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THE MINERAL INDUSTRY OF THE NETHERLANDS

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The Netherlands was an important regional producer of natural gas and petroleum for the European market and played a major role as a transshipment center for mineral products that entered and left continental Europe. In terms of world production, however, it was a modest producer of metallic and nonmetallic minerals and mineral products.

In 2006, the Dutch economy appeared to be coming out of recession, but the recovery continued to be unsteady. The Dutch economy was heavily dependent on international developments. The export, reexport, and import of goods and services together accounted for more than 60% of the gross domestic product (Holland Trade, 2006).

Rotterdam, which was the world's leading container port and a major European transportation hub, remained extremely important as a shipping and storage center. In 2006, a record 378 million metric tons (Mt) of cargo passed through the Port of Rotterdam compared with 370 Mt in 2005. Throughput of incoming and outgoing materials in 2006, in thousand metric tons, included crude oil (99,091), mineral products (45,919), ores and scrap (38,524), and coal (27,604) (Port of Rotterdam Authority, 2006).

Minerals in the National Economy

The raw materials sector was dominated by natural gas and petroleum production, of which about 40% was from offshore. Mining was confined to the extraction of limestone, peat, and sand and gravel by quarrying and solution mining of salt in the eastern and northern areas of the country. Mining and quarrying accounted for about 3.9% of the value of industrial production (Statistics Netherlands, 2006, p. 122.). Downstream activities included chemical and metallurgical industries, which used mainly imported ores and industrial minerals.

Production

The Staatstoezicht op de Minjnen [State Supervision of Mines] (SodM), which is an agency within the Ministerie van Economische Zaken [Ministry of Economic Affairs], oversees the production of minerals in the Netherlands and the Netherlands part of the continental shelf. The agency ensures, by regulatory authority, that mineral production is carried out in a responsible manner.

Production of most mineral commodities did not change significantly in 2006 with the exception of decreases in secondary aluminum and iron and steel. Data on mineral production are provided in table 1.

Structure of the Mineral Industry

The Government continued to be involved in the energy sector through regulations and oversight of petroleum and natural gas operations. The Government also played a large role in the aviation, chemicals, telecommunications, and transportation sectors. Table 2 is a list of major mineral industry facilities in the Netherlands.

Commodity Review

Metals

Aluminum.—Pechiney Nederland NV (PLN), a subsidiary of Alcan Inc. of Canada, was a producer of extrusion billets and of rolled aluminum slabs. PLN had a production capacity of 213,000 metric tons per year (t/yr) of primary aluminum and 230,000 t/yr of aluminum billets and slabs. PLN announced that it would conduct a strategic review of Netherlands operations, including the potential sale of the aluminum smelter in Vlissing, in which it held an 85% interest. Ongoing negotiations had failed to solve the smelter's problem of how to ensure its requirements for a long-term competitive energy supply. Alcan's strategy was to invest primarily in low-operating-cost smelters. At the energy price levels expected, Alcan stated that the future of Alcan's Vlissingen smelter was no longer guaranteed (Pechiney Nederlands CV, 2006).

Iron and Steel.—The proposed acquisition of the Corus Group by Companhia Siderurgica Nacional (CSN) of Brazil could fall within the scope of the European Union's merger regulations according to the preliminary findings of the European Commission (EC). A final decision had not been reached by yearend, however.

CSN was in competition with Tata Steel of India to acquire Corus. In December 2006, CSN made a $9.6 billion bid for Corus. The battle for Corus came at a time of growing consolidation within the global steel industry. A takeover of Corus by either company would create the world's fifth-largest steel group with the capacity to produce 24 million metric tons per year (Mt/yr) of crude steel (Platts, 2006).

Zinc.—Zinifex Limited's zinc smelter at Budel produced a record 235,913 metric tons (t) of zinc in 2006 exclusively from zinc concentrates from Zinifex's Century Mine in Queensland, Australia. Following an expansion that was completed in 2006, the plant had the capacity to produce 260,000 t/yr. To complement the expansion, Ziniflex planned to install a 35-metric-ton (t) zinc alloy induction furnace. Approximately 80% of total product sales was delivered to customers within 300 kilometers of the plant (Zinifex Limited, 2006).

