



2019 Minerals Yearbook

IRELAND [ADVANCE RELEASE]

THE MINERAL INDUSTRY OF IRELAND

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In 2019, Ireland was the sixth-ranked producer of peat in the world, accounting for 5.4% of world production. In 2019, Ireland accounted for 10.8% of Europe's zinc mine output and for 0.95% of the world's zinc mine output, making Ireland the 4th-ranked producer of mined zinc in Europe and the 17th-ranked producer of mined zinc in the world. Ireland also accounted for 3.3% of Europe's lead mine output and for 0.34% of the world's output, making Ireland the 8th-ranked producer of mined lead in Europe and the 27th-ranked producer of mined lead in the world (Department of Communications, Energy and Natural Resources, 2020b, p. 26; Brioche, 2021).

Minerals in the National Economy

In 2019, Ireland's real gross domestic product (GDP) increased by 5.5%, and the nominal GDP was \$379.9 billion.¹ In 2019, the mining and quarrying sector accounted for 0.4% of the total net sales value of products compared with 0.6% in 2018, and basic metals and fabricated metal products, machinery, and equipment accounted for 4.3% of the total net sales value of products, which was the same as in 2018 (Central Statistics Office, 2020b, c).

In 2019, 33 prospecting licenses were granted compared with 120 in 2018. By the end of the year, 542 prospecting licenses, 6 state mining licenses, and 10 state mining leases were active. A prospecting license typically covered about 35 square kilometers, and approximately 25% of Ireland's total land mass was under license. In 2018 (the latest year for which data were available), corporations spent about \$24.7 million on exploration. Lead and zinc remained the principal commodities for exploration in Ireland, although some companies were prospecting and exploring for antimony, barite, copper, diamond, fluor spar, gem minerals, gold, iron, lithium, molybdenum, platinum-group elements (PGEs), silver, tantalum, tin, and tungsten. The Exploration and Mining Division of the Department of Communications, Energy and Natural Resources was responsible for the technical management of the country's mineral licensing and leasing system as well as for promoting the mineral industry (Department of Communications, Climate Action and Environment, 2020a, p. iii, 7, 28; Department of Communications, Energy and Natural Resources, 2020a; 2020b, p. 29).

The value of Ireland's exports in 2019 increased to \$170.9 billion, or by 8.5% compared with those in 2018. Exports of mineral fuels, lubricants, and related materials accounted for \$992.2 million; manufactures of metals, \$839.9 million; nonmetallic mineral manufactures, \$575.6 million; iron and steel, \$211.6 million; and nonferrous metals, \$152.3 million. The value of Ireland's imports in 2019 decreased to \$99.9 billion, or by 3.0% compared with those in 2018. Imports of mineral fuels, lubricants, and related materials accounted for \$6.12 billion;

those of manufactures of metals, \$1.65 billion; iron and steel, \$1.12 billion; nonmetallic mineral manufactures, \$738.0 million; and nonferrous metals, \$678.6 million (Central Statistics Office, 2020a).

Government Policies and Programs

The Minerals Development Act 2017 (2017 Act) regulates exploration and mining of Ireland's mineral resources as well as mine closure and includes provisions that address associated social and environmental effects of mining and mine closure. The 2017 Act, which is a consolidation of previous pieces of legislation, repealed certain provisions of the Minerals Company Act 1941 to 1950, the Minerals Development Acts 1940 to 1999, and other pieces of legislation dating from 1940 through 2006. In 2019, the United Kingdom was in the process of withdrawing from the European Union (a withdrawal process known as "Brexit"), which would result in changes to international taxation policies that could affect Ireland's revenues and international trade in coming years (Geoscience Ireland, 2017; Department of Communications, Energy and Natural Resources, 2020a).

Production

In 2019, the most significant decreases in mineral production were reported for the production of peat (for fuel use), which decreased by 63%; liquefied petroleum gas, 44%; residual fuel oil, 26%; natural gas (marketable), 23%; refinery gains and losses, 17%; peat (briquets), 16%; and gasoline (motor), 15%. The most significant production increases were reported in the production of silver (Ag content of mine output), 36%; and naphtha, 19%. Data on mineral production are in table 1.

