2010 Minerals Yearbook

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

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The Mineral Industries of Denmark, the Faroe Islands, and Greenland

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DENMARK

The mining, quarrying, and mineral processing sectors have not traditionally been a driving factor in Denmark's economy. Mineral resources were limited and composed mainly of industrial minerals and mineral fuels, including peat. Denmark's industrialized market economy depended on imported raw materials and foreign trade. Denmark lies directly in the path of European trade by way of the Baltic Sea, the North Sea, and the Skagerrak Strait. Denmark was a member of the European Union (EU) and advocated in 2010 for a liberal trade policy within the EU (U.S. Department of State, 2011).

Private ownership and exploitation of minerals were allowed under Danish law. The permitting procedures for mineral production were developed and administrated at the county level. Regulations concerning the mineral industry were comparable with those of other EU countries (Ministry of Foreign Affairs, 2010).

About two-thirds of Denmark's foreign trade was with EU countries. In 2009 (the latest year for which data were available), EU countries accounted for 71% of Denmark's external trade, and Norway, another 5%. Germany and Sweden were Denmark's leading trading partners. In 2008 and 2009, China was the fourth ranked supplier of goods to Denmark. The United States was Denmark's leading non-European trading partner in 2009 (Statistical Yearbook, 2010, p. 7).

In 2010, U.S. exports to Denmark totaled $2.1 billion and U.S. imports from Denmark totaled 6.0 billion. U.S. exports to Denmark included nonferrous metals (valued at $27.1 million), mineral supplies ($13.5 million), petroleum products ($11.5 million), drilling and oilfield equipment, ($6.1 million), and excavating machinery ($4.9 million), in order of value (U.S. Census Bureau, 2010a).

In 2010, U.S. imports from Denmark included, in order of value, finished metal shapes except steel (valued at $38.4 million), iron and steel manufactures ($30.5 million), fuel oil ($27.7 million), petroleum products ($14.7 million), and bauxite and aluminum ($3.7 million) (U.S. Census Bureau, 2010b).

Production

Denmark lacked economically exploitable reserves of metallic mineral resources; however, it does have reserves of nonmetallic materials, such as chalk; clays, including bentonite and kaolin; lime; peat; salt; and stone, including dimension stone and limestone. Denmark was the only commercial producer of moler, which is a natural mixture of diatomite and smectite clay and was an important ingredient of insulation bricks. The production of natural gas and petroleum from the Danish area of the North Sea was continuing. These mineral fuels were the most valuable mineral commodities domestically. Petroleum production was declining as reserves were being depleted. In 2010, petroleum production fell for the fifth year in a row, dropping from a level of about 125 million barrels (Mbbl) in 2006 to about 90 Mbbl in 2010 (table 1).

Structure of the Mineral Industry

The Danish mineral industry was mostly privately owned. Table 2 is a list of the country's major mineral industry facilities, their capacities, and their locations.

Commodity Review

Industrial Minerals

Cement.—Aalborg Portland A/S (a subsidiary of Cementir Holdings S.p.A. of Italy), was the main producer of grey and white cement in Denmark. Aalborg operated seven kilns at its plant in Rordal, which had a capacity of 2.7 million metric tons (Mt) of grey cement and 850,000 metric tons (t) of white cement. Aalborg was the world's leading manufacturer of white cement, which had a wide range of applications, ranging from the aesthetic uses to highway safety barriers (the cement's whiteness ensures high visibility both day and night) (Aalborg Portland A/S, 2010, p. 3).

Mineral Fuels and Other Sources of Energy

Denmark's petroleum production in 2010 was valued at 40.4 billion Danish kroners (DKK) (U.S. $6.9 billion[1]), and the value of natural gas production was DKK10.6 billion ($1.8 billion) of the total production value (Danish Energy Agency, 2010).

