



2005 Minerals Yearbook

NETHERLANDS

THE MINERAL INDUSTRY OF THE NETHERLANDS

By Harold R. Newman

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 materials 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.

The Netherlands has a land area of 33,883 square kilometers and borders the North Sea to the north and west, Belgium to the south, and Germany to the east. It is located at the mouths of three major European rivers—the Maas, the Rhine, and the Schelde. The country was one of the most densely populated and topographically low-lying countries in the world. In 2005, the gross domestic product (GDP) based on purchasing power parity was \$503 billion, and the per capita income at purchasing power parity was \$30,862. The growth rate of the GDP was 1.1% (International Monetary Fund, 2006^{§1}).

In 2005, the Dutch economy appeared to be coming out of recession, but the recovery continued to be fragile and unsteady. Production improved, but output was lower than that of 2004 in construction and practically every branch of industry and commercial services. Unemployment rose to 4.9% in 2005 from 4.6% in 2004, and the number of jobs declined for the first time since 1994. The GDP increased slightly because of an increase in overall domestic demand and a 7.2% increase in exports. Imports rose by 6.7%. The Dutch economy was heavily dependent on international developments and could benefit from a strong revival of the world economy. The export, reexport, and import of goods and services together accounted for more than 60% of the GDP (Holland Trade, 2006[§]).

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 east and north of the country. Downstream activities included metallurgical and chemical industries, which were largely based on imported ores and industrial minerals (Mbendi, 2005a[§]). Since 2001, production of mineral commodities generally remained the same or decreased (table 1).

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.

Since the 1980s, the Government has reduced its role in the economy, and privatization has continued with little debate or opposition. Nevertheless, the Government continued to dominate the energy sector and played a large role in the aviation, chemicals, telecommunications, and transportation sectors. The structure of the mineral industry is listed in table 2.

Pechiney Nederland CV (PLN) was a producer of extrusion billets and rolling slabs in aluminum and aluminum alloys made out of primary aluminum and remolten scraps and ingots. With a production capacity of 213,000 metric tons per year (t/yr) of primary aluminum and 230,000 t/yr of billets and slabs, it was one of the leading plants of its kind in Europe. Pechiney Nederland NV, a subsidiary of Alcan Inc. of Canada, owned 85% of PNL. The remaining 15% was owned by the Hunter Douglas Group of the Netherlands. Each partner sells its own share of the production. The Vlissingen location was chosen because of the advantage offered by its deep water access, which facilitated the receipt of raw materials (Pechiney Nederland NV, 2005[§]).

The merger of Mittal Steel Co. NV with International Steel Group Inc. (ISG) was approved by shareholders in 2005. ISG was one of the leading steel producers in North America. As a result of this merger, Mittal Steel, which has its corporate headquarters in Rotterdam, became, in terms of capacity, the world's largest and most global steel company, with plants in several countries. Mittal Steel, which produced flat and long steel, served most steel-consuming sectors, including the appliance, automotive, construction, and machinery sectors (Mittal Steel Co. NV, 2005[§]).

Corus Group planned to invest £153 million (\$282 million²) in a new 1.6-million-metric-ton-per-year (Mt/yr) cold-rolling mill and a new 550,000-t/yr hot-dipped galvanizing line at its Ijmuiden plant. The operations were scheduled to come online in 2008. The investment was expected to expand the product range for both automotive and construction markets. The galvanizing line's output would be 80% dedicated to the automotive sector. Corus sold almost 1 Mt/yr of galvanized steel to the automotive industry in 2005. This number was expected to rise to 1.4 Mt/yr by 2008 (Metal Bulletin, 2005).

Zinifex Limited's zinc smelter at Budel produced a record 231,800 metric tons (t) in 2005 exclusively from zinc concentrates from Zinifex's Century Mine in Queensland, Australia. Work was underway to expand Budel's zinc production to 260,000 t/yr and will include construction of a facility to produce zinc diecast alloy. Commissioning of the facility was planned for mid-2006 (Zinifex Limited, 2006[§]).

