

Major issues in the oil and gas sector included plans to put the Tempa Rossa oilfield in the southern Apennines into production by 2010; petroleum would be extracted from six wells, of which five had been drilled by 2006. At full capacity, output at Tempa Rossa was expected to amount to about 50,000 barrels per day of petroleum, which would be transported to the Toranto refinery by pipeline. Total S.A. of France held 50% of Tempe Rossa's shares, and Exxon Mobil Corp. of the United States and Royal Dutch Shell p.l.c. of the Netherlands each held a 25% share (Petroleum Economist, 2006).

Outlook

Italy, which is one of the largest EU members in terms of its population and the size of its industrial sector, is expected to continue to be a major consumer and producer of durable goods and to continue to rely on imported and recycled mineral raw materials. Cement and steel production will likely continue to vary in direct relationship with the development of the construction and manufacturing sectors. These sectors were severely affected by the economic slowdown during 2008 and their recovery will be critical for the evolution of the Italian productive sector. The country is likely to continue to rely on major imports of mineral fuels, despite increases in domestic production from new deposits coming onstream in the near term.

References Cited

- BP p.l.c., 2009, BP statistical review of world energy: London, United Kingdom, BP p.l.c., June, 48 p.
- Crangle, R.D., Jr., 2009a, Gypsum: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 72–73.
- Crangle, R.D., Jr., 2009b, Pumice and pumicite: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 126–127.
- Ferrigno, Robert, 2003, A case study on the implementation of EU environmental legislation—Italy: Brussels, Belgium, European Environmental Bureau, March, 4 p.
- Fertilizer Week, 2006, Italy revises fertilizer trade regulation: Fertilizer Week, v. 20, no. 7, May 26, p. 3.
- Instituto Nazionale di Statistica, 2009, Annuario statistico Italiano 2008: Rome, Italy, Instituto Nazionale di Statistica, 876 p.
- Miller, M.M., 2009, Lime: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 92–93.
- Petroleum Economist, 2006, Western Europe—Italy: Petroleum Economist, v. 73, no. 11, p. 40.
- Petroleum Intelligence Weekly, 2009, Petroleum Intelligence Weekly ranks world's top 50 oil companies (2009) in energy intelligence: Petroleum Intelligence Weekly. (Accessed March 3, 2009, at http://www.energyintel.com/DocumentDetail.asp?document_id=245527.)
- Potter, M.J., 2009, Feldspar: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 56–57.
- U.S. Central Intelligence Agency, 2008, Italy, *in* The world factbook: U.S. Central Intelligence Agency. (Accessed November 13, 2009, at <https://www.cia.gov/library/publications/download/download-2008/>.)
- van Oss, H.G., 2009, Cement: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 40–41.
- Virta, R.L., 2009, Clays: U.S. Geological Survey Mineral Commodity Summaries 2009, p. 46–47.
- Wilson, Ian, 2007, Minerals of Italy—Built to last: Industrial Minerals, no. 479, August, p. 32–33.
- World Steel Association, 2009, World Steel in figures 2009, Brussels, Belgium, World Steel Association, 27 p.

TABLE 1
ITALY: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2004	2005	2006	2007	2008 ^e
METALS					
Aluminum:					
Alumina, calcined basis	1,064,000	1,109,457	1,090,000	1,100,000 ^e	1,100,000
Bauxite ^c	--	300	--	--	--
Metal:					
Primary	195,400	192,900	194,200	182,600	188,400 ²
Secondary	619,000	654,100	665,500	665,500	665,500 ²
Total	814,400	847,000	859,700	848,100	853,900 ²
Bismuth, metal ^c	5	5	5	5	5
Copper, metal, refined, all kinds ^c	33,600	32,200	36,400 ²	28,600	24,200
Iron and steel, metal:					
Pig iron	10,664	11,423	11,535	11,100 ^e	10,400 ²
Ferroalloys, electric furnace: ^c					
Ferromanganese	40,000	40,000	40,000	40,000 ^e	40,000
Ferrosilicon	12,000	12,000	10,000	10,000 ^e	10,000
Silicomanganese	100,000	100,000	100,000	100,000 ^e	100,000
Other	10,000	10,000	10,000	10,000 ^e	10,000
Total	162,000	162,000	160,000	160,000 ^e	160,000
Steel, crude	28,317	29,061	31,624	31,990	30,600
Lead:					
Mine output, Pb content ^c	800	800	800	800	800
Metal, refined:					
Primary	40,000	49,500	34,600	47,800	48,000
Secondary	162,000	161,500	155,900	164,000	164,000
Total	202,000	211,000	190,500	211,800	212,000
Manganese, mine output, Mn content ^c	714 ²	600	600	600	600
Silver, mine output, Ag content ^c	200	100	100	100	100
Zinc, metal, primary	118,000 ^e	121,200	109,200	102,100 ^r	107,100 ²
INDUSTRIAL MINERALS					
Barite	9,698	4,722	5,000 ^e	5,000 ^e	5,000
Bromine ^c	300	300	300	300	300
Cement, hydraulic	45,343	40,284	43,234	47,541	43,000
Clays, crude:					
Common clay	3,858	3,651	3,937	3,900 ^e	3,900
Bentonite	475	446	470	470 ^e	470
Refractory, excluding kaolinitic earth	1,375	1,310	1,964	1,960 ^e	1,960
Ball clay	568	539	550	550 ^e	550
Fuller's earth ^c	3	3	3	3	3
Kaolin	247	250 ^e	470	470 ^e	470
Diatomite ^c	25,000	25,000	25,000	25,000	25,000
Feldspar	3,251	3,335	4,019	4,727	4,700
Fluorspar	17,915	15,000	15,000 ^e	--	--
Gypsum	1,616	2,356	2,860	5,458	5,450
Lime, hydrated, hydraulic, and quicklime	5,982	5,894	5,800 ^e	6,000 ^e	6,000
Magnesia	350	371	348	765	765
Nitrogen, N content of ammonia	532	525	500 ^e	460	460
Perlite ^c	60,000	60,000	60,000	60,000	60,000
Pigments, mineral, iron oxides, natural ^c	500	500	500	500	500
Pumice and related materials:					
Pumice	27	28	30 ^e	30 ^e	30
Pozzolan ^c	4,000	4,000	4,000	4,000	4,000