Structure of the Mineral Industry

In 2019, there were two operating mining projects in Ireland; they were the Tara lead and zinc mine in Navan, County (Co.) Meath, and the gypsum operation in Co. Monaghan, which included an underground mine at Drummond and an adjacent open pit at Knocknacran. The gypsum mines in Co. Monaghan were owned by Irish Gypsum Ltd. (a subsidiary of Saint Gobain Group of France). The Tara lead and zinc mine was owned and operated by Boliden Tara Mines Ltd. (a subsidiary of Boliden AB of Sweden), and was the largest underground zinc mine in Europe. The mine also produced silver. Another zinc mine, the Galmoy Mine in Galmoy, Co. Kilkenny, ceased production in October 2012. In 2017, the mine was sold to the Tipperary-based company AQS Environmental Solutions and was set to reopen for zinc extraction once the operator, Shanoon Resources Ltd., receives permission to recommence underground mining. Ireland's only crude petroleum refinery was the Whitegate refinery located in Co. Cork, which was owned by Irving Oil Ltd. of Canada, and had a production capacity up to 75,000 barrels per day. Irish Cement Ltd. (wholly owned by CRH)

¹Where necessary, values have been converted from euro area euros (EUR) to U.S. dollars (US\$) at the annual average exchange rates of EUR0.893=US\$1.00 for 2019 and EUR0.848=US\$1.00 for 2018.

had cement operations in Limerick, Co. Limerick, and in Platin, Co. Meath. The plant in Limerick had a kiln that had a capacity of 800,000 metric tons per year, and the plant in Platin had a capacity of 2.8 million metric tons per year (O'Connor, 2018; Boliden Group, 2020, p. 19; Department of Communications, Energy and Natural Resources, 2020b, p. 26, 27; Irish Cement Ltd., 2020a, b; Irving Oil, 2020). Table 2 is a list of major mineral industry facilities.

Commodity Review

Metals

Lead and Zinc.—Based on the 2019 drilling results of the Tara Deep mineralization at the Tara Mine, the inferred mineral resource at this location was estimated to be 22 million metric tons (Mt), which was 4 Mt more than the estimate reported in 2018. However, the mineral reserves decreased by 2.6 Mt to 17.4 Mt owing to work on improving the geologic models for the ore lenses and the design of the stopes. In 2019, Boliden expanded the mine's tailings dam to help prolong the mine's life. According to 2017 predictions, operations at the Tara Mine were expected to end in 2020, but owing to newly identified resources and investments, its projected mine life was extended until 2026. In 2019, Boliden reported that 2.46 Mt of ore at the Tara Mine was processed into metallic mineral concentrates containing lead, silver, and zinc. The amount of concentrates produced increased by 11.9% compared with that in 2018. Although milled volumes increased, lead and zinc production decreased owing to lower ore grades—1.0% lead and 5.2% zinc in 2019 compared with 1.2% lead and 6.3% zinc in 2018 (Kilian, 2017; Raidió Teilifís Éireann, 2017; Boliden Group, 2020, p. 45, 108, 114).

Industrial Minerals

Gypsum.—Irish Gypsum Ltd. extracted gypsum from two sites in southern Co. Monaghan. The company reported that it had extracted approximately 200,000 metric tons of gypsum in 2019 (Department of Communications, Energy and Natural Resources, 2020b, p. 26).

Mineral Fuels and Related Materials

Natural Gas and Crude Petroleum.—Four commercial gas discoveries had been made since exploration began offshore Ireland in the late 1960s—Kinsale Head gasfields (Kinsale Head fields, and surrounding Ballycotton and Seven Heads Fields) in the North Celtic Sea Basin, and the Corrib gasfield in the Slyne Basin. There were also other (approximately 11) crude petroleum, gas, and condensate discoveries, but none of them resulted in commercial development. PSE Kinsale Energy Ltd. (Kinsale), which operated the Kinsale Head fields, also had operated the Southwest Kinsale Field—a natural gas storage field that ceased operations in April 2017 (GeoPublishing AS, 2019; Department of Communications, Climate Action and Environment, 2020b, p. 16, 22; Kinsale Energy Ltd., 2020).