Industrial Minerals

Calcium Carbonate.—Omya Netherlands BV's ground calcium carbonate (GCC) plant at Moerdijk started production in midyear 2005 and continued in 2006. The initial capacity of the plant was 500,000 t/yr. GCC had became the leading filler in the production of wood-free paper of the resulting paper's pure white color and brightness. The marble used to produce the GCC was imported from Omya's mines in Turkey (Industrial Minerals, 2006).

Magnesium Compounds.—Nedmag Industries Mining & Manufacturing BV was Europe's leading producer of high-grade synthetic dead-burned magnesia and other magnesium compounds. Four wells near Veendam produced brine saturated with bischofite, which rendered a very high-quality brine that contained less than 1% by weight of nonmagnesium chloride salts and had a density of 1.3 kilograms per liter. The brines were used for the fabrication of calcium chloride, dead-burned magnesia, and other magnesium compounds (Nedmag Industries Mining & Manufacturing BV, 2006).

Salt.—Akzo Nobel Salt BV's salt production facilities were located in Delfziji and Hengelo. The main materials used to produce the salt were raw brine, steam, and electricity. The raw brine was produced by solution mining in multieffect evaporation plants, and the salt was produced using vacuum salt technology. With a capacity of more than 2 Mt/yr, the Hengelo plant was the leading vacuum salt plant in the world. Akzo Nobel focused on salt for chemical transformation (electrolysis), road salt for de-icing, and dried salt for salt specialties businesses (Akzo Nobel Salt BV, 2006).

Mineral Fuels and Other Sources of Energy

When it came to the supply of energy, the Netherlands was active on the international scene in more than one respect. The country supplied energy to Europe, served as the entrepôt for oil products for the whole of northwestern Europe, and was an advocate for sustainable energy practices. Onshore natural gas reserves and offshore petroleum and gas reserves in the North Sea have allowed the Netherlands to make a significant contribution to the European energy supply. About 40% of production was from offshore. Nederlandse Aardolie Maatschappij BV (NAM), which was owned equally by Esso Netherlands B.V., and Royal Dutch Shell Group produced about 75% of the country's total petroleum, including more than 95% of the onshore production [Mbendi Information Services (Pty.) Ltd., 2006].

The Netherlands' two leading energy companies, Essent BV and Nuon BV, reported that they had reached an agreement to merge and form a new company worth $31.2 billion in equity. Essent and Nuon would hold a 55% and a 45% stake, respectively. The combined company, provisionally named EssenNuon, would be among the 10 leading energy companies in Europe with $17 billion in sales and 5 million customers. The Dutch competition authority, as well as the Provinces and municipalities with shares in the companies, would still have to approve the merger officially (Oil News, 2007).

Natural Gas.—BP plc announced that it intended to sell its exploration, production, and gas infrastructure business in the Netherlands, including its onshore and offshore production assets and its Piek Gas Installatie (PGI) at Alkmaar. BP's assets, onshore and offshore, had a net natural gas production of about 1.8 million cubic meters per day. This sale would not affect BP's other business activities, which comprise energy trading, refining, and marketing of fuels and lubricants.

Petroleum.—Veba Oil Nederland BV had an asset portfolio of equities in 29 onshore and offshore licenses and was the operator of the F2a Hanze oilfield development. The Hanze field was set to become the first oilfield to come into production in the Dutch sector of the North Sea in 10 years. The initial production rate was expected to be about 31,500 barrels per day of oil and would double production in that part of the North Sea (Absoft Ltd., 2006).

Chevron Corp. announced that it was inviting offers for its 31% interest in Netherlands Refining Co. (Nerefco), a 400,000 barrel-per-day facility operated by BP, which owned the other 69%. Chevron stated that it did not view Europe as a core part of its downstream business and was decreasing its holdings. The Nerefco refinery is large in size and has the benefit of deep water access. The refinery had a reconfiguration project underway to increase clean fuels production (Petroleum Economist, 2006).

Renewable Energy.—The first phase of construction on the Egmond aan Zee offshore wind farm was initiated in early 2006. The wind farm, which was located off the Egmond aan Zee coast, would consist of 36 wind turbines with a total capacity of 108 megawatts. On average, the wind turbines would generate enough electricity to meet the needs of 100,000 households in the Netherlands. By yearend 2006, the wind farm was expected to supply the first sustainable electricity to Nuon BV for the Dutch market. The project was expected to cost more than $280 million. Offshore wind energy was expected to be one of the important sources of renewable energy in the Netherlands (Shell Group, 2006).

