

# AFGHANISTAN AND PAKISTAN

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## Afghanistan

The landlocked Islamic State of Afghanistan is an extremely poor country mainly because of the political upheaval, civil strife, and war of at least the past two decades. The country, however, has economic potential owing to considerable mineral resources of fossil fuels and precious and semiprecious gemstones. Additional mineral resources include barite, coal, copper, iron ore, lead, salt, sulfur, and zinc. The destruction of most of the war-torn country's industrial infrastructure has prohibited their exploitation. The economy was essentially agricultural, which included subsistence farming and livestock raising (sheep and goats).

In the late 1970s, proven and probable oil and condensate reserves were estimated to be 95 million barrels. Apart from oil and gas, coal reserves have been estimated to be about 400 million metric tons (MBendi Information Services, [undated], Afghanistan country profile, accessed July 17, 2001, at URL <http://www.mbendi.co.za/land/as/af/p0005.htm>).

Afghanistan has additional economic potential because of its strategic geographical position as a transit route for Central Asian hydrocarbons to the Arabian Sea. This potential includes proposed multibillion dollar oil and gas export pipelines through the country. These plans, at least in the short term, have been thrown in serious doubt because of additional sanctions imposed on Afghanistan by the United Nations Security Council on December 19, 2000 (U.S. Energy Information Administration, December 2000, Afghanistan fact sheet, accessed March 16, 2001, at URL <http://www.eia.doe.gov/cabs/afghan.html>).

The transport system in Afghanistan was in poor condition with almost 80% of the highways and roads unpaved. Owing to the rugged terrain in the country, the only operational rail network, which was about 25 kilometers long, joined Afghanistan with Turkmenistan and Uzbekistan (MBendi Information Services, [undated], Afghanistan country profile, accessed July 17, 2001, at URL <http://www.mbendi.co.za/land/as/af/p0005.htm>).

## Pakistan

Pakistan's real gross domestic product (GDP) growth rate decreased to 1.8% in 2000 from a high of 4.7% in 1998 and was expected to increase by 2.3% in 2001. Inflation was expected to decrease to 11.1% in 2001 from a high of 15.6% in 2000. In 2000, Pakistan's external debt was more than one-half its annual GDP, and the country's debt payments due annually exceeded receipts from all exports. Although formal legal protection for foreign investment in Pakistan generally was sufficient, an inadequate infrastructure, a poorly educated workforce, and

pervasive violence have been major obstacles for attracting it. In 2000, foreign direct investment in Pakistan was only a fraction of comparable figures for the mid-1990s. In November, the International Monetary Fund reached an interim loan agreement that should provide \$596 million<sup>1</sup> during the following 10-month period; this would allow Pakistan to avoid defaulting on its foreign debts, at least temporarily (U.S. Energy Information Administration, February 2001, Pakistan—General background, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

In September, the Minister for Petroleum and Natural Resources invited the Iranian Government to invest in copper exploration and development, as well as become manager of the mothballed Saindak copper-gold-molybdenum-silver mining and metallurgical complex, a mine, mill, concentrator, and smelter in the Chagai Hills region of the western desert province of Baluchistan. Iran was reportedly interested because of the project's close proximity to its own Sar Cheshmeh copper operations (Mining Journal, 2000b). Equally interested in acquiring the Saindak project were China, whose China Metallurgical Construction Corp. had built the mine and metallurgical plant between 1991 and 1995 under a turnkey contract, and BHP Ltd. of Australia, which was engaged in a similar project close to Saindak (Iran Daily, 2000; Metal Bulletin, 2000b). Pakistan's Saindak Metals Ltd. (SML) had managed the Saindak complex beginning in 1995. Mining stopped in September 1996. SML, however, continued to maintain all equipment, which included major components in the concentrator that was operated regularly without load (Mining Journal, 2000c).

Also in the same general area of Baluchistan Province's Chagai Hills, Australia's Mincor Resources NL and BHP formed an alliance to explore and develop large porphyry-style copper deposits. The joint venture initially was to focus on the huge Reko Diq Complex, which was possibly one of the largest copper deposits in the world with total contained metal likely to exceed 7 million metric tons (Mt) of copper and more than 342,000 kilograms of gold. The Reko Diq Complex has at least 16 porphyry copper-gold mineralization zones. The most advanced in terms of development was the H4 supergene deposit, which was considered to be amenable to heap leach and solvent extraction-electrowinning processing. A decision to proceed with a bankable feasibility study, however, would not be made until yearend 2001 (Asian Journal of Mining, 2000a).

