THE MINERAL INDUSTRY OF

THE NETHERLANDS

By Harold R. Newman

In terms of world production, the Netherlands was a modest producer of metallic, nonmetallic minerals, and mineral products; it was very important as a regional producer of natural gas and petroleum for the European market and plays a major role as a transshipment center for mineral materials entering and leaving continental Europe.

Rotterdam, the world's largest container port and a major European transportation hub, remained extremely important as a shipping and storage center. With the ever-expanding inland transportation systems, goods entering or leaving Rotterdam originated in or were destined for almost anywhere in continental Europe. The facilities at Rotterdam and surrounding area, however, could not accommodate a significant increase in traffic without upgrading and expansion.

Environmental policy in the Netherlands is the responsibility of the Ministry of Housing, Planning, and the Environment, and protecting and upgrading the quality of the environment is of high priority to the citizens of the Netherlands. In addition to protecting the environment, the Dutch Government was also concerned with remedying the practices of the past. One interesting feature of Dutch environmental policy was the use of "covenants," which were voluntary agreements between industry and Government, and sometimes other organizations, to work together to achieve certain environmental goals, such as the reduction of waste.

Production of mineral commodities generally remained the same or dropped slightly during 1997. The high cost of social benefits contributed to the production costs of Dutch products, thus making them less competitive on the world market. The Government had reduced its role in the economy since the 1980's, and privatization continued with little debate or opposition. Nevertheless, the state dominated the energy sector and played a large role in transport, chemicals, aviation, telecommunications, and steel. *(See table 1.)*

The Netherlands was one of the top trading countries in the world and depended heavily on foreign trade. The country maintained a commitment to an open market and free trade. It was ranked fifth in exports of goods and services to the United States and eighth in imports of goods and services from the United States. Germany was the Netherlands main trading partner (U.S. Department of State, January 1998, 1997 Economic policy and trade practices, accessed April 15, 1998, at URL http://www.state.gov/www/issues/economic/trade_reports/europe_canada97/netherlands97.html).

The only mining operations left in the Netherlands in 1997 were the extraction of peat, salt, and sand and gravel. The metal-processing sector relied almost exclusively on imported raw materials of concentrates of ores and scrap. *(See table 2.)*

Production of primary aluminum in the Netherlands by Hoogovens Aluminium BV had been declining steadily for the past few years, while the growth of the secondary aluminum industry had been increasing. The production of secondary aluminum consumed about 5% of the energy required to produce primary aluminum.

Hoogovens continued to investigate the possibility of building its own powerplant to serve its aluminum and steel operations. An earlier study by the company had indicated that the organization could save as much as 20% on its energy costs if it were to build a 1,000-megawatt powerplant. This would be equivalent to 6% of the country's electricity capacity.

The Steel Division of the Hoogovens Group, Hoogovens IJmuiden BV, was Europe's sixth largest steel producer. As a result of the company's reorganization plan that took effect in mid-1995, the steel division was divided into five separate business-oriented organizations, each responsible for its own financial results. In addition to the marketing, sales, and production units, a product/market unit was created to focus more attention on customer-driven innovation. To increase the international depth of the market, an International Business Development directorate was set up during this reorganization to build up sustainable positions on growth markets outside of Europe (Hoogovens Ijmuiden, January 1997, untitled, accessed May 28, 1998, at URL http://www.stw.nl/jv96/gebr/hoogovens.html).

After the Nederlandse Aardolie Mattschappij discovered one of the largest gasfields in the world in the north of the Netherlands in 1959, the decision was taken to drill for natural gas and petroleum in the North Sea as well. Natural gas has become the most important mineral fuel produced in the Netherlands and was produced from 30 offshore facilities in the North Sea and 20 onshore facilities. Companies are now allowed to deplete gasfields over a period of 10 years instead of the previous 14 years and at a maximum load factor of 90% instead of the previous 67%. In addition to domestic consumption, the gas was exported and provided the equivalent of more than US$4 billion each year in export sales (Netherlands Foreign Trade Agency, January 1998, The Netherlands and the European Union, 1997, accessed May 28, 1998, at URL http://www.hollandtrade.com/NLEU.htm).