All of Denmark's producing natural gas and petroleum fields are located in the Danish area of the North Sea. In 2010, Denmark had 19 producing fields of various sizes. Production in 2010 came from 283 production wells. Denmark had two refineries—one in Kalundborg and the other in Frederica; the refineries had a total crude distillation capacity of 172,000 barrels per day (bbl/d). The Kalundborg refinery processed primarily Norwegian crude but could process condensates and other crudes as well. The Frederica refinery processed mostly Danish North Sea crude oil that was supplied by pipeline from Danish offshore production. Denmark had been a net exporter of crude oil since the mid-1990s and was expected to remain a net exporter through 2018 (International Energy Agency, 2011).

[1]Where necessary, values have been converted from Danish kroners (DKK) to U.S. dollars (US$) at an average rate of DKK5.84=US$1.00 for 2010.

Geothermal Energy.—A survey by the Geological Survey of Denmark revealed significant supplies of geothermal resources in porous sandstone layers beneath the surface. These resources are related mainly to the Mesozoic succession of the Danish basin and the Fennoscandian Border Zone. This succession is known from about 60 deep wells drilled either for hydrocarbons, geothermal energy, or natural gas storage. Denmark's geothermal plant located at Thisted in northwestern Denmark produced heat from water that was heated to a temperature of 44 °C (111°F) by geothermal processes and pumped from the Upper Triassic Gassum sandstone aquifer at about 1 kilometer (km) depth. The wide distribution of such underground reservoirs made it possible for many of the existing district heating networks to make use of geothermal heat with a high efficiency (Geological Survey of Denmark, 2010).

Outlook

Further exploration of natural gas and petroleum reserves will likely continue in an effort to offset the country's declining production. Continued research in new technology and the testing of new exploration methods are expected to play a major role in Denmark's future natural gas and petroleum production. Denmark is likely to continue to be a net exporter of mineral fuels into the near future. The Government is also likely to continue to consider the introduction of a long-term target, by the year 2050, of becoming fully independent of fossil fuels—a policy which would further encourage greater energy efficiency and growth in renewable energy production.

References Cited

Aalborg Portland A/S, 2010, Annual report: Aalborg Portland Cement A/S, 32 p. (Accessed January 6, 2012, at http://www.aalborgportland.com/media/annual_report/ap_annual_report_2010.pdf.)

Danish Energy Agency, 2010, Value of Denmark's oil and gas production: Danish Energy Agency. (Accessed January 6, 2012, at http://www.ens.dk/en-US/OilAndGas/Economy/valueoilgas/Sider/Forside.aspx.)

Geological Survey of Denmark, 2010, Geothermal exploration and research capacity: Geological Survey of Denmark, 4 p. (Accessed January 7, 2012, at http://www.engine.brgm.fr/web_offlines/conference-launching_Conference_-_Orl%E9ans-France/Sessions/resources-s30-0-GEUS-text.pdf.)

International Energy Agency, 2011, Oil and gas security: International Energy Agency, 20 p.

Ministry of Foreign Affairs, 2010, Denmark in brief: Ministry of Foreign Affairs. (Accessed September 16, 2010, at http://www.denmark.dk/en/menu/About-Denmark/Denmark-In-Brief.)

Statistical Yearbook [Denmark], 2010, External trade—Commodity groups: Statistical Yearbook 2010, 394 p.

U.S. Census Bureau, 2010a, U.S. exports to Denmark by 5-digit end-use code: U.S. Census Bureau. (Accessed January 6, 2012, at http://census.gov/foreign-trade/statistics/product/enduse/exports/c4099.html.)

U.S. Census Bureau, 2010b, U.S. imports from Denmark by 5-digit end-use code: U.S. Census Bureau. (Accessed January 6, 2012, at http://census.gov/foreign-trade/statistics/product/enduse/imports/c4099.html.)

U.S. Department of State, 2011, Denmark: U.S. Department of State background note. (Accessed January 1, 2012, at http://www.state.gov/r/pa/ei/bgn/3167.htm.)

