



2023 Minerals Yearbook

**DENMARK, THE FAROE ISLANDS, AND GREENLAND
[ADVANCE RELEASE]**

U.S. Geological Survey, Reston, Virginia: 2025

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World rankings for mineral production, shares of world production, and reserves presented in this chapter are derived from the referenced sources. Production data in this chapter may differ from data in other sources because of differences in the date of reporting.

THE MINERAL INDUSTRY OF DENMARK, THE FAROE ISLANDS, AND GREENLAND

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DENMARK

The Kingdom of Denmark is made up of Denmark and the self-governing territories of the Faroe Islands and Greenland. Denmark had several industrial mineral mines in operation and produced crude petroleum and natural gas in the Danish area of the North Sea; however, metallic mineral resources were limited. In 2023, Denmark was estimated to be the world's second-ranked diatomite (moler) producer, accounting for 18% of the world's production, and sixth-ranked bentonite producer, accounting for 5% of the world's production (table 1; Crangle, 2025; Simmons, 2025).

Minerals in the National Economy

In 2023, Denmark's real gross domestic product (GDP) increased by 1.9%; the nominal GDP was \$404.2 billion. In Denmark, 4,063 people were employed in the mining and quarrying sector, which accounted for 0.13% of the total employment, compared with 4,080 people in 2022. The production sales in the mining and quarrying sector increased to \$4.96 billion¹ (DKK34.16 billion) and accounted for 0.5% of Denmark's total production sales. The gross value-added of the mining and quarrying sector increased to \$4.04 billion (DKK27.82 billion) and accounted for 1.1% of Denmark's total gross value-added. The value of sales in the mining and quarrying sector decreased by 26.6% to \$3.47 billion (DKK23.95 billion) compared with that in 2022; of this value, production of crude petroleum and natural gas accounted for 68.4%, and production of gravel and stone accounted for 19.0% (Statistics Denmark, 2024a–d; World Bank, The, 2024a, b).

Production

In 2023, significant decreases in mineral commodity production were reported for granite, which decreased by 56%; bentonite (including plastic clay), by 34%; diatomite, by 29%; hydraulic cement, by 19%; sand and gravel (unspecified), by 16%; limestone, by 14%; and quartz, by 13%. Data on mineral production are in table 1.

Structure of the Mineral Industry

The Danish mineral industry was mostly privately owned. One of the exceptions was Nordsøfonden, which was a crude petroleum and natural gas company owned by the Danish state and administrated by Nordsøenheden. Nordsøfonden and Nordsøenheden together constituted the Danish State subsurface

resource company. Nordsøfonden, which functioned in the same way as a commercial company, managed the participation of the Danish Government in licenses for the exploration and production of crude petroleum and natural gas. The company could enter into license partnerships with the same rights as other companies, except that it could not be the operator of a licensed facility. Nordsøenheden was an independent state company tasked within the Ministry of Industry, Business and Financial Affairs to administrate Nordsøfonden. Table 2 is a list of major mineral industry facilities (Nordsøfonden, 2024).

Commodity Review

Industrial Minerals

Cement.—Cement production decreased by 19% to 2.03 million metric tons (Mt) in 2023 from 2.51 Mt in 2022. The decrease was owing to lower cement demand and declining construction of residential buildings, although it was partially offset by the cement supply for the construction of the Fehmarn Belt submarine tunnel that would connect Denmark with Germany, which started in 2023. Aalborg Portland A/S was the sole producer of cement in Denmark; the cement factory was located in Rørdal, 4 kilometers (km) northeast of Aalborg, and had a production capacity of 2.1 million metric tons per year of gray (portland) cement and 850,000 metric tons per year of white cement. Aalborg Portland A/S was part of Aalborg Portland Holding A/S, which was owned by Cementir Holding N.V. (table 1; Cementir Holding N.V., 2024a, p. 13–14, 35, 51, 275; 2024b).

Mineral Fuels and Other Sources of Energy

Petroleum and Natural Gas.—In 2023, Denmark produced 21.5 million barrels (Mbbbl) of crude petroleum and 1.3 billion cubic meters of natural gas, which were decreases of 8.8% and 1.3%, respectively, compared with production in 2022. The highest crude petroleum and natural gas production came from the Halfdan field, which produced 7.86 Mbbbl of crude petroleum and 741.4 million cubic meters of natural gas, followed by production from the Dan field, 5.93 Mbbbl of crude petroleum and 320.3 million cubic meters of natural gas. Both fields were owned by the Dansk Undergrunds Consortium (DUC). In 2023, Norwegian Energy Company (Noreco) ASA's board of directors announced the company's name change to BlueNord ASA. BlueNord was a part of the DUC, which was composed of TotalEnergies SE, 43.2%; BlueNord, 36.8%; and Nordsøfonden, 20%. The DUC was operated by TotalEnergies SE (News.cision, 2023; BlueNord ASA, 2024a, b; Danish Energy Agency, 2024a, b).