The large Slochteren gasfield in Groning Province was one of the world's largest producing natural gas fields. The Netherlands' total proven natural gas reserves, including mainland and North Sea continental shelf, has been estimated to be 1.2 trillion cubic meters, of which about 80% is at Slochteren (Department of State, April 1996, The Netherlands, April 1996, DOS Publication 7967, accessed May 27, 1997, at URL:gopher://dosfan.lib.uic.edu/).

Major Sources of Information

Geological Survey of the Netherlands
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Ministry of Economic Affairs
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TABLE 1
NETHERLANDS: PRODUCTION OF MINERAL COMMODITIES 1/

(Metric tons unless otherwise specified)

Commodity 2/		1993	1994	1995	1996	1997 e/
METALS						
Aluminum metal:						
Primary		231,841	219,382	215,600	227,027	231,000
Secondary e/		150,000 3/	175,300	191,500	150,000 r/	150,400 4/
Cadmium metal, primary		526	307 r/	603 r/	603 r/	753 4/
Iron and steel:						
Ore, sintered (from imported ore)		4,000,000 e/	3,021,500	4,246,400	4,250,000 e/	4,250,000
Metal:						
Pig iron, including blast-furnace ferroalloys (if any)		5,404,000	5,443,400	5,646,500	5,545,000	5,804,000 4/
Steel:						
Crude		6,001,000	6,174,000	6,409,000	6,325,000 r/	6,640,000 4/
Semimanufactures		5,812,000	5,948,000	5,500,000 e/	4,810,000 r/	5,175,000 4/
Lead, metal, refined, secondary		24,200	24,500 r/	20,200 r/	22,000 r/ e/	19,500
Tin, metal, secondary		200 r/	--	--	--	--
Zinc, metal, primary		206,700	212,600	206,300	207,100 r/	201,100 4/
INDUSTRIAL MINERALS						
Cement, hydraulic e/		3,400,000	3,400,000	3,400,000	3,300,000	3,300,000
Magnesium compounds: e/						
Chloride		125,000	140,000	125,000	125,000	125,000
Oxide		90,000	100,000	100,000	100,000	100,000
Nitrogen, N content of ammonia e/	thousand tons	2,472 4/	2,500	2,500	2,500	2,500
Salt, all types e/	do.	3,500	3,500	4,976 4/	5,530 4/	5,500
Sand, industrial	do.	20,000 e/	25,006	23,159	24,000 r/ e/	24,000
Sodium compounds, n.e.s.: e/						
Carbonate, synthetic		400,000	400,000	400,000	400,000	400,000
Sulfate:						
Natural		20,000	20,000	20,000	20,000	20,000
Synthetic		15,000	15,000	15,000	15,000	15,000
Sulfur: e/						
Elemental byproduct:						
Of metallurgy		125,000	125,000	125,000	150,000	150,000
Of petroleum and natural gas		290,000	300,000	300,000	150,000	137,600
Total		415,000	425,000	425,000	300,000 r/	287,600
Sulfuric acid, 100% H_2SO_4		1,150,000	1,250,000	1,250,000 e/	1,250,000 e/	1,250,000
MINERAL FUELS AND RELATED MATERIALS						
Carbon black e/		100,000	110,000	100,000	100,000	100,000
Coke, metallurgical e/		2,900,000	2,750,000	2,800,000	2,800,000	2,800,000
Gas:						
Manufactured e/	lion cubic meters	9,500	10,000	10,000	10,000	10,000
Natural:						
Gross	do.	84,005	78,400	78,350	89,700	88,000
Marketed e/	do.	83,000	77,400	78,000	86,000	86,000
Natural gas liquids e/	42-gallon barrels	170,000	170,000	170,000	170,000	170,000
Peat, agricultural e/		300,000	300,000	300,000	300,000	300,000
Petroleum:						
Crude	42-gallon barrels	18,947	25,298	24,466 r/	21,086 r/	21,000
Refinery products: e/						
Liquefied petroleum gas	do.	--	36,100 4/	36,000	36,000	36,000
Mineral jelly and wax	do.	600	600	600	600	600
Gasoline, motor	do.	74,000	75,000	75,000	75,000	75,000
Naphtha and white spirit	do.	100,000 4/	84,200 4/	85,000	85,000	85,000
Jet fuel	do.	39,000 4/	44,200 4/	40,000	40,000	40,000
Kerosene	do.	--	1,520 4/	1,600	1,600	1,600
Refinery gas	do.	21,200	22,000	20,000	20,000	20,000
Lubricants	do.	3,500	3,750	3,800	3,800	3,800
Residual fuel oil	do.	99,100 4/	84,400 4/	85,000	85,000	85,000
Bitumen	do.	4,400	4,400	4,500	4,500	4,500
Unspecified	do.	25,000	25,000	25,000	25,000 r/	25,000
Total	do.	366,800	381,170	376,500	376,500	376,500