FAROE ISLANDS

The Faroe Islands, which is a self-governing overseas administrative division of Denmark, had no identified mineral resources. The Faroese economy depended on fishing and salmon farming and was aided by a substantial annual subsidy from Denmark. The principal involvement of the Faroe Islands in the international mineral industry was as a market for imported materials, principally cement, fertilizer materials, and fuels.

Possible future discoveries of oil in the Faroese area could make eventual oil production possible along with diversification of the economy. In 2010, the Faroe Islands had the first licensing activity since 2008. Two Faroese companies, Atlantic Petroleum P/F and Faroe Petroleum plc were exploring in the offshore license area 015. The Kùlubokan license (016) was awarded to Statoil ASA (50%) of Norway, DONG Energy of Denmark (30%), and Atlantic Petroleum and Faroe Petroleum (20% combined); the Rannva extension was awarded to Faroe Petroleum (World Oil, 2011).

A group led by the operator Eni Denmark BV spudded in an exploratory well on the Anne Marie prospect off the Faroe Islands on the Atlantic margin. The Seadrill West Phoenix semisubmersible rig was drilling the 6004/8a-1 commitment well in 1,106 meters (m) of water 190 km southeast of Torshavn. It targeted a petroleum prospect in a structural trap of Eocene and Paleocene age (Faroe Islands Review, 2010).

References Cited

Faroe Islands Review, 2010, Explore the Faroe Islands: Faroe Islands Review. (Accessed January 7, 2012, at http:/www.heinesen.fo/faroeislandsreview/.)

World Oil, 2011, Regional report: World Oil. (Accessed January 6, 2012, at http://www.worldoil.com/August-2011-Regional-Report-North-Sea.html.)

GREENLAND

Previously, about one-half of Greenland's revenues came from grants from the Danish Government. This changed when greater independence passed over to the Greenlanders on their national day in 2009. On January 1, 2010, the Inatsisartut (Mineral Resource) Act No. 7 on mineral resources and related activities came into force. The Mineral Resource Act replaced the Consolidation Act No. 368 of June 18, 1998, on mineral resources in Greenland. The Mineral Resource Act establishes the foundation and the framework for future control of mineral resources, including the activities that affect the development of the mineral resources. The Act states that such activities must be performed in accordance with best international practices and must be executed solely with the permission of the Naalakkersuisut (Government of Greenland). Under self rule, which took effect in 2009, Greenland gained specific legal rights and benefits, which included the right to control Greenland's minerals and potential natural gas and petroleum fields (Mining Journal, 2010).

The Catlin Arctic Survey projected that within a decade the Arctic Ocean would be an "open sea" almost entirely free of ice. Ice cover during the northern summer months would have entirely disappeared within 20 years, but most of the decrease would happen before 2020. Mineral resource companies have been among the first to view this as a commercial opportunity. Greenland was also attractive because, despite the high cost of operating in such extreme conditions, it was politically stable (Perth Now, 2010).

Commodity Review

Metals

Gold.—At yearend 2010, Angel Mining plc of the United Kingdom announced that it had begun introducing ore into the process plant at its Nalunaq Mine. When the mine reaches full production in 2012, the Nalunaq Mine was expected to produce about 710 kilograms per year of gold. Angel Mining was planning to minimize transport and refining costs by shipping dore once an optimal quantity had been produced. The first shipment of dore was expected to take place in 2011 (Balashov, 2010).

Nuukfjord Gold Mining Ltd. of Canada announced that it had commenced a drilling and exploration program at its Nuukfjord project. The project included a 20-drill-hole, 4,000-to-5,000-m diamond drill program at the Storo gold deposit. The Storo deposit extended for about 800 m and was open for expansion along strike and down dip. The drilling at Storo would target the thrust zone and test the northward down dip extension of the gold-bearing Main zone. Subsequent drill holes would focus on the deposit's parallel Main and BD zones. Surface prospecting and detailed geologic mapping would be carried out within the Storo and Storo North mineralized trend, which was a 4-km-long gold prospective area, with the goal of defining additional drill targets. Also, Nuukfjord Gold was conducting regional-scale exploration on other areas within the Igasoq, the Isua, and the Qussuk areas, and was targeting numerous showings and geochemical anomalies (Nuukfjord Gold Mining Ltd., 2010).