Budel was a state-of-the-art facility that produced very little solid waste. The acidic wastewater from Budel's operation contains zinc and such other metals as chromium, copper, iron, lead, manganese, and nickel. Budel developed a bioprocess that uses sulfate-reducing bacteria to capture and recycle secondary zinc and other metals in its wastewater as metasulfide precipitate. The metasulfide precipitate is recycled back into the refinery feedstock. The process has resulted in a 10- to 40-fold decrease in the concentration of heavy metals in the refinery wastewater and eliminated the production of metal-contaminated gypsum, which was a hazardous waste byproduct (BioEconomy, 2005[§]).

¹References that include a section mark (§) are found in the Internet References Cited section.

²Where necessary, values have been converted from United Kingdom pounds (£) to U.S. dollars (US\$) at the rate of £1.00=US\$1.84.

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 dead-burned magnesia, other magnesium compounds, and calcium chloride (Nedmag Industries Mining & Manufacturing BV, 2005§).

Akzo Nobel Salt BV announced that it was seeking a new owner for its salt specialties and solar salt operations. Akzo was intending to merge its base chemical, energy, and salt sectors into one business unit. Akzo stated that it would remain a producer of vacuum salt at its locations in Delfzijl and Hengelo (Akzo Nobel Salt BV, 2005§).

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. 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) produced about 75% of the country's total energy, including more than 95% of the onshore production (Mbendi, 2005b§).

NAM put a mobile gas-production facility into use for the first time in the Netherlands. This type of facility is especially well suited for natural gas production from very small fields. It is a mobile modular unit that can be used at one gasfield after another. It was installed initially near the village of Norg in the northern part of the Netherlands (Nederlandse Aardolie Maatschappij BV, 2005§).

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 35,000 barrels per day of oil and would double production in that part of the North Sea (Veba Oil Nederland BV, 2005§).

In July, BP plc officially opened its 9-megawatt (MW) wind farm at its oil terminal in the Port of Amsterdam. The project had the capacity to provide electricity for about 5,000 Dutch homes and to displace 5,000 t of carbon dioxide. The windpark consisted of three wind turbines, each of which was capable of producing 3 MW of electricity; these turbines were the largest to be ordered for the Dutch market. The project was a key part of BP's wind strategy, which focused on placing wind farms on BP land at industrial sites. BP had already applied this formula at its jointly owned 22.5-MW wind farm at the Netherlands Refining Co. near Rotterdam (BP plc, 2005§).

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 2005, 370 million metric tons of cargo passed through the Port of Rotterdam; this was an increase of 5% compared with that of 2004 and a new record (Port of Rotterdam, 2005§).

Outlook

The Port of Rotterdam will continue to be the leading European port and to play a very important role in the European import and export market. Almost as much cargo will 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 in the port. The Netherlands is expected to continue to be an important exporter of natural gas in the region.

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Major Sources of Information

Ministry of Economic Affairs
Energy Production Directorate
Bezuidenhoutseweg 6
2594 EC Hague
The Netherlands

TABLE 1
 NETHERLANDS: PRODUCTION OF MINERAL COMMODITIES¹

(Metric tons unless otherwise specified)

