

GERMANY

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The overall economic growth in Germany, during 2002, was very flat and did not reach the growth seen in 2001. GDP rose by only 0.2%, which was the smallest economic expansion in Germany since reunification. The export of goods and services rose by 2.9% in real terms. In the previous year the increase amounted to 5.1%.

The impetus in development experienced in 2000 did not continue, and the increase in domestic demand dropped from 2.0% to 0.8%. GNP amounted to €2.1 billion (figures quoted for 2002 are provisional or estimated), which is 1.8% more than in 2001. The 0.2% rise in GDP to €1.98 billion (measured at 1995 prices), in real terms, compared with a previous 0.6% growth. Economic productivity (as measured by GDP at 1995 prices per employee) increased by 1.0% (0.4% previously). The number of employees, compared with 2001 fell by 280,000 (0.8%) to 36.5 million. The annual average figure for those registered as unemployed rose by 9.0% (previously increase of 0.7%) to 4.071 million.

The slump in the construction industry, which started at the beginning of 1995, continued in 2002. The real gross value-added dropped by a further 4.8% after a drop of 6.6% in the previous year. This is the eighth year of declining economic performance by the building sector.

Energy

The consumption of primary energy in Germany last year decreased to 489 Mt of coal equivalent (tce = 8,140 kWh), or 1.9%, less than in 2000. This decrease in energy consumption was due in part to warmer weather in 2002 and decreasing economic activity. Taking the different weather conditions into account, net energy consumption was 0.6% lower compared with the previous year.

Compared with 2001, the contributions from the various primary energy sources remained almost unchanged. Oil is still the most important with a 37.5% share, followed by natural gas with 21.7%, hard coal (13.2%), nuclear (12.6%) lignite (11.6%), hydroelectricity and wind power (0.9%), and miscellaneous energy sources such as firewood, sludge and waste (2.5%). Germany was a net importer of electricity last year, with 0.1 Mtce, as opposed to being a net exporter of 0.2 Mtce in 2001.

In absolute figures, Germany's energy balance is as follows: the consumption of oil decreased to 183.2 Mtce (-3.7%), natural gas to 106.2 Mtce (-0.4%), hard coal to 64.3 Mtce (-2.3%) and nuclear energy to 61.4 Mtce (-3.9%). By contrast, consumption of lignite rose to 66.6 Mtce (+1.8%), of hydroelectricity and wind power to 4.5 Mtce (+18.4%) and of miscellaneous energy sources to 10 Mtce (+1.2%).

Last year's warm weather was the main reason for a decrease in gas consumption. If the weather is taken out of the equation, gas consumption increased by about 2.5%. In private households, gas consumption slowly decreased, the usage of gas in electrical power plants decreased by about 3%, while industrial gas consumption slight increased. Natural gas supplies about 9% of Germany's electricity production.

The overall trend in oil consumption was the reverse of 2001. Light heating oil consumption decreased by 11%, and heavy heating oil by 1%, due to warmer weather. Demand for gasoline dropped by 3.2%, mainly because of more economical vehicles and a decrease in private vehicle use. Diesel fuel sales decreased moderately by 0.1% and the quantity of jet fuel sold was on the 2001 level.

Total electricity production in Germany fell slightly, by 0.1% to 581 TWh. With new lignite power plants, electricity production from lignite reached a total market share of 27.4%. Electricity production from hard coal decreased by 2.5%, giving a total market share of 23%. Nuclear power plants still have the strongest market share with 28% but decreased their production to 165 TWh. The market share of gas decreased by 9.3% (previously 9.5%) and the market share of heating oil showed little change, at 1%.

The capacity of wind generators was expanded from 8,754 MW in 2001 to 12,000 MW in 2002. The market share of electrical power produced by wind in Germany totalled 1.6% (1.0% previously). Hydropower is the main source of electricity produced by non-renewable resources, however, with a market share of 2.0%.

Coal

At the end of 2002, ten hard-coal mines were in operation in Germany. One mine was closed mid-way through the year in the Ruhr area. Total production dropped by 3.6% to 26.09 Mt. The number of employees in the coal-mining industry kept on falling, reaching 44,520 in comparison with 46,858 in 2001. Average daily output per mine rose to 10,546 t (+10.9%), and average annual production per underground worker increased by 5.5% to 1,038 t (2001: 985 t; 2000: 1,057 t). The performance per man shift decreased by 4.7% to 6,539 t. With the 5% fall in domestic hard-coal production, and a weak economic situation in general, total imports of coal, coal briquettes and coke dropped to approximately 30.5 Mtce (-6.2%) in 2002 (Table 1).

Output from German lignite mines increased to 181.8 Mt in 2002, which is 3.7% (6.4 Mt) more than the year before. Lignite consumption dropped from 55.6 Mtce to 53.3 Mtce. The biggest production share, of 99.4 Mt (2001: 94.3 Mt; 2000: 91.9 Mt), came from the Rhineland field. The mining areas of Lausitz and Middle-Germany increased their output by 1.8 Mt and 0.8 Mt respectively, as a result of demand continuing to rise at two power plants that started operating in 1996 and in 2000. Most of the remaining production came from the Helmstedt field (2.9 Mt). Approximately 92% of lignite production (167.4 Mt) is used for electrical power generation. In order to keep lignite power generation competitive, modernisation and structural adaptation

measures are in progress. Because of these measures the number of people employed in the lignite-mining industry continued to fall, by 907, to reach 19,034 by year's end.