Lead and Zinc.—Angel Mining was continuing with its exploration and development program to reopen the Black Angel Mine. Contractors had been selected for the development of the mineral processing and waste handling plants as well as the reopening of the Black Angel Mine. Angel Mining was undertaking extensive exploration of its 259-square-kilometer (km^2) license area aimed at the discovery of other lead-zinc deposits thought to be present in the area (International Mining, 2010).

Ironbark Zinc Ltd. of Australia continued its 2010 drilling program that was focused on the development of its base-metals operation. Ironbark Zinc estimated that its Citronen project might host a possible 4.5 billion metric tons of lead and zinc ore. The Joint Ore Reserve Committee (JORC)-compliant resource was calculated as having an estimated indicated resource of 30 Mt grading 0.6% lead and 5.8% zinc, and an estimated inferred resource of 26 Mt grading 0.7% lead and 5% zinc (Ironbark Zinc Ltd., 2010).

Rare Earths.—Greenland Minerals and Energy Ltd. (GMEL) of Australia reported that it had access to what could possibly be the world's largest rare-earth elements (REE) deposit, second only to deposits in China. The Kvanefjeld multi-element project was estimated to have the potential to supply about 25% of the world's requirement for REE. Kvanefjeld was an unusual deposit in that it was enriched with REE, uranium, and zinc. GMEL's permit was issued in accordance with an amendment to the standard terms for exploration licenses that created a framework for the evaluation of mineral deposits that contained uranium. Previously, Greenland had a zero-tolerance approach to uranium mining owing to environmental concerns. GMEL, which was planning to complete its prefeasibility study in 2011 before commencing a final feasibility study, was awaiting final results from the 2010 exploration program (Greenland Minerals and Energy Ltd., 2010).

Hudson Resources Inc. of Canada announced the results from its phase 1 drill program at the Sarfartoq REE project. Drilling in the ST1 zone intercepted wide zones of high-grade REE mineralization. Phase 2 drilling was scheduled to commence at yearend 2010 and would include about 2,000 m of diamond drilling on existing and new targets. The additional drilling was required to better define larger zones of higher mineralization, as it was a complex system. GeoSim Services Inc. of the United States was to complete an independent National Instrument (NI) 43–101-compliant resource estimate of the ST1 zone when the phase 2 exploration is complete (Hudson Resources Inc., 2010).

The Greenland mining company NunaMinerals A/S announced that magnetic and radiometric surveys showed potential for REE in its Qeqertaasaq and Tikiusaaq license areas. At Qeqertaasaq, exploration was focused on locating, sampling, and mapping potential REE-enriched carbonatite dykes in the core of the carbonatite complex. The average grade of 157 samples taken from a 1.5-km^2 area of interest was reported to be 2.4% total rare-earth oxides with a low uranium content. Initial mineralogical testing indicated that the main REE mineral at Qeqertaasaq was a coarse-grained ancylite, which was a relatively easily dissolved REE carbonate. Further metallurgical work was planned on bulk samples (NunaMinerals A/S, 2010b).

At Tikiusaaq, further interpretation of geophysical survey magnetic data raised the prospectively of the area for REE and indicated that the carbonatite dykes continued to a depth of about 500 m. A thorium anomaly, within which all the REE-enriched float samples were located, indicated a separate body about 750 m long and about 100 m wide. The magnetic data also indicated that the carbonatite, which has a twin core structure, could be larger and more complex than previously thought. NunaMinerals expected to carry out further prospecting activities in 2011, including trenching of the target zone to prepare the project for the initial drilling stage (NunaMinerals A/S, 2010c).