The Geological Survey of Pakistan was reported to have discovered a total of 400 Mt of iron ore in Baluchistan and North West Frontier (NWF) Provinces. Of the total, 300 Mt

<sup>1</sup>Where necessary, values have been converted from Pakistani rupees (PKR) to U.S. dollars at the approximate rate of PKR59.00=US\$1.00.

was in Baluchistan's Chagai Hills District, and 100 Mt was in NWF Province's Nowshera District. Testing apparently confirmed that the deposits were commercially viable. Mining was to be by open-cut methods. The Government planned to establish a mini steel mill at Dilband, Baluchistan Province, to produce up to 250,000 metric tons per year of steel billets (Asian Journal of Mining, 2000b; Engineering and Mining Journal, 2000).

On December 12, state-owned Pakistan Steel Mills (PSM) signed a \$5 million contract with Russia's Tyazhpromexport for the revamping of its No. 2 blast furnace. The work was to be done within a 39-day period in May and June 2001. PSM had completed a similar job on its No. 1 furnace in 1996 (Metal Bulletin, 2000a).

The government of NWF Province was considering reviving the Swat emerald mine at Mingora, which was discovered and first mined in 1958. The mine was to be delineated into three distinct parcels for international tender to different factions (Mining Journal, 2000a).

Coal was of minor significance to Pakistan's energy needs, although the discovery of a large low-ash, low-sulfur lignite deposit in the Tharparkar Desert of Sindh Province may increase its importance. Tharparkar coal reserves were being developed under the jurisdiction of the provincial Sindh Coal Authority. The Authority's policy was to develop the lignite deposit in conjunction with large mine-mouth electric powerplants (U.S. Energy Information Administration, February 2001, Pakistan—Coal, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

In 2000, Pakistan had approximately 612 billion cubic meters of proven natural gas reserves. The country produced an average of about 17.5 billion cubic meters of natural gas from 1996 through 2000; all was for domestic consumption (U.S. Energy Information Administration, February 2001, Pakistan—Natural gas, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>). Pakistani natural gas producers included the state-owned companies Pakistan Petroleum Ltd. and Oil and Gas Development Corp. (OGDC), as well as foreign-owned Atlantic Richfield Co. (United States), BHP Petroleum Pty. Ltd. (Australia), Lasmco plc (United Kingdom), and OMV [Pakistan] Exploration GmbH (Austria).

Pakistan's plan to make natural gas its preferred fuel for future electric power projects would necessitate a substantial increase in natural gas production. Natural gas preference also had generated Pakistani interest in pipeline construction to facilitate imports from neighboring countries. Much of Pakistan's increased demand for natural gas was to be accommodated by an increase in domestic production. OMV's discovery at Sawan was expected to produce 12.7 million cubic meters per day by 2001. Hardy Oil and Gas plc of the United Kingdom reported a discovery in the Middle Indus region of Sindh Province, which was expected to produce more than 1.6 million cubic meters per day (U.S. Energy Information Administration, February 2001, Pakistan—Natural gas, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

Although Pakistan produced an estimated 57,000 barrels per day (bbl/d) of crude oil in 2000, self-sufficiency in oil

production was a virtual impossibility (U.S. Energy Information Administration, February 2001, Pakistan—Oil, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>). The Government nevertheless encouraged firms from the private sector, which included foreign-based ones, to develop increased domestic capacity. Most of the foreign firms active in Pakistani oil exploration and production were small independents. The most significant foreign firms active in Pakistan, however, were BP Amoco plc of the United States and Lasmco. OGDSC also was a dominant participant. Malaysia's Petroliaam Nasional Bhd. (more commonly called Petronas), in cooperation with Lasmco, acquired a stake in an exploration block in Sindh Province. Domestic oil production was centered on the Potwar Plateau in Punjab and southern Sindh Provinces.

In November, the Government awarded two exploration blocks—the onshore Mehran Block 2467-4 to a team that included Union Texas Pakistan (a subsidiary of BP Amoco) and Occidental of Pakistan Inc. and an offshore block to Ocean Energy Inc. Orient Petroleum of the United States, which was an independent oil company and held Pakistani concessions, was investing approximately \$70 million in seismic surveys and exploratory drilling during an initial period of 3 years. Exploration activity in 2000 yielded several minor discoveries. The most significant was the Pariwali-3 well on the Potwar Plateau, which was expected to produce 2,500 bbl/d when developed (U.S. Energy Information Administration, February 2001, Pakistan—Oil, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

Pakistan's net oil imports were projected to increase considerably in the future as demand growth outperformed increases in domestic production. In 2000, demand for refined petroleum products acutely exceeded domestic refining capacity so that almost one-half of its refined products were imported. Pakistan's Pak-Arab Refinery, however, which became operational in late 2000, added 100,000 bbl/d to the country's refining capacity and, at least temporarily, alleviated its dependency on refined petroleum product imports (U.S. Energy Information Administration, February 2001, Pakistan—Refining/downstream, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

