

# THE MINERAL INDUSTRY OF IRELAND

By Harold R. Newman

Ireland remained a major European Union (EU) producer of lead and zinc and an important producer of alumina and peat in 2003 (table 1). Zinc production was centered on Anglo American plc's Lisheen lead-zinc mine, Arcon International Resources plc's Galmoy lead-zinc mine, and Outokumpu Oyj's Tara lead-zinc mine; these were three of Europe's most modern mines. Ireland was also one of the leading exporters of lead and zinc. The country's mineral-processing industry was small as was the demand for and consumption of mineral products (table 2).

Ireland has a land area of 70,270 square kilometers. It is bound by Northern Ireland to the northeast, the Irish Sea to the east, and the Atlantic Ocean to the west. In 2003, the gross domestic product (GDP) based on purchasing power parity was \$137 billion, and per capita GDP based on purchasing power parity was \$34,845. The unemployment rate was estimated to be 4.9%, and the annual percent change in inflation, 4% (International Monetary Fund, 2004§<sup>1</sup>).

In the first 6 months of 2003, trade between Ireland and the United States was worth about \$12 billion, which was a 10% decrease compared with the same period in 2002. Irish exports to the United States represented 15% to 20% of all Irish exports. The United States was Ireland's second largest export destination after the United Kingdom (U.S. Commercial Service, 2004§).

Ireland's geology includes several lithological units and tectonic features that are favorable for the occurrence of several types of mineral resources from base metals to industrial minerals. The main focus for exploration and development of Ireland's lead-zinc deposits was the Carboniferous of the Midlands region. The mineralization, which is similar to that of Mississippi Valley-type deposits in the United States, is hosted in strata-bound carbonate units.

The Department of Communications, Marine and Natural Resources provided technical assistance to exploration and mining companies. The Geological Survey of Ireland (GSI) was the national earth science agency and was responsible for providing geologic advice and information and acquiring data for this purpose. The GSI produces a range of products that included maps, reports, and databases. It functions as a line division of the Department of Communications, Marine and Natural Resources.

Ivernia West Inc. announced it had completed the sale of its 50% interest in the Lisheen Mine to Anglo American plc, which became the sole owner in September 2003 with the purchase of Ivernia shares in the joint-venture project. Consideration consisted of \$1.8 million and the assumption by Anglo American of all Ivernia's debt obligations that related to the Lisheen Mine; these included outstanding project loans in the amount of \$37.2 million (Ivernia West Inc., 2003§).

Arcon International announced a resource of 2.3 million metric tons (Mt) at a grade of 19% zinc, 7.2% lead, and 66 grams per metric ton silver in the new R-zone at the Galmoy Mine. This was in addition to the ore reserves of 3.3 Mt at a grade of 11% zinc and 2.1% lead at yearend 2002 (Society of Economic Geologists, 2003).

Industrial mineral production remained relatively constant. Several industrial minerals projects were waiting to be granted planning permissions and mining leases before moving into development and production.

Natural gas production continued from the Ballycotton gasfield off the southern coast of Ireland near Cork. Reserves were not disclosed, and the production from the fields was being carefully managed to extend the life of the fields. Natural gas has been increasingly the fuel of choice in Ireland.

Historically, Ireland has not proven to be a very successful location for natural gas and petroleum exploration. Activity has been hindered by the lack of success and by high cost. The Government has varied the terms for natural gas and petroleum regulations in a bid to provide a boost for exploration projects. The new terms will lead to reduced rental fees and differently determined periods for licensing options (Alexander's Gas & Oil Connections, 2003c§).

Deepwater exploratory drilling appears to have identified a prospective new basin offshore north-western Ireland 125 kilometers (km) northwest of Donegal. Enterprise Energy Ireland plc drilled the Dooish well in 1,478 meters of water and was reported to have penetrated a substantial hydrocarbon column in a tilted fault block and demonstrated for the first time the presence of a working hydrocarbon system in the Rockall Trough (Alexander's Gas & Oil Connections, 2003a§).

General Electric Wind Energy, which was one of the world's leading wind power companies, and Airtricity plc, which was Ireland's largest renewable energy company, reported that construction was underway for the Arklow Bank offshore wind park; this will be Ireland's first offshore wind-powered project. The project is located about 10 km off the coast of Arklow and will consist of seven 3.6-megawatt (MW) wind turbines. This will be the first offshore application of this technology and the first offshore wind project with turbines rated above a 3-MW capacity. The project was expected to generate enough electricity to serve about 16,000 households (Alexander's Gas & Oil Connections, 2003b§).

## Reference Cited

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<sup>1</sup>References that include a section mark (§) are found in the Internet References Cited section.

Alexander's Gas & Oil Connections, 2003b (July 10), GE and Airtricity to build wind farm in Irish Sea, accessed July 11, 2003, at URL <http://www.gasandoil.com/goc/company/cne32892.htm>.