Industrial Minerals

Diamond.—In early 2010, NunaMinerals conducted a 2,131-km-long magnetic survey within the Qaamasoq license and a 3,955-km-long magnetic survey within the Tikiusaaq license. These surveys defined new exploration targets for diamond. Further field work revealed a kimberlite float at Qaamasoq and kimberlite dykes at Tikiusaaq. A macle diamond, which is a trigon or triangular diamond crystal, was recovered from the kimberlite float at Qaamasoq. At Tikiusaaq, a micro diamond was recovered from a kimberlite dyke. This was the first discovery of a diamond in the Nuuk region. The dyke was exposed for an area of about 500 m and was traced by ground magnetics for an additional length of about 1 km (NunaMinerals A/S, 2010a).

Gemstones.—True North Gems Inc. announced that the field-related components of the advanced exploration and engineering program had been completed in 2010 at the company's 823-km^2 Fiskenaesset ruby project, which is located on the southwestern coast of Greenland. The prefeasibility study and environmental impact study were completed in 2010. An indicated resource was estimated to be 296 million carats, and an additional inferred resource was estimated to be 109 million carats. In a 30-t sample, individual rubies valued at $3,220 per carat and individual pink sapphires valued at up to $460 per carat were recovered. True North stated that mining could begin as soon as 2013 (True North Gems Inc., 2010).

Olivine.—Minelco A/S of Sweden announced that it was closing its Seqi Mine at Fiskefjord, west Greenland, at yearend 2010. Seqi's closure would remove about 25% of the world's olivine capacity from the marketplace. The Seqi Mine was Minelco's sole olivine producer and ranked second in the world after Norway's North Cape Minerals A/S (Industrial Minerals, 2010).

Mineral Fuels and Related Materials

Natural Gas and Petroleum.—In the Arctic, natural gas and petroleum companies faced high costs, high risks, and lengthy lead times for development. The Arctic resource base is largely composed of natural gas and natural gas liquids, which are significantly more expensive to transport over long distances than petroleum. Also, protecting the environment would be costly. Additional costs might be imposed on future development if a warming of the Arctic region melts the permafrost and turns existing soils into bogs and marshes. Ironically, warmer Arctic temperatures would shrink the ice pack, making it easier and less costly to drill (Rigzone.com, 2010).

The Government awarded seven licenses for exploration and exploitation of natural gas and petroleum in the Greenland part of the Baffin Bay to the following companies: A.P. Maersk Oil AP and DONG Energy ASA of Denmark, GDF Suez S.A. of France, NunaOil A/S of Greenland, Royal Dutch Shell plc of the Netherlands, Statoil ASA of Norway, Cairn Energy plc. of the United Kingdom, and ConocoPhillips Corp. of the United States. The Government had received 17 block applications from 12 international companies. All together, the blocks granted in 2010 cover an area of 70,768 km^2, and the total area under natural gas and petroleum license was 200,000 km^2 (OilVoice, 2010).

Uranium.—The Government amended its standard terms for exploration licenses and has ceased a decades-old ban on uranium exploration to allow for the inclusion of radioactive elements as exploitable minerals for the purpose of evaluating and reporting. This amendment would allow Greenland Mineral's Kvanefjeld and Ram Resources Ltd. of Australia's Motzfeldt projects to proceed to development. Both the projects host thorium and uranium at above-ground levels within the mineralized zone (Swanepol, 2010).

Outlook

Greenland has abundant mineral and natural resources. The global warming trend is expected to continue, opening more area for exploration. New mineral deposits are likely to be discovered as exploration accelerates. Finding hydrocarbons will continue to be very important for Greenland. The political status and the Government's encouragement of mineral resource development is expected to continue to accelerate mineral development.

References Cited

Balashov, Sergel, 2010, Angel Mining begins gold production at Nalunaq mine in Greenland: Minefocus.com. (Accessed November 14, 2011, at http://www.minefocus.com/2010/12/angel-miming-begins-gold-production-at-nalunaq-mine-in-greenland/.)

Greenland Minerals and Energy Ltd., 2010, Greenland backs the Kvanefjeld rare earth uranium project with a green light to advance: Greenland Minerals and Energy Ltd. (Accessed December 20, 2010, at http://www.services.metalseconomics.com/MineSearch/News/News.aspx?type=html&newsID=1008133037.)