Although not having financial agreements in place yet, another major refining project that was being planned was the Iran-Pak Refinery at Baluchistan near the Iranian border. The refinery was to have a 130,000-bbl/d capacity and be a 50-50 joint-venture between Pakistan's Petroleum Refining and Petrochemical Corp. and the National Iranian Oil Co. The crude oil feed for the Iran-Pak Refinery was to be exclusively seaborne, arriving at and unloaded at a terminal planned for the refinery (U.S. Energy Information Administration, February 2001, Pakistan—Refining/downstream, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

The Government was planning to privatize Pakistan State Oil Co. (PSO), which held 75% of the market shares for petroleum products distribution. Additionally, the Government was seeking deregulation of petroleum product prices in conjunction with the privatization of PSO. As part of the privatization process, the Government was initiating the Gas Regulatory

Authority and the Petroleum Regulatory Board, which will delineate Government functions from the state-owned companies that were to be privatized (U.S. Energy Information Administration, February 2001, Pakistan—Refining/downstream, Country analysis brief, accessed March 12, 2001, at URL <http://www.eia.doe.gov/cabs/pakistan.html>).

In March, Pakistan's second nuclear powerplant was inaugurated at Chasma in the Mianwali District, Punjab Province. The plant was constructed with technical and financial assistance from China. Upon full commissioning, the plant was to produce 325 megawatts of electricity (Islamic Republic News Agency, March 28, 2000, Pakistan—Nuclear power plant, accessed April 3, 2001, at URL <http://www.irna.com/newshtm/eng/08184527.htm>).

The transportation infrastructure of Pakistan was moderately developed. Of the 247,811 kilometers (km) of roads, 141,252 km, which included 339 km of expressways, was paved and 106,559 km was unpaved. The public sector railway system consisted of 8,163 km—7,718 km was broad gauge [1.676-meter (m)] track, which included 293 km that was electrified and 1,037 km that was double track; and 445 km was narrow-gauge (1.0-m) track. Of the 118 airports, 82 had permanent-surface runways. International shipping ports included Karachi and Port Muhammad bin Qasim, both of which are on the Arabian Sea. The 20-ship merchant marine fleet included 1 petroleum-oil-lubricant tanker. Pipelines included 4,044 km for natural gas, 885 km for refined petroleum products, and 250 km for crude oil (U.S. Central Intelligence Agency, 2000, Pakistan—Transportation, World factbook, accessed June 12, 2001, at URL <http://www.odci.gov/cia/publications/factbook/geos/pk.html>).

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- 2000b, Industry in action—Saindak invitation for Iran: Mining Journal, v. 335, no. 8600, September 15, p. 215.
- 2000c, Industry in action—Saindak update: Mining Journal, v. 334, no. 8578, April 14, p. 288.

## Major Source of Information

Baluchistan Development Authority  
Quetta, Pakistan

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Pakistan Petroleum Ltd.  
Islamabad, Pakistan

Water and Power Development Authority  
WAPDA House  
Lahore, Pakistan  
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## Major Publications

Federal Bureau of Statistics, Karachi, Pakistan:  
Foreign Trade, monthly.  
Pakistan Statistical Yearbook, annual.  
Statistical Bulletin, monthly.

TABLE 1  
AFGHANISTAN: ESTIMATED PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity 3/	1996	1997	1998	1999	2000
Barite	2,000	2,000	2,000	2,000	2,000
Cement, hydraulic	116,000	116,000	116,000	120,000	120,000
Coal, bituminous	185,000	185,000	190,000	200,000	200,000
Copper, mine output, Cu content	5,000	5,000	5,000	5,000	5,000
Gas, natural:					
Gross	2,700	2,700	2,600	3,000	3,000
Marketed	2,300	2,300	2,200	2,500	2,500
Gypsum	3,000	3,000	3,000	3,000	3,000
Natural gas liquids	40	40	40	45	45
Nitrogen, N content of ammonia	5,000	5,000	5,000	5,000	5,000
Salt, rock	13,000	13,000	13,000	13,000	13,000

1/ Table includes data available through June 25, 2001.

2/ Estimated data are rounded to no more than three significant digits.

3/ In addition to the commodities listed, asbestos, lapis lazuli, uranium, and a variety of crude construction materials (clays, stone, and sand and gravel) presumably are produced, but available information is inadequate to make reliable estimates of output levels.