See footnotes at end of table.

TABLE 1—Continued
ITALY: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity	2004	2005	2006	2007	2008 ^e
INDUSTRIAL MINERALS—Continued					
Salt thousand metric tons	3,174	3,613	3,438	2,214	2,200
Sand and gravel do.	176,252	206,149	210,000 ^e	210,000 ^e	210,000
Silica sand do.	12,791	13,492	14,000 ^e	14,000 ^e	14,000
Sodium compounds, n.e.s.: ³					
Soda ash do.	505	525	500 ^e	500 ^e	500
Sodium sulfate ^e do.	125	125	125	125	125
Stone:					
Calcareous:					
Alabaster ^e do.	7,215 ²	7,000	7,000	7,000	7,000
Chalk do.	330	312	228	230 ^e	230
Dolomite do.	2,213	2,092	2,192	1,726	1,700
Marble and travertine, crude do.	5,155	5,061	4,687	4,643	4,600
Limestone for lime and cement do.	40,000	42,390	41,255	32,953	32,900
Granite do.	2,637	2,651	1,894	1,477	1,480
Sandstone do.	369	362	400	400	400
Slate do.	143	138	220	288	290
Crushed and broken ⁴ do.	54,195	61,640	60,000 ^e	60,000	60,000
Sulfur:					
From metallurgy do.	113	92	90 ^e	90	90
From hydrocarbons do.	575	650	650 ^e	650	650
Talc and related materials	111,887	112,781	146,942	112,080	112,000
MINERAL FUELS AND RELATED MATERIALS					
Asphalt and bituminous rock, natural thousand metric tons	1,807	1,900	1,807	1,810 ^e	1,800
Coke, metallurgical ^e do.	4,500	4,000	4,000	4,000	4,000
Gas, natural million cubic meters	12,961	11,977	11,000	8,900 ^e	8,400
Natural gas liquids ^e thousand 42-gallon barrels	350	350	350	350 ²	350
Petroleum:					
Crude:					
As reported	5,445,000	6,100,000	5,800,000	5,900,000 ^e	7,209,000 ²
Converted thousand 42-gallon barrels	27,670	31,110	29,600 ^e	30,012	36,300
Refinery products ^e do.	650,000	650,000	650,000	650,000	650,000

^eEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown. ¹Revised. do. Ditto. -- Zero.

¹Table includes data available through March 31, 2009.

²Reported figure.

³Not elsewhere specified.

⁴Includes limestone and serpentine for dimension stone.