¹Where necessary, values have been converted from Danish kroner (DKK) to U.S. dollars (US\$) at the annual average exchange rate of DKK6.890=US\$1.00 for 2023.

The redevelopment of the Tyra Field continued in 2023. The Tyra Field, which is located in the northern part of the Danish area of the North Sea and owned by the DUC, had been in operation since 1984 and accounted for approximately 90% of Denmark's natural gas production. The field's operations were shut down in September 2019 for redevelopment and had initially been planned to recommence in July 2022; however, owing to the coronavirus 2019 (COVID-19) pandemic, the restart of operations was delayed until 2024. The redevelopment project would extend the life of the Tyra Field and that of its satellite fields to 2042, when the rights to the concession were due to expire. The peak production after the redevelopment was estimated to be approximately 60,000 barrels per day of oil equivalent, of which approximately two-thirds would be natural gas and one-third petroleum. The redevelopment project was expected to result in production of 2.8 billion cubic meters per year of natural gas. The Tyra Field consisted of two main centers—Tyra East (containing six platforms) and Tyra West (containing five platforms)—which were linked to five unmanned satellite fields, including Harald, Roar, Svend, Tyra Southeast, and Valdemar (table 1; Offshore Technology, 2019; TotalEnergies SE, 2022, p. 84–85; 2023a, p. 29; 2023b; 2024, p. 87; BlueNord ASA, 2024b).

Renewable Energy.—In 2022 (the latest year for which data were available), Denmark produced 51.8% of its electricity from renewable energy (compared with 47.8% in 2021), of which 40% was produced from geothermal means, 33% from wind turbines, and 5% from solar means. Domestic renewable energy production increased by 15.8% compared with that in 2021 (Danish Energy Agency, 2023).

Outlook

The GDP of Denmark is projected to increase by 2.1% in 2024. Crude petroleum and natural gas production in Denmark has decreased in the short term owing to the redevelopment of the Tyra natural gas and oil field. Postponing the date of the operational restart at the Tyra Field by 1 year is likely to result in a shortage of Denmark's natural gas production and require the temporary import of natural gas; however, in 2024, after the redevelopment of the field is completed, Denmark's production is expected to increase significantly. In the years ahead, Denmark is expected to increasingly rely on renewable sources for its energy supply rather than on fossil fuels. Danish production of renewable energy is projected to surpass Denmark's total electricity consumption by 2028 (Offshore Technology, 2022; International Monetary Fund, 2024).

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FAROE ISLANDS

The Faroe Islands are a self-governing administrative division of the Kingdom of Denmark. The Faroe Islands had no significant identified mineral resources, and no commercially viable petroleum reservoirs had been discovered. The latest petroleum exploration licensing round was in 2019. The Faroe Islands' exports were mainly from the fisheries sector, which in terms of value, accounted for 81.0% of the territory's total exports in 2023. The Faroese Geological Survey (Jarðfeingi) manages, researches, advises, and educates about crude petroleum, energy, and geological natural resources and is responsible for the administrative tasks related to the exploration and production activities of hydrocarbons in the Faroe Islands. It operates under the Ministry of Environment, Industry and Trade (Faroese Geological Survey [Jarðfeingi], 2024a, b; Nordic Statistics, 2024).

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GREENLAND

Greenland is a self-governing administrative division of the Kingdom of Denmark. Greenland is the biggest island in the world, with 81% of its land covered in ice. Greenland has a variety of mineral resources, such as coal, copper, gold, graphite, ilmenite, iron ore, lead, molybdenum, nickel, precious stones, rare-earth elements, silver, titanium, uranium, and zinc. Greenland also has hydropower and possibly crude petroleum and natural gas resources. In 2022 (the latest year for which precise data were available), there were 16 prospecting licenses, 84 exploration licenses, 7 mining licenses, and 34 small-scale mining licenses granted for a wide variety of minerals; in 2023, these numbers stayed approximately the same. Greenland had two active mines: the White Mountain anorthosite (feldspar) mine, and the Aappaluttoq corundum mine (Ministry of Mineral Resources and Justice, 2023a; Government of Greenland, 2024a, b; Kleemann, 2024, p. 4; Ministry of Business, Trade, Mineral Resources, Justice and Gender Equality, 2024b).