Hudson Resources Inc., 2010, Phase two drilling completed on Hudson's rare earth project in Greenland: Hudson Resources Inc. (Accessed September 30, 2010, at http://services.metalseconomics.com/MineSearch/News?News.aspx?type=html&newsID=1008096861.)

Industrial Minerals, 2010, Minelco's Seqi olivine closes after just five years: Industrial Minerals, no., 513, March, p. 12.

International Mining, 2010, Great mines—Greenland: International Mining, November, p. 10.

Ironbark Zinc Ltd., 2010, Feasibility study for Citron project in Greenland on-track in Greenland with key consultants appointed, mobilization completed and extensive drilling underway: Ironbark Zinc Ltd. (Accessed May 24, 2010, at http://www.bourseinvestor.com/bi4/pdfnews/default.asp?d=01066248&F=20100524.)

Mining Journal, 2010, A supplement to Mining Journal—Greenland: Mining Journal, March, p. 3.

NunaMinerals A/S, 2010a, Diamond exploration update: NunaMinerals A/S, 2 p. (Accessed January 14, 2012, at http://www.nunaminerals.com/multimedia/Announcement_2010_18_Diamond_Update.pdf.)

NunaMinerals A/S, 2010b, Qeqertaasaq REE prospect: NunaMinerals A/S. (Accessed January 14, 2012, at http://www.nunaminerals.com/index.dsp?area=191.)

NunaMinerals A/S, 2010c, Tikiusaaq: NunaMinerals A/S. (Accessed January 14, 2012, at http://www. Nunaminerals.com/index.dsp?page=360.)

Nuukfjord Gold Mining Ltd., 2010, Nuukfjord commences drilling at Storo gold deposit: Nuukfjord Gold Mining Ltd. (Accessed June 28, 2010, at services.metalseconomics.com/MineSearch/News/News.aspx?type=html&newsID1008056797.)

OilVoice, 2010, Greenland awards license blocks in Baffin Bay: OilVoice. (Accessed January 23, 2011, at http://www.oilvoice.com/n/Greenland_Awards_License_Blocks_in_Baffin_Bay/1dc1bc3d.)

Perth Now, 2010, Melting ice sparks rush for mineral exploration in Greenland: The Sunday Times [Perth, Western Australia, Australia]. (Accessed July 28, 2010, at http://www.perthnow.com.au/business/news/melting-ice-sparks-rush-for-mineral-exploration-in-greenland.)

Rigzone.com, 2010, Greenland sees hydrocarbons as key to political independence: Rigzone.com. (Accessed August18, 2010, at http://www.rigzone.com/news/article_pf.asp?a_id=97446.)

Swanepol, Esmarie, 2010, Greenland changes rules to allow for uranium exploration: Creamer Media (Pty) Ltd., 2010. (Accessed August 12, 2010, at http://www.miningweekly.com/print-version/greenland-changes-rules-to-allow-for-uranium-exploration-2010-09-10.)

True North Gems Inc., 2010, A new source of rubies on the horizon: True North Gems Inc. (Accessed January 14, 2012, at http://www.truenorthgems.com/upload/pdfs/TNG_Fact_Sheet_-_Greenland.pdf.)

TABLE 1

DENMARK: ESTIMATED PRODUCTION OF MINERAL COMMODITIES[1, 2]

(Metric tons unless otherwise specified)