TABLE 2
ITALY: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Alumina	Eurallumina S.p.A. (United Company RUSAL, 56.2%)	Plant at Portoscuso, Sardinia	1,000
Aluminum	Alcoa Italia S.p.A. (Alcoa Inc., 100%)	Smelters at Porto Vesme, Sardinia, and Fusina, near Venice	188
Asbestos	Amiantifera di Balangero S.p.A.	Mine at Balangero, near Turin	100
Barite	Bariosarda S.p.A. (Ente Mineraria Sarda)	Barega and Mont'Ega Mines on Sardinia	100
Do.	Edem S.p.A. (Government)	Mines at Val di Castello, Lucca	20
Do.	Edemsarda S.p.A. (Soc. Imprese Industriali)	Mines at Su Benatzu, Sto. Stefano, and Peppixeddu, Sardinia	20
Do.	Società Mineraria Baritina S.p.A.	Mines at Marigolek, Monte Elto, and Primaluna, near Milan	20
Bauxite	Sardabauxiti S.p.A. (Cogein S.p.A., 40%; Comtec S.p.A., 40%; Icofin Co., 20%)	Mine at Olmedo, Sardinia	350
Bentonite	Industria Chimica Carlo Laviosa S.p.A.	Mines and plant on Sardinia and a plant near Pisa	250
Cement	52 companies, of which the largest are:		
Do.	Italcementi Fabbriche Riunite Cemento S.p.A.	18 plants, of which the largest are Calusco, Monselice, and Colleferro	15,000
Do.	Buzzi Unicem Group	11 plants, of which Guidonia, Lugagnano, Morano, Piacenza, S'Arcangelo di Romagna, and Settimello are the largest	9,000
Do.	Cementerie del Tirreno S.p.A.	6 plants at Arquasta Scivia, Livorno, Maddaloni, Napoli, Spoleto, and Taranto	5,300
Copper:			
Refined	Società Metalli Italia S.p.A.	Refinery at Porto Marghera	60
Refined, secondary	Europametalli - LMI S.p.A.	Refinery at Fornaci di Barga	24
Do.	Sitindustrie S.p.A.	Refinery at Pieve Vergonte	22
Feldspar	At least 5 companies, of which the largest are:	Mines:	1,500
Do.	Maffei S.p.A.	Surface mines at Pinzolo and Campiglia	(200)
Do.	do.	Underground mine at Vipiteno	(300)
Do.	Miniera di Fragne S.p.A.	Surface mine at Alagna Valsesia	(60)
Do.	Sabbie Silicee Fossanova S.P.A.	Surface mine at Fossanova	(30)
Gold	kilograms Sargold Resources plc.	Furtei Mine near Cagliari, Sardinia	1,400
Gypsum	Fassa S.r.l.	Plant at Moncalvo, Asti	90
Lead, metal	Glencore International AG	Refinery at San Gavino, Sardinia	100
Do.	do.	Kivcet smelter and Imperial smelter at Porto Vesme, Sardinia	80
Lignite	Ente Nazionale per l'Energia Electrica	Surface mine at Santa Barbara (closed)	1,000
Lime	Unicale S.p.A.	Plants in Lombardy region	500
Magnesium, metal	Società Italiana Magnesio S.p.A.	Plant at Bolzano	8
Marble	A number of companies, of which the largest include:	Location:	2,000
Do.	Mineraria Marittima Srl	Quarries in the Carrara and Massa areas	(500)
Do.	Industria dei Marmi Vicentini S.p.A.	do.	(300)
Do.	Figaia S.p.A.	do.	(100)
Nitrogen, N content of ammonia	Hydro Agri S.p.A.	Plant at Ferrara	410
Petroleum:			
Crude	Ente Nazionale Idrocarburi	Oilfields offshore Sicily, in the Adriatic Sea, and onshore in Po River Valley	90
Refined	thousand 42-gallon barrels per day do.	About 30 refineries	2,000

See footnotes at end of table.

TABLE 2—Continued
 ITALY: STRUCTURE OF THE MINERAL INDUSTRY IN 2008

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Potash, ore	Industria Sali Otassici e Affini per Aziono S.p.A.	Underground mines at Corvillo, Pasquasia, Racalmuto, and San Cataldo, Sicily (closed)	1,300
Do.	Sta. Italiana Sali Alcalini S.p.A. (Italkali)	Underground mines at Casteltermini and Pasquasia, Sicily	700
Pumice	Pumex S.p.A.	Quarries, Lipari Island, north of Sicily	600
Do.	Sta. Siciliana per l'Industria ed il Commercio della Pomice di Lipari S.p.A. (Italpomice S.p.A.)	do.	200
Pyrite	Nuova Solmine S.p.A.	Underground mines at Campiano and Niccioleta	900
Salt, rock	Sta Italiana Sali Alcalini S.p.A. (Italkali)	Underground mines at Petralia, Racalmuto, and Realmonte, Sicily	4,000
Do.	Solvay S.p.A.	Underground mines at Buriano, Ponteginori, and Querceto, Tuscany	2,000
Steel	Ilva S.p.A. (Riva Group)	5 steel plants, the largest of which (by volume) is Taranto	4,000
Do.	Riva Acciaio S.p.A. (Riva Group)	7 steel plants	7,000
Do.	Acciaierie e Ferriere Vicentine Beltrame S.p.A. (AFV-Beltrame S.p.A.)	Steel plant at Vicenza	1,000
Talc	Luzenac Val Chisone S.p.A.	Mines at Pinerolo, near Turin, and at Orani, Sardinia	120
Do.	Talco Sardegna S.p.A.	Mine at Orani, Sardinia	20
Zinc, metal	Glencore International AG	Plant at Porto Vesme, Sardinia	120
Do.	Pertulosa Sud S.p.A.	Plant at Crotona, Calabria	100

Do., do. Ditto.