In Ireland, applications and authorizations placed before September 23, 2019, were for the standard lifecycle stages, exploration, extraction, and production of natural gas

and (or) petroleum. After September 23, 2019, applications in the open areas offshore (20% of the total offshore area) were accepted for natural gas exploration only and not for petroleum, and all future licensing rounds in the closed area offshore (80% of the total offshore area) would be for natural gas exploration only and not for petroleum. Applications for exploration could be made at any time in open areas, such as the Celtic Sea and Irish Sea coastal areas, whereas for closed areas, such as the Atlantic Margin, applications for exploration could be made only during the licensing round. All applications and authorizations placed prior to September 23, 2019, would not be affected by the new decision. The decision was accepted by the Government, following the advice from Ireland's Climate Change Advisory Council, which was in line with the Climate Action Plan published by the Government in June. Natural gas, as the lowest-CO₂-emitting fossil fuel, would play a critical role during Ireland's transition to achieve zero carbon emissions by 2050, whereas petroleum exploration would be incompatible with a low carbon future. Although Ireland's offshore was one of the largest in Europe, only one well was drilled in Ireland in 2019 compared with 178 exploration wells drilled in the offshore region of continental Europe in 2018 (Department of Communications, Climate Action and Environment, 2020b, p. 2, 8, 12, 15, 21).

Kinsale anticipated that the Kinsale Head gasfields would come to the end of their productive life in or about April 2020, and the offshore decommissioning of the assets would begin in May 2020. Kinsale Head was the place of Ireland's first commercial natural gas production until the Corrib gasfield started gas production onshore on December 30, 2015, and Kinsale Head had been the only source of gas until the installation of an interconnector pipeline from Scotland in 1993. In 2019, production at the Corrib gasfield was in decline; in October, it operated at 69% of its full production capacity; in the winter of 2019–20, it was expected to operate at 63% of capacity; and in approximately 2030, it was projected to cease operations owing to depletion. The full gross plant production capacity of about 9.9 million cubic meters per day of natural gas was reached by the end of June 2016 (Hart Energy, 2018; Gas Networks Ireland, 2019, p. 2; Mulligan, 2019; Department of Communications, Climate Action and Environment, 2020b, p. 7; Kinsale Energy Ltd., 2020; Vermilion Energy Inc., 2020a, b).

Peat.—In Ireland, peat had been an important fuel, as the country did not have its own petroleum and had a limited supply of gas and coal. Apart from private peat extraction for domestic fuel, most of the peat harvesting in the country was conducted by Bord na Móna PLC, a state-owned company established in 1946, for use in power generation and horticulture. To reduce Ireland's CO₂ emissions, Bord na Móna conducted its last full year of peat harvesting in 2018, followed by a partial harvest in 2019 (Tierney, 2020; Bord na Móna PLC, 2021).

Outlook

The Government of Ireland continues to work actively to attract investments in its mineral industry, as planned in the 2017 Act, and to encourage exploration activities for new gas discoveries. Zinc and lead likely will remain the principal mineral commodities for exploration. Production of mined zinc

and lead will continue as the Tara Mine's lifespan was extended through 2026. The Kinsale Head gasfields and the Corrib gasfield are expected to cease production in 2020 and 2030, respectively. If no new gas discoveries are made offshore Ireland, the country will likely become reliant on imports to fulfill the majority of its gas demand.