Commodity		2006	2007	2008	2009	2010
Aluminum metal, secondary		25,000	30,000	25,000	25,000	25,000
Cement, hydraulic		5,499 [r, 3]	21,209 [r, 3]	16,092 [r, 3]	15,780 [r, 3]	16,000
Chalk, calcium carbonate	thousand cubic meters	1,900	1,950	2,000	2,735 [r, 3]	2,600
Clays:[4]						
Bentonite		19,211 [3]	20,093 [3]	22,458 [3]	20,000	20,000
Other		5,000	5,000	5,000	5,000	5,000
Moler, extracted	thousand cubic meters	240	241 [3]	252 [3]	202 [r]	225
Gas:						
Manufactured	million cubic meters	1,500	1,500	1,500	1,500	1,500
Natural	do.	10,304 [3]	9,128 [3]	9,564 [3]	9,600	8,438 [3]
Gold[5]	kilograms	1,500	1,639 [3]	1,518 [3]	1,600	1,600
Lime, hydrated and quicklime		115,000	115,000	115,000	115,000	115,000
Natural gas plant liquids	thousand 42-gallon barrels	48,000	48,000	50,000	53,000	53,000
Nitrogen, N content of ammonia		1,600	1,600	1,600	1,600	1,600
Olivine	thousand metric tons	1,000	1,100	1,100	1,100	1,100
Peat	thousand cubic meters	298,000	242,000	145,000	145,000	145,000
Petroleum:						
Crude[3]	thousand 42-gallon barrels	124,830	113,734	104,573	97,455	90,338
Refinery products:						
Liquefied petroleum gas	do.	1,898 [3]	1,862 [3]	1,314 [3]	1,300	1,300
Gasoline	do.	16,863 [3]	16,608 [3]	16,352 [3]	16,000	16,000
Naphtha	do.	50	50	50	50	50
Jet fuel	do.	4,818 [3]	4,271 [3]	3,942 [3]	3,900	3,900
Distillate fuel oil	do.	24,601 [3]	24,054 [3]	23,068 [3]	23,000	23,000
Refinery gas	do.	1,800	1,800	1,800	1,800	1,800
Residual fuel oil	do.	9,478 [3]	9,125 [3]	8,870 [3]	8,800	8,800
Total	do.	59,500	57,800	55,400	54,900	54,900
Salt, all forms		600,000	600,000	600,000	600,000	600,000
Sand and gravel[3]	thousand metric tons	72,508	68,255	59,937	46,932	46,932
Stone, crushed	do.	372 [3]	410 [3]	384 [3]	312	360
Sulfur, recovered		4,142 [3]	3,896 [3]	3,467 [3]	3,800	3,800

[r]Revised. do. Ditto.

[1]Estimated data are rounded to no more than three significant digits; may not add to totals shown.

[2]Table includes data available through December 31, 2011.

[3]Reported figure.

[4]Denmark was believed to produce kaolin, but data on production were not available.

[5]Production from Greenland.

TABLE 2
DENMARK: STRUCTURE OF THE MINERAL INDUSTRY IN 2010

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies and major equity owners	Location of main facilities	Annual capacity
Cement:				
Grey cement		Aalborg Portland A/S (Cementir Holding S.p.A.)	Plant at Rordal	2,700
White cement		do.	do.	850
Chalk, (calcium carbonate)		A/S Faxe Kalkbrud	Quarries at Stevns and Sigerslev	250
Diatomite (moler)	thousand cubic meters	Dansk Moler Industri A/S (Damolin)	Quarries on Mors and Fur Islands	145
Kaolin		Aalborg Portland A/S	Mine and plant on Bornholm Island	25
Lime		A/S Faxe Kalkbrud (Aalborg Portland Holding A/S)	Plant at Stubberup, near Fakse, on Zealand Island	200
Natural gas	million cubic meters	Maersk Olie og Gas A/S	Roar and Tyra Gasfields, Danish North Sea	2,550
Olivine		Minelco A/S	Seqi Mine, Fiskefjord (closed 2010)	2,000
Petroleum:				
Crude	barrels per day	Dansk Underground Consortium	Dan, Gorm, Rolf, and Tyra, Danish North Sea	127,000
Refined	do.	Statoil A/S	Kalundborg	102,000
Do.	do.	A/S Dansk Shell	Fredericia	70,000
Salt		Dansk Salt I/S	Mine (brine) at Hvornum, plant at Mariager	600

Do., do. Ditto.