To develop the mineral industry in Greenland and attract foreign exploration companies, the Greenland Ministry of Mineral Resources approved “Greenland’s Mineral Strategy 2020–2024.” The document focused on five areas: improved sharing of geologic knowledge; efficient, predictable, and transparent administration; simplified transition from exploration to mining; sustainable development of the mineral resources industry; and competitive tax and royalty model. The strategy replaced the former “Oil and Mineral Strategy 2014–2018” and provided an updated framework for the

development of the mineral resources industry in Greenland to enable it to become a more competitive mining region. In 2023, the Government carried out several geoscientific projects that were aimed at promoting the economic potential of and increasing the knowledge of the geology of Greenland (Ministry of Mineral Resources, 2020, p. 5, 8; Ministry of Business, Trade, Mineral Resources, Justice and Gender Equality, 2024a).

Production

Data on mineral production are in table 1.

Structure of the Mineral Industry

Table 2 is a list of major mineral industry facilities.

Commodity Review

Industrial Minerals

Feldspar.—Lumina Sustainable Materials A/S (formerly Hudson Greenland A/S), a subsidiary of Hudson Resources Inc. of Canada, was operating the Qaqortorsuaq White Mountain anorthosite (calcium feldspar) mine, which was the only active mine in Greenland. The White Mountain anorthosite refined product was trademarked as GreenSpar. The White Mountain Mine is located approximately 80 km southwest of Kangerlussuaq in southwestern Greenland and was estimated to have a mine life of 100 years. The deposit is anorthosite that can be used as a substitute for kaolin and nepheline syenite and is primarily composed of silicon (47%), aluminum (32%), and calcium (15%). In Greenland, aluminum was not produced from anorthosite owing to energy costs and chemical requirements (Mining Technology, 2019; Hudson Resources Inc., 2022, 2023a, b; Ministry of Mineral Resources and Justice, 2023b; Lumina Sustainable Materials A/S, 2024).

In 2021, Lumina Sustainable Materials A/S shipped production test materials to potential customers on three continents. In November 2022, 8,000 metric tons of anorthosite was shipped to a customer in Europe, who had purchased several shipments of anorthosite in continuously increasing quantities. In 2023, feldspar production continued to increase and was expected to undergo stable growth in 2024 (Ministry of Mineral Resources and Justice, 2022, 2023b).

Gemstones.—Greenland Ruby A/S, which was the owner of the Aappaluttoq corundum mine near Qeqertarsuaq in southwestern Greenland, began extracting hard rock and separating out rubies and pink sapphires onsite in May 2017. In 2019, the company started to release its gemstone to the market. In December 2022, the mine was shut down and the company focused on inventory sales. The mine was expected to reopen in 2025. The mine had an estimated life of at least 10 years (Greenland Minerals Authority, 2019; Bates, 2023; Greenland Ruby A/S, 2024).

Outlook

The Government of Greenland has conducted several mineral resource assessments throughout the ice-free land mass of Greenland, recognizing the potential to diversify the island’s

economy through mineral extraction. The implementation of “Greenland’s Mineral Strategy 2020–2024” and the receding ice that was exposing Greenland’s rich mineral resources, which are still largely unexplored, are expected to continue to attract foreign investors. The number of granted licenses is expected to continue to increase throughout the ice-free parts of Greenland, and the mineral industry is likely to become one of the leading industrial sectors on the island in the future (Ministry of Mineral Resources, 2020).