Outlook

The Port of Rotterdam will continue to be a leading European port, particularly in terms of container traffic, and to play a very important role in the European import and export market. Almost as much cargo is expected to pass through Rotterdam as the numbers two, three, and four ports in Europe—Antwerp, Hamburg, and Marseille—combined. A significant percentage of the cargo coming into the Port was processed at the Port. The Netherlands is expected to continue to be an important exporter of natural gas in the region.

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TABLE 1
NETHERLANDS: PRODUCTION OF MINERAL COMMODITIES[1]

(Metric tons unless otherwise specified)

Commodity[2]		2002	2003	2004	2005	2006[e]
METALS						
Aluminum, metal:						
Primary		284,000	277,900	326,300	340,700 [r]	312,300 [3]
Secondary[e]		120,000	50,000 [3]	50,000	50,000	30,000
Cadmium, metal, primary		485	495	572	575	570
Iron and steel:						
Ore, sintered, from imports[e]		3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Metal, pig iron, including blast-furnace ferroalloys (if any)		5,367,000 [r]	5,846,000 [r]	6,011,000 [r]	6,031,000 [r]	5,417,000 [3]
Steel:						
Crude		6,117,000	6,587,000	6,848,000	6,919,000 [3]	6,372,000 [3]
Semimanufactures		5,511,000 [r]	5,870,000 [r]	6,285,000 [r]	6,134,000 [r]	6,394,000 [3]
Lead, metal, refined, secondary[e]		22,000	22,000	20,000	17,000 [3]	17,000
Zinc, metal, primary		203,400	222,700	228,100	231,800 [3]	235,913 [3]
INDUSTRIAL MINERALS						
Cement, hydraulic[e]	thousand metric tons	3,085 [r, 3]	2,450 [r]	2,380 [r]	2,400 [r]	2,400
Magnesium compounds:[e]						
Chloride		25,000	25,000	25,000	25,000	25,000
Oxide		10,000	10,000	10,000	10,000	10,000
Nitrogen, N content of ammonia[e]	thousand metric tons	2,053 [3]	1,750 [e]	1,970	1,700	1,800
Salt, all types[e]	do.	5,000	5,000	5,000	5,000	5,000
Sand, industrial[e]	do.	15	15	15	15	15
Sodium compounds, n.e.s.:[e, 4]						
Carbonate, synthetic		350,000	350,000	350,000	350,000	350,000
Sulfate:						
Natural		20,000	20,000	20,000	20,000	20,000
Synthetic		15,000	15,000	15,000	15,000	15,000
Sulfur:						
Elemental byproduct:						
Of metallurgy		124,000	131,000	137,000	135,000	130,000
Of petroleum and natural gas		373,000	408,000	410,000	400,000	400,000
Total		497,000	539,000	547,000	535,000	530,000
Sulfuric acid, anhydrous, H_2SO_4[e]		1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
MINERAL FUELS AND RELATED MATERIALS						
Coke, metallurgical[e]		2,300,000	2,300,000	2,200,000	2,200,000	2,200,000
Gas, dry natural:						
Gross	million cubic meters	89,111 [r]	85,714 [r]	101,099 [r]	83,498 [r]	84,000
Marketed[e]	do.	74,000	74,000	74,000	74,460 [r]	73,300 [3]
Natural gas liquids[e]	thousand 42-gallon barrels	160,000	160,000	160,000	160,000	160,000
Petroleum:						
Crude	do.	16,790	17,134 [r]	15,564 [r]	11,858 [r]	11,426 [3]
Refinery products:						
Liquefied petroleum gas	do.	54,093	55,443	55,000 [e]	53,118 [r]	55,000
Gasoline, motor	do.	133,225	132,933	130,000 [e]	120,278 [r]	130,000
Naphtha and white spirit	do.	90,000 [e]	90,000 [e]	90,000 [e]	90,000 [e]	90,000
Kerosene and jet fuel	do.	52,451	56,466	55,000 [e]	58,772 [r]	55,000
Refinery fuel and loss	do.	25,879	27,046	30,000 [e]	30,000 [e]	30,000
Diesel oil	do.	146,073	155,086	150,000 [e]	157,563 [r]	150,000
Residual fuel oil	do.	81,979	79,862	80,000 [e]	79,771 [r]	80,000
Unspecified	do.	161,146	179,653	175,000 [e]	211,993 [r]	200,000
Total	do.	744,846 [r]	776,489 [r]	765,000 [e]	801,495 [r]	790,000

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

[1]Table includes data available through October 2007.