TABLE 2  
PAKISTAN: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000
METALS					
Aluminum, bauxite, gross weight	4,056	4,934	4,954	11,216	8,668
Chromite ore:					
Gross weight	27,987	23,763	8,885	16,279	26,844
Cr <sub>2</sub> O <sub>3</sub> content	12,594	10,693	3,998	7,325	12,080
Iron and steel:					
Pig iron e/	1,500	1,400	1,500	1,500	1,500
Steel, crude	416	479	494	500 e/	500 e/
Lead, refined, secondary e/	2,000	2,000	2,000	2,000	2,000
INDUSTRIAL MINERALS					
Abrasives, natural, emery e/	135 3/	150	150	150	120 3/
Barite	18,582	23,390	20,657	20,505 r/	21,234
Cement, hydraulic	8,900 e/	9,001	8,901	9,300	9,500 e/
Chalk	6,545	5,350	4,357	6,283	7,711
Clays:					
Bentonite	15,290	16,450	14,196 r/	15,349	27,700
Fire clay	122,936	111,145	66,672	152,379	143,643
Fuller's earth	13,415	12,307	14,659	15,565	15,288
Kaolin (china clay)	54,860	66,235	70,777	64,692	49,574
Other e/	200,525 3/	200,000	200,000	200,000	200,000
Feldspar	32,572	25,169	31,191	29,235	43,186
Fluorspar	363	1,050	1,000 e/	220	997
Gypsum, crude	503,915	464,942	243,978	244,538	377,000
Magnesite, crude	3,202	4,057	3,157	2,175	4,192
Nitrogen, N content of ammonia	1,606,200	1,548,600	1,797,200	1,998,900	1,884,300
Phosphate rock: e/					
Gross weight	10,000	11,045 3/	11,000	11,500	11,000
P <sub>2</sub> O <sub>5</sub> content	1,700	1,880	1,870	1,950	2,000
Pigments, mineral, natural, ocher e/	6,100	2,600	3,180 3/	3,200	4,747 3/
Salt:					
Rock	940 e/	1,042	1,038	1,019	1,313
Marine	18 e/	19	15	16	20
Total	958 e/	1,061	1,053	1,035	1,333
Sand: e/					
Bajir and common	166,380 3/	170,000	175,000	175,000	212,120 3/
Glass	165,000	165,000	122,000 3/	130,000	162,000 3/

See footnotes at end of table.

TABLE 2--Continued  
PAKISTAN: PRODUCTION OF MINERAL COMMODITIES 1/ 2/

(Metric tons unless otherwise specified)

Commodity	1996	1997	1998	1999	2000
<b>INDUSTRIAL MINERALS--Continued</b>					
Sodium compounds, n.e.s.:					
Caustic soda	108,900	263,300	216,000	220,000 e/	220,000 e/
Soda ash, manufactured e/	215,400 3/	220,000	220,000	230,000	230,000
Stone:					
Aragonite and marble	571,765	314,309	354,818	391,754	582,000
Dolomite	161,754	176,096	99,741	188,573	287,962
Limestone thousand tons	14,870	9,016	8,749	9,437	9,884
Other (as "ordinary stone") e/ do.	7	10	15	18	20
Strontium minerals, celestite	2,500 e/	3,000 e/	598	634	1,918
Sulfur:					
Native e/	200	150	150	150	150
Byproduct, all sources	27,000 e/	22,002	18,988	21,166	20,189
Total	27,200 e/	22,152	19,138	21,316	20,339
Talc and related materials, soapstone	34,095	45,414	48,927	67,670	54,365
<b>MINERAL FUELS AND RELATED MATERIALS</b>					
Coal, all grades thousand tons	3,345	3,102	3,164	3,461	3,116
Coke e/ do.	735 3/	720	850 3/	900	900
Gas, natural:					
Gross production million cubic meters	16,935 r/	16,992 r/	20,224 r/	8,876 r/	24,222 3/
Marketed production (sales) e/ do.	14,600 r/	14,700 r/	17,500 r/	7,700 r/	20,900
Natural gas liquids e/ thousand 42-gallon barrels	1,080	1,080	1,080	564 3/	600
Petroleum:					
Crude do.	21,170 r/	21,900 r/	16,885	19,986	20,450
Refinery products: e/					
Gasoline do.	8,760 3/	8,800	8,900	8,589 3/	8,500
Jet fuel do.	4,745 3/	4,600	4,700	5,255 3/	5,500
Kerosene do.	4,015 3/	4,000	3,707 3/	2,714 3/	2,700
Distillate fuel oil do.	12,775 3/	13,000	13,500	14,000	14,000
Residual fuel oil do.	13,505 3/	13,500	13,419 3/	13,500	13,500
Lubricants do.	1,400	1,400	1,400	1,500	1,500
Other do.	5,110 3/	5,100	5,000	5,000	5,000
Total do.	50,300 r/	50,400	50,600	50,600	50,700

e/ Estimated. r/ Revised.

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

2/ Table includes data available through June 25, 2001.

3/ Reported figure.