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TABLE 1
DENMARK AND GRRENLAND: PRODUCTION OF MINERAL COMMODITIES¹

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

Locality and commodity		2019	2020	2021	2022	2023
DENMARK ²						
Cement, hydraulic		2,250	2,490	2,670	2,510	2,030
Clay:						
Bentonite, including plastic clay		434	433	329 ^r	447 ^r	297
Other		790	948	886 ^r	623	676
Diatomite ³		400	423	444	528	375
Natural gas	million cubic meters	3,045	1,396	1,322	1,313	1,296
Peat, including sphagnum	metric tons	91,000 ^r	145,000 ^r	145,000 ^r	116,000 ^r	122,000
Petroleum:						
Crude	thousand 42-gallon barrels	36,867	26,077	24,040	23,567	21,482
Refinery	do.	56,034	51,937	54,917	52,858	54,599
Sand and gravel, industrial, quartz		600	740	840	770	669
Stone, sand, and gravel, construction:						
Sand and gravel, unspecified		38,200 ^r	42,700 ^r	42,800 ^r	41,100 ^r	34,400
Stone, size and shape unspecified:						
Chalk		241	214	230	352	350 ^c
Granite		216	162	430	428	189
Limestone		4,000 ^r	4,430 ^r	4,630 ^r	4,180	3,590
Sulfur, byproduct, natural gas and petroleum, S content	metric tons	3,554	4,140	4,090	3,717	4,000 ^c
GREENLAND						
Feldspar, anorthosite	metric tons	17,000	20,000 ^c	30,000 ^c	NA	NA
Gemstone, corundum:						
Ore	kilograms	15,614,500	NA	NA	NA	--
Sorted, untreated	do.	1,279	NA	NA	NA	--

^cEstimated. ^rRevised. do. Ditto. NA Not available. -- Zero.

¹Table includes data available through October 22, 2024. All data are reported unless otherwise noted. Estimated data are rounded to three significant digits.

²In addition to the commodities listed, kaolin, lime, salt, and semimanufactured steel may have been produced, but available information was inadequate to make reliable estimates of output.

³Data represent Denmark's extracted moler.

TABLE 2
DENMARK AND GREENLAND: STRUCTURE OF THE MINERAL INDUSTRIES IN 2023

(Thousand metric tons unless otherwise specified)

Locality and commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
DENMARK				
Cement:				
Gray		Aalborg Portland A/S [Aalborg Portland Holding A/S (Cementir Holding N.V.)]	Plant at Rørdal	2,100
White		do.	do.	850
Chalk (calcium carbonate)		Dankalk K/S [Dansk Landbrugs Grovvarereselskab (DLG) A/S, 56%; Omya A/S, 44%]	Quarries at Aggersund and Mjels	450 ^e
Diatomite (moler)		Imerys Industrial Minerals Denmark A/S (Imerys Group)	Quarries on Fur and Mors Islands	580
Do.		Skamol Group	Plant at Fur Island	NA
Lime		Dankalk K/S [Dansk Landbrugs Grovvarereselskab (DLG) A/S, 56%; Omya A/S, 44%]	Quarries at Aggersund and Mjels	NA
Natural gas	million cubic meters	Dansk Undergrunds Consortium (DUC) [TotalEnergies SE, 43.2% (operator); BlueNord ASA, 36.8%; Nordsøfonden, 20.0%]	Dan Field	280 ^e
Do.	do.	do.	Halfdan Field	810 ^e
Do.	do.	do.	Tyra Field in the North Sea ¹	2,800
Petroleum:				
Crude	allon barrels per day	do.	13 fields in the North Sea, including:	95,000 ^{e, 2}
Do.	do.	do.	Dan Field	1,700 ^e
Do.	do.	do.	Halfdan Field	2,600 ^e
Do.	do.	do.	Tyra Field ²	20,000
Do.	do.	INEOS Energy A/S	South Arne Field in the North Sea	1,100 ^e
Refined	do.	Kalundborg Refinery A/S (Klesch Group, 100%)	Refinery at Kalundborg	107,000
Do.	do.	PL ESG Denmark Co APS (Postlane Partners, 100%)	Refinery at Fredericia	63,000
Salt		Dansk Salt A/S	Plant at Mariager	600
Steel, semimanufactures		NLMK DanSteel A/S (NLMK International B.V., 100%)	Plant at Frederiksværk	550
GREENLAND				
Feldspar		Lumina Sustainable Materials A/S ³ (Hudson Resources Inc., 31%)	Mine and plant at White Mountain (Qaqortorsuaq)	200
Gemstone:				
Ruby		Greenland Ruby A/S (Rana Mines, 92%; Greenland Venture A/S, 8%)	Aappaluttoq Mine near Qeqertarsuatsiaat	NA
Sapphire, pink		do.	do.	NA

^eEstimated. Do., do. Ditto. NA Not available.

¹The Tyra Field was temporarily shut down for redevelopment in November 2019. Production was expected to recommence in the winter 2023–24.

²Annual capacity listed is the total for the DUC's fields in the North Sea that produce crude petroleum.

³Formerly Hudson Greenland A/S.