Germany's largest lignite producer, RWE Rheinbraun, also operates two lignite mines and an associated power plant (installed capacity of 836 MW) in Hungary northeast of Budapest. In addition, RWE Rheinbraun holds a majority stake in Consol Energy, which is one of the leading hard-coal producers in the US with annual production of approximately 66 Mt, and the second-largest US producer of coal-bed methane.

RAG Coal International enlarged its worldwide activities, with 18 mines and joint ventures. It achieved a total turnover of €4.3 billion and a pre-tax profit of €105.3 million (2001: €80 million). At the end of 2002, the company employed more than 6,500 people in 20 countries in mining operations, coal trading and mining equipment manufacturing.

Oil and natural gas

Oil production from domestic sources reached 3.7 Mt in 2002. This is 7.6% more than the previous year and the highest output since 1990. Schleswig-Holstein contributed a 57.7% share of total German oil production due to the Mittelplate field. Lower Saxony reduced production by 5.9%, with a production share of 37.9%.

At the end of 2002, proven and probable reserves of crude oil amounted to 60.3 Mt, which is 14 Mt or 29% more than at the end of the previous year. This significant increase is due to upward revision of the Mittelplate field's reserves.

Production of natural gas amounted to 20.1 billion m³, slightly lower than in 2001 (20.3 billion m³). Lower Saxony had by far the major domestic production share, with 89.2% (88.8% previously). Domestic production met about 21% of German demand for natural gas.

At the end of 2002, proven and probable reserves of natural gas were estimated to be 304.6 billion m³.

Total drilling in the oil and gas sector rose to 56,807 m (2001: 54,030 m). This included exploration as well as production drilling. Seismic prospecting covered areas 1,472 km² for 3D and 2,973 km of 2D lines. The annual average number of employees in the oil and gas industry increased from 5,902 in 2001 to 6,349 in 2002.

Rock salt

In general, production of rock salt, as well as salt from brine, has decreased. Only in Lower Saxony was there a slight increase relative to 2000 in the production of salt from brine, to 364,074 t. In North Rhine-Westphalia, production of industrial grade brine increased to 1,966,420 t NaCl. Production in Germany is concentrated in 11 locations, making Germany the leading producer of salt in the EU.

Potash

Annual production by Kali und Saltz (K+S) amounts to 3.5 Mt of K₂O equivalent, making it the leading producer in Europe. Production figures for the other European producers, Spain and France, are less than 1.0 Mt.

Industrial minerals

Production of industrial minerals and rocks dropped nearly 8% in 2001, making it the most difficult year for the industry since Germany's reunification. The decrease was about the same in both the old and new federal states. The drop in turnover amounted to 8.4%, employment decreased by 5.6%. The industry earned about DM46 billion in 2001 and embraced some 6,500 companies employing around 156,000 people.

According to the Bundesverbandes der Deutschen Kies- und Sandindustrie eV (BKS), sand and gravel production decreased from 355.1 Mt in 2000 to 324.2 Mt in 2001. Production of crushed stone by the companies in the Bundesverband der Deutschen Naturstein-Industrie eV (BVNI), decreased from 145 Mt in 2000, to 137 Mt in 2001. Unfired products of limestone and dolomite, reported by members of the Bundesverband der Deutschen Kalkindustrie eV, decreased from 36 Mt to 34 Mt. Domestic sales by the German cement industry amounted to 28 Mt; about 2.5 Mt were imported. The industry dropped from being the tenth-largest producer of cement globally in 2000 to thirteenth. *Per capita* consumption of cement decreased from 434 kg in 2000 to 370 kg in 2001.

Kaolin

Bavaria remains the largest producer of kaolin in Germany. Production from the deposits in the Upper Palatinate decreased, however, as did output in the other kaolin-producing regions in Germany (Hesse, North Rhine-Westphalia, Rhineland-Palatinate, Saxony, and Saxony-Anhalt).

Bentonite

Germany continues to be a leading producer of bentonite in Western Europe, with a production of 447,913 t in 2001. The only producing deposits are in southern Bavaria.

Table 1: Mineral Production (Mt except where stated)¹

	2000	2001	2002
Energy			
Hard Coal	33.3	27.05	26.09
Lignite	167.7	175.4	181.8
Oil	3.1	3.4	3.7
Natural gas ² (Bm ³)	20.1	20.3	20.1
Primary energy consumption (Mtce)	486	494	489

¹ Useable production.

² One cubic metre of natural gas equates to 9.7692 kWh.

Table 2: Production of Industrial Minerals and Rocks (Mt)

	1999	2000	2001	2002
Rock salt ¹	16.7	15.0	15.7	n.a.
Potash ²	3.5	3.4	3.5	n.a.
Sand and gravel	369.4	343.2	324.2	300 ^e
Silica sand	13.3	11.9	11.5	10 ^e
Crushed natural rock	154	157	137	125 ^e
Limestone and dolomite ³	37.1	36.4	34.4	31 ^e
Limestone ⁴	61.8	58.7	54.3	51.3
Clay ⁵	5.1	5.5	5.5	4.7
Kaolin	3.5	3.6	3.8	3.5 ^e
Bentonite	0.476	0.464	0.447	0.430
Gypsum, anhydrite	2.3	2.3	2.0	1.8
FGD-gypsum	5.8	7.1	6.8	6.5 ^e
Pumice	0.182	0.161	0.124	0.043
Dimension stone	0.208	0.275	0.282	0.224

¹) including brine.

²) K₂O equivalent.

³) excluding raw material for cement manufacture.

⁴) for cement and lime manufacture.

⁵) refractory and ceramic clays.

e. estimated figures.

na = not available.

Source: Rohstoffwirtschaftliche Länderstudie XXVII, BGR, Hannover, 2002.