e/ Estimated. r/ Revised.

1/ Table includes data available through April 1998.

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

3/ Sales.

4/ Reported figure.

TABLE 2
NETHERLANDS: STRUCTURE OF THE MINERAL INDUSTRY IN 1997

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facility	Annual capacity
Aluminum, primary		Hoogovens Aluminium BV	Smelter at Delfzijl	219
Do.		Pechiney Nederland BV	Smelter at Vlissingen	178
Cadmium	tons	Budelco BV (Australian Overseas Smelting Pty. Ltd, 50%; Kempensche Zinkmaatschappij Zincs de la Campine BV, 50%)	Plant at Budel-Dorplein	650
Cement		ENCI Nederland BV (Eerste Nederlandse Cement Industrie NV)	10 plants at Maastrict	2,700
Do.		Cementfabriek IJmuiden BV	3 plants at IJmuiden	1,600
Do.		Cementfabriek Rozenburg BV	2 plants at Rozenburg	920
Lead		Hollandse Metallurgische Industrie Billiton BV	Electrolytic plant at Arnhem	35
Do.		Billiton Witmetaal BV	Electrolytic plant at Naarden	6
Magnesia		Billiton Refractories BV	Plant at Veendam	100
Do.		MAF Magnesite BV	Plant at Vlaardingen	40
Natural gas	million cubic meters per day	Nederlandse Aardolie Maatschappij BV (NAM)	Groningen, Leeuwarden, Assen, and other onshore gasfields and several offshore wells in the North Sea	225
Petroleum, crude	barrels per day	AMOCO, CONOCO, and UNOCAL	766 wells (204 producing) including North Sea fields: Haven, Helder, Helm, Hoorn, Kotter, Logger, and Rijn	83,500 (63,000)
Do.	do.	NAM	Onshore fields: Berkel, DeLier, Ijselmonde, Meerkapelle, Pernis, West, Pinacke, Rotterdam, Schoonebeck, Werkendam, and Zoetemeer	(20,500)
Refineries		6 companies, of which the major ones are:		1,230,500
Do.	do.	Netherlands Refining Co.	Refinery at Rotterdam	(446,000)
Do.	do.	Shell Nederland Raffinaderij BV	Refinery at Pernis	(374,000)
Do.	do.	Esso Nederland BV	Refinery at Rotterdam	(175,000)
Do.	do.	Total Raffinaderij Nederland NV	Refinery at Vlissingen	(150,000)
Salt		Akzo Salt and Basic Chemicals BV	Mines at:	4,000
Do.		do.	Hengelo	(2,000)
Do.		do.	Delfzijl	(2,000)
Sodium:				
Carbonate, synthetic		do.	Plant at Delfzijl	380
Sulfate, synthetic		do.	do.	600
Steel		Hoogovens IJmuiden BV	Plant at IJmuiden	6,100
Zinc		Budel Zinc BV (Pasminco Europe BV)	Plant at Budel-Dorplein	215