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TABLE 1
IRELAND: PRODUCTION OF MINERAL COMMODITIES¹

(Thousand metric tons, gross weight, unless otherwise specified)

Commodity ²	2015	2016	2017	2018	2019
METALS					
Alumina	1,983 ^r	1,967	1,937	1,874	1,893
Lead:					
Mine, Pb content	metric tons	31,300	19,600	17,083	16,100
Refinery, secondary	do.	17,200	18,000	17,500	16,300
Silver, mine, Ag content	kilograms	3,770	1,080	1,340	1,578
Zinc, mine, Zn content	metric tons	236,300	147,800	130,580	131,742
INDUSTRIAL MINERALS					
Cement, hydraulic ^c		2,980 ^r	3,100 ^r	3,200 ^r	3,290
Gypsum, mine ^c		250	250	200	200
Lime ^c		260	250	300	300
MINERAL FUELS AND RELATED MATERIALS					
Natural gas, marketable	million cubic meters	132	2,999	3,090 ^c	3,000 ^c
Peat, fuel use		3,138	2,779	3,185	3,463
Of which, for briquettes		148	183	170	146
Petroleum, refinery:					
Distillate fuel oil	thousand 42-gallon barrels	8,777	8,275	8,594	7,838
Gasoline, motor	do.	5,143	4,709	4,690	5,115
Liquefied petroleum gas	do.	545	499	570	675
Naphtha	do.	247	646	797	297
Residual fuel oil	do.	7,772	7,122	7,364	6,898
Refinery gains and losses	do.	710	630	587	572
Total	do.	23,200	21,900	22,600	21,400

^cEstimated. ^rRevised. do. Ditto.

¹Table includes data available through August 13, 2020. All data are reported unless otherwise noted. Totals and estimated data are rounded to no more than three significant digits; may not add to totals shown.

²In addition to the commodities listed, limestone, seawater magnesia, and significant quantities of synthetic diamond may have been produced, but available information was inadequate to make reliable estimates of output.

TABLE 2
IRELAND: STRUCTURE OF THE MINERAL INDUSTRY IN 2019

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facility	Annual capacity
Alumina		Aughinish Alumina plc (United Company RUSAL, 100%)	Refinery in Aughinish Island, Co. Limerick	1,915
Cement		Irish Cement Ltd. (CRH plc., 100%)	Plants in Co. Limerick and Co. Meath	3,500
Diamond, industrial		Element Six Ltd. (De Beers, 100%)	Plant in Shannon, Co. Clare	NA
Do.		Sandvik Hyperion AB (Sandvik AB, 100%)	Plant in Dublin	NA
Gypsum		Irish Gypsum Ltd. (Saint Gobain Group, 100%)	Mines in Knocknacran and Drummond, Co. Monaghan	NA
Lead, mine, Pb content		Boliden Tara Mines Ltd. (Boliden AB, 100%)	Tara Mine, Navan, Co. Meath	20
Do.		Galmoy Mines Ltd. (AQS Environmental Solutions, 100%)	Galmoy Mine, Co. Kilkenny ¹	NA
Lime		Clogrennane Lime Ltd. (CRH plc., 100%)	Plants in Co. Carlow and Co. Clare	500
Limestone		Roadstone Wood Ltd. (CRH plc., 100%)	Quarry in Tallaght, South Dublin	NA
Magnesia		Premier Periclase Ltd. (RHI Group, 100%)	Plant in Drogheda, Co. Louth	73
Natural gas	million cubic meters	Nephin Energy Holdings Ltd., 43.5%; Equinor Exploration Ireland Ltd., 36.5%; Vermilion Energy Ireland Ltd. (operator), 20%	Corrib gasfield, located off the coast of Co. Mayo	3,600
Do.	do.	PSE Kinsale Energy Ltd. (Petronas Gas Berhad, 100%)	Kinsale Head gasfield, Celtic Sea	200
Peat		Bord Na Mona (Government Peat Board)	Production mainly in the Midlands	4,200
Petroleum, refined	thousand 42-gallon barrels	Irving Oil Whitegate Holdings Ltd. (Irving Oil Ltd., 100%)	Refinery in Whitegate, Co. Cork	27,000
Silver, mine, Ag content	kilograms	Boliden Tara Mines Ltd. (Boliden AB, 100%)	Tara Mine, Navan, Co. Meath	1,600
Zinc, mine, Zn content	do.	do.	do.	150

Do., do. Ditto. NA Not available.

¹Not in operation since 2012. Set to reopen, pending permission to recommence underground mining.