[2]In addition to the commodities listed, the Netherlands produced limestone, peat, and construction materials, such as sand and gravel, but output was not reported and no basis exists to make reliable estimates of production.

[3]Reported figure.

[4]Not elsewhere specified.

TABLE 2
NETHERLANDS: STRUCTURE OF THE MINERAL INDUSTRY IN 2006

(Thousand metric tons unless otherwise specified)

Commodity	Major operating companies and major equity owners	Location of main facilities	Annual capacity
Aluminum:			
Primary	Pechiney Nederland NV (Alcan Inc., 85%)	Plant at Flushing (Vlissingen)	213
Do.	Corus Group	Smelter at Delfzijl	100
Billets	Pechiney Nederland NV (Alcan Inc., 85%)	Plant at Flushing (Vlissingen)	230
Secondary	Alumax Recycling BV	Smelter at Kerkade	50
Cadmium metric tons	Budel Zinc BV (Ziniflex Ltd.)	Plant at Budel-Dorplein	650
Calcium carbonate, ground	Omya Netherlands BV	Plant at Moerdijk	500
Cement	Eerste Nederlandse Cement Industrie NV	Ten plants at Maastrict	2,700
Do.	Cementfabriek IJmuiden BV	Three plants at Ijmuiden	1,600
Do.	Cementfabriek Rozenburg BV	Two plants at Rozenburg	920
Lead	Hollandse Metallurgische Industrie Billiton BV	Electrolytic plant at Arnhem	35
Do.	Billiton Witmetaal BV	Electrolytic plant at Naarden	6
Limestone	Ankerpoort NV (Lhoist SA, 100%)	Mines at Maastricht and Winterswijk	600
Magnesia	Nedmag Industries Mining & Manufacturing BV	Plant at Veendam	130
Do.	MAF Magnesite BV	Plant at Schiedam	40
Natural gas million cubic meters	Nederlandse Aardolie Maatschappij BV (NAM)	Groningen, Leeuwarden, Assen, and other onshore gasfields and several offshore wells in the North Sea	225
Petroleum, crude 42-gallon barrels per day	Amoco Inc., Conoco Inc., and Unocal Inc.	766 wells (204 producing), including North Sea fields: Haven, Helder, Helm, Hoorn, Kotter, Logger, and Rijn	83,500
Do. do.	Nederlandse Aardolie Maatschappij BV (NAM) (Exxon Mobil Corp., 50%)	Onshore fields: Berkel, DeLier, Ijselmonde, Meerkapelle, Pernis, Pinacke, Rotterdam, Schoonebeck, West, Werkendam, and Zoetemeer	20,500
Do. do.	Veba Oil and Gas Netherlands BV	Hanze field, North Sea	31,500
Refineries	Six companies, of which the major ones are:	Refineries	1,230,500
		Of which:	
	Netherlands Refining Co. (BP plc, 69%; and Chevron Corp., 31%)	Rotterdam	(446,000)
	Shell Nederland Raffinaderij BV	Pernis	(374,000)
	Esso Nederland BV	Rotterdam	(175,000)
	Total Raffinaderij Nederland NV	Vlissingen	(150,000)
Salt	Akzo Nobel Salt BV (Akzo Nobel NV, 100%)	Mines	4,100
		Of which:	
		Hengelo	(2,100)
		Delfzijl	(2,000)
Sand, silica	Sigrano Nederland NV (Sibelco Group)	Mines and plants at Heerlin and Maastricht	500
Do.	Lieben Minërals BV	Mines at South Limburg	150
Sodium:			
Carbonate, synthetic	Brunner Mond Group	Plant at Delfzijl	380
Sulfate, synthetic	do.	do.	600
Steel	Corus Group	Plant at Ijmuiden	7,000
Zinc	Budel Zinc BV (Ziniflex Ltd.)	Plant at Budel-Dorplein	260