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U.S. Commercial Service, 2004, Ireland, Country Commercial Guide, accessed September 10, 2004, at URL <http://www.buyusa.gov/Ireland/en/121.htm>.

## Major Sources of Information

Department of Communications, Marine and Natural Resources  
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Geological Survey of Ireland  
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TABLE 1  
IRELAND: PRODUCTION OF MINERAL COMMODITIES<sup>1</sup>

(Thousand metric tons unless otherwise specified)

Commodity	1999	2000	2001	2002 <sup>e</sup>	2003 <sup>e</sup>
<b>Metals:</b>					
Alumina <sup>c</sup>	1,300	1,300	1,400	1,200	1,200
Iron and steel, steel, crude	335	342	110	--	--
<b>Lead:</b>					
Mine output, Pb content	43,831	57,825	44,518 <sup>r</sup>	32,486 <sup>r,2</sup>	50,339 <sup>2</sup>
Metal, refined, secondary	12,996	9,000	9,800	12,000	6,600 <sup>2</sup>
Silver, mine output, Ag content	15,300	25,100	22,600	10,000	20,400 <sup>2</sup>
Zinc, mine output, Zn content	226,100	262,877	225,135	252,700 <sup>2</sup>	419,014 <sup>2</sup>
<b>Industrial minerals:<sup>3</sup></b>					
Cement, hydraulic	2,466	2,620	2,500 <sup>e</sup>	2,500	2,500
Gypsum <sup>c</sup>	450	450	500	500	500
Lime <sup>e</sup>	100,000	100,000	100,000	100,000	100,000
Nitrogen, N content of ammonia	401	410	443	400	400
Sand and gravel <sup>e,4</sup>	12,000	12,000	12,000	12,000	12,000
<b>Stone and other quarry products:<sup>e</sup></b>					
Limestone	1	1	1	1	1
Other <sup>5</sup>	35,000	35,000	36,000	36,000	36,000
<b>Mineral fuels and related materials:</b>					
Natural gas, marketed <sup>e</sup>	2,500	2,500	2,500	2,500	2,500
<b>Peat:<sup>e</sup></b>					
For horticultural use	350	400	400	400	400
For fuel use:					
Sod peat <sup>6</sup>	1,600	1,600	1,600	1,600	1,600
Milled peat <sup>7</sup>	4,000	3,500	3,500	3,500	3,500
Total	5,600	5,100	5,100	5,100	5,100
Peat briquets	350	300	300	300	300
<b>Petroleum refinery products:<sup>8</sup></b>					
Liquefied petroleum gas	464	545	500 <sup>e</sup>	500	500
Naphtha	1,046	884	900 <sup>e</sup>	900	900
Gasoline, motor	3,893	4,556	4,500 <sup>e</sup>	4,500	4,500
Distillate fuel oil	7,333	8,415	8,000 <sup>e</sup>	8,000	8,000
Residual fuel oil	7,000	7,639	7,000 <sup>e</sup>	7,000	7,000
Refinery fuel and losses	70	77	75 <sup>e</sup>	75	75
Total	19,806	22,116	21,000 <sup>e</sup>	21,000	21,000

<sup>e</sup>Estimated; estimated data are rounded to no more than three significant digits; may not add to total shown. <sup>r</sup>Revised. -- Zero.

<sup>1</sup>Table includes data available through May 2004.

<sup>2</sup>Reported figure.

<sup>3</sup>Ireland also produces significant quantities of synthetic diamond and is the major supplier to the United States. Output, however, is not quantitatively reported, and general information is inadequate to make reliable estimates of output levels.

<sup>4</sup>Excludes output by local authorities and road contractors.

<sup>5</sup>Includes clays for cement production, fire clay, granite, marble, rock sand, silica rock, and slate.

<sup>6</sup>Includes production by farmers and by the Bord Na Mona (the Government Peat Board).

<sup>7</sup>Includes milled peat used for briquet production.

<sup>8</sup>From imported crude oil.

TABLE 2  
IRELAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2003

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facility	Annual capacity
Alumina	Glencore International AG	Aughinish Island, County Limerick	1,000
Cement	Irish Cement Ltd.	Plants in Limerick and Platin	2,000
Lead-zinc, concentrate	Anglo American plc, 50%; Ivernia West plc, 50%	Lisheen Mine, County Kilkenny	160
Do.	Arcon International Resources plc	Galmoy Mine, County Kilkenny	135
Do.	Outokumpu Oyj	Tara Mine, Navan, County Meath	215
Natural gas	Marathon Oil Corp.	Kinsale Head Field, Celtic Sea	75,000
Nitrogen, N content of ammonia	Irish Fertilizer Industries	Plant at Marino Point	450
Peat	Bord Na Mona (Government Peat Board)	Production mainly in midlands	4,200
Petroleum, refined	Irish National Petroleum Corp. Ltd. (Tosco Corp., 100%)	Whitegate, near Cork	75,000
Steel	Irish Ispat (Ispat International NV)	Haulbowline, near Cork (closed)	500