Commodity ²	2001	2002	2003	2004	2005 ^c
METALS					
Aluminum, metal:					
Primary	294,100	284,000	277,900	326,300	330,000
Secondary ^c	120,000	120,000	50,000 ³	50,000 ^e	50,000
Cadmium, metal, primary	455	485	495	572	575
Iron and steel:					
Ore, sintered, from imports ^c	3,000,000	3,000,000	3,000,000	3,000,000	3,000,000
Metal, pig iron, including blast-furnace ferroalloys (if any)	5,305,000	5,000,000 ^e	5,000,000	5,000,000 ^e	5,000,000
Steel:					
Crude	6,037,000	6,117,000	6,587,000	6,848,000	6,919,000 ³
Semimanufactures ^c	5,335,000 ³	5,300,000	5,300,000	5,400,000	5,400,000
Lead, metal, refined, secondary ^c	24,400 ³	22,000	22,000	20,000 ^r	17,000 ³
Zinc, metal, primary	204,800	203,400	222,700	228,100	231,800 ³
INDUSTRIAL MINERALS					
Cement, hydraulic ^c	3,400	3,400	3,400	3,400	3,400
	thousand metric tons				
Magnesium compounds: ^c					
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	1,989	2,053	1,750 ^e	1,970 ^e	1,700
	thousand metric tons				
Salt, all types ^c	5,000	5,000	5,000	5,000	5,000
	do.				
Sand, industrial ^c	15	15	15	15	15
	do.				
Sodium compounds, n.e.s.: ^c					
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	126,000	124,000	131,000	137,000	135,000
Of petroleum and natural gas	384,000	373,000	408,000	410,000	400,000
Total	510,000	497,000	539,000	547,000	535,000
Sulfuric acid, anhydrous, H ₂ SO ₄ ^c	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
MINERAL FUELS AND RELATED MATERIALS					
Coke, metallurgical ^c	2,300,000	2,300,000	2,300,000	2,200,000	2,200,000
Gas, natural: ^c					
Gross	74,232 ³	75,000	75,000	75,000	75,000
Marketed	73,296 ³	74,000	74,000	74,000	74,000
	million cubic meters				
Natural gas liquids ^c	160,000	160,000	160,000	160,000	160,000
	thousand 42-gallon barrels				
Petroleum:					
Crude	16,490	16,790	17,000	17,000 ^e	17,000
	do.				
Refinery products: ^c					
Liquefied petroleum gas	45,990 ^{r,3}	54,093 ^{r,3}	55,443 ^{r,3}	55,000 ^r	55,000
Gasoline, motor	121,874 ^{r,3}	133,225 ^{r,3}	132,933 ^{r,3}	130,000 ^r	130,000
Naphtha and white spirit	90,000	90,000	90,000	90,000	90,000
Kerosene and jet fuel	55,699 ^{r,3}	52,451 ^{r,3}	56,466 ^{r,3}	55,000 ^r	55,000
Refinery fuel and loss	31,865 ^{r,3}	25,879 ^{r,3}	27,046 ^{r,3}	30,000 ^r	30,000
Diesel oil	165,382 ^{r,3}	146,073 ^{r,3}	155,086 ^{r,3}	150,000 ^r	150,000
Residual fuel oil	69,533 ^{r,3}	81,979 ^{r,3}	79,862 ^{r,3}	80,000	80,000
Unspecified	192,684 ^{r,3}	161,146 ^{r,3}	179,653 ^{r,3}	175,000 ^r	175,000
Total	773,000	745,000	776,000	765,000	765,000

^cEstimated; estimated data are rounded to no more than three significant digits; may not add to totals shown.

¹Table includes data available through May 2006.

²In 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.

³Reported figure.

TABLE 2
NETHERLANDS: STRUCTURE OF THE MINERAL INDUSTRY IN 2005

(Thousand metric tons unless otherwise specified)

Commodity		Major operating companies	Location of main facility	Annual capacity
Aluminum:				
Primary		Pechiney Nederland NV (Alcan Inc., 85%)	Plant at Flushing (Vlissingen)	200
Billets		do.	do.	230
Primary		Corus Group	Smelter at Delfzijl	100
Secondary		Alumax Recycling BV	Smelter at Kerkade	50
Cadmium	metric tons	Budel Zinc BV (Ziniflex Ltd.)	Plant at Budel-Dorplein	650
Cement		Eerste Nederlandse Cement Industrie NV	Ten plants at Maastricht	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 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	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) (ExxonMobil 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	Hanze field, North Sea	31,500
Refined		Six companies, of which the major ones are:	Refineries	1,230,500
		Netherlands Refining Co. (BP plc, 69%, and ChevronTexaco, 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 BV, 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 Minëralen 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	232