

# COUNTRY ANALYSIS BRIEFS

## North Korea

Last Updated: February 2006

### Background

**The Democratic Peoples Republic of Korea** North Korea's economy, which remains under tight state control (collectivized agriculture and state-owned companies account for about 90 percent of all economic activity) grew by 2.2 percent in 2004, according to (North Korea) occupiers estimates by South Korea's central bank. Increases in output from utilities, agriculture, and mining contributed to this a strategic location growth. The modest growth in real Gross Domestic Product (GDP) over the last seven years followed a steady bordering China, South economic contraction from 1990 through 1998. North Korea's communist ideology has been based on the concept of Korea, and Russia."juche," or self-reliance. Severe economic problems have, however, forced the country to accept international food aid and embark on a series of limited market reforms. Famine in North Korea has reportedly killed hundreds of thousands of people over the last decade. Several governments, including the United States, have provided funding to the United Nations' World Food Program (WFP) for emergency food aid to North Korea.



North Korea has permitted a small amount of foreign investment in recent years, mainly by South Korean firms. According to South Korean figures, South Korea surpassed China in 2002 as North Korea's largest trading partner.

### North Korean-South Korean Relations

In mid-June 2000, the leaders of the two Koreas held their first summit meeting in Pyongyang. The summit led to a joint statement by the two leaders which supported, in general terms, the goal of eventual reunification of the two Korean states, reunification of families divided since the Korean War, and economic cooperation. Developments in inter-Korean relations since 2002 have been mixed. A naval clash near the two countries maritime frontier in June 2002 heightened tensions, but progress has been made in some areas, such as the commencement of work in September 2002 on clearing parts of the Demilitarized Zone (DMZ) to facilitate possible road and rail links. South Korean president, Roh Moo-Hyun has continued a policy of engagement with the North.

## United States Economic Sanctions

The United States announced on June 19, 2000 that it was easing some of the economic sanctions which have been in place with North Korea under the Trading With the Enemy Act since the start of the Korean War in 1950. Licenses are still required from the Treasury Department's Office of Foreign Assets Control (OFAC) for many transactions, and sales of military and "dual-use" items are still restricted. (See the OFAC [Fact Sheet on North Korea Sanctions](#) for more information.) The designation of North Korea as a state supporter of terrorism by the United States also effectively precludes lending by international financial institutions such as the World Bank.

## Energy Overview

**North Korea relies on coal and hydropower for most of its energy needs.** North Korea relies on two domestic sources of commercial energy -- coal and hydropower -- for most of its energy needs. In 2003, coal accounted for about 82 percent of the country's primary energy consumption.

North Korea's electric generating capacity is split nearly evenly between coal-fired thermal plants and hydroelectric plants. The country's thermal generating capacity is underutilized due to a lack of fuels. As a result of its electricity shortage, the country often experiences blackouts for extended periods of time, and power losses due to an antiquated transmission grid are high. Some hydroelectric facilities are believed to still be out of operation due to flood damage from major flooding in 1996.

The prospect of South Korean help for North Korea's electricity shortage was discussed at the June 2000 summit, and North Korea has been seeking electricity from South Korea since then. A linkage between the electric grids of the two Koreas is one possibility, but it would be of limited immediate value due to the North's poor transmission infrastructure. At present, South Korea has not agreed to supply the North with electricity from its own transmission grid.

Problems with the North Korean coal industry are closely related to the problem with electricity supply. Coal-fired power plants have been running well under capacity in recent years, due in part to problems with rail transportation of coal.

## Oil

**North Korea lacks domestic oil reserves.** North Korea lacks domestic petroleum reserves, but the West Korea Bay may contain hydrocarbon reserves, as it is considered to be a geological extension of China's Bohai Bay. Offshore exploration concessions previously held by Sweden's Taurus Petroleum, Britain's Soco, and Australia's Beach Petroleum have been allowed to lapse, having failed to find oil in commercial quantities. Petronas of Malaysia has taken over Block A, previously held by Soco.

In November 2001, the North Korean government awarded its first concession for an onshore block to Sovereign Ventures of Singapore, which covers an area in the Tachon-Rajin area near the Chinese border. In September 2002, the company reported that initial seismic survey results had indicated probable oil and natural gas deposits of modest size. Exploratory drilling began in 2003, but no information on results has yet been released.

Norway's Global GeoServices reported in October 2003 that it had signed an agreement for offshore surveys. The company announced that it intends to do seismic survey work.

In the meantime, North Korea must import all of the oil it consumes. Oil accounts for about 6% of total North Korean primary energy consumption, and is mostly limited to non-substitutable uses such as motor gasoline, diesel, and jet fuel. Deliveries of subsidized fuel oil under the Agreed Framework ended in November 2002, after the disclosure of North Korea's nuclear weapons program.

## Natural Gas

**North Korea is a potential transit route for natural gas to South Korea.** South Korea has held discussions with China, Russia, and BP about the possibility of importing natural gas from Russia's huge Kovykta gas field near Irkutsk. While China would be a major importer of gas through the pipeline, the project could be made more economical by adding a link to South Korea, which currently gets the vast majority of its natural gas by tanker as liquefied natural gas (LNG). North Korea is one possible route for the pipeline link to South Korea, and would be less costly than the subsea alternative. It now appear, though, the the pipeline will reach South Korea via a subsea route, bypassing North Korea. Another idea which has been under discussion is the possibility of supplying South Korea with natural gas from the Russian island of Sakhalin via North Korea. It could cover incremental demand in the next decade, after the completion of the pipeline from Irkutsk, but would face the same political risk barriers.

## Nuclear Energy

**Six party talks, including the United States, North Korea, South Korea, China, Russia, and Japan, have sought to end North Korea's nuclear weapons program.** Prior to 1994, North Korea's nuclear program had been a major concern for regional security, since its graphite reactor technology produced fissionable plutonium which can be used in nuclear weapons. North Korea precipitated a crisis in March 1993 when it announced it would withdraw from the Nuclear Non-Proliferation Treaty in 1993. In June 1993, North Korea agreed to "suspend" its withdrawal after talks with the United States.

Under the Agreed Framework negotiated with the United States in October 1994, North Korea had agreed to freeze its nuclear program in exchange for two new pressurized light-water reactors (which are considered less capable of producing weapons-grade plutonium) and 500,000 metric tons per year (about 3.3 million barrels) of heavy fuel oil to meet its energy needs until the first new reactor becomes operational. KEDO, an international consortium led by the U.S. government (with South Korea, Japan, the European Union, and others), was established to implement the agreement. The European Union joined KEDO in September 1997.

Japan signed a contract in May 1999 committing to provide its \$1 billion contribution to KEDO to fund the new light-water reactors, an action which had been delayed by North Korea's missile test in August 1998. The project was expected to cost a total of \$4.6 billion, with South Korea providing the greatest share of funding at \$3.2 billion. The United States and the European Union also had pledged to contribute funds.

Construction of the light water reactors was to be performed under a turnkey contract with KEPCO, which was awarded in December 1999. Initial site preparation work had begun, and the concrete foundation at the site was laid in August 2002. Training of North Korean technicians who were to operate the reactors had begun in June 2002. The project had faced many delays, and the completion date for the first reactor has been pushed back to at least 2008, from an original completion date of 2003. One hurdle the project had faced was the issue of indemnity for potential liabilities created by the plant. General Electric had originally been chosen to supply the generators, but pulled out of the project when the issue was not resolved to its satisfaction. In January 2001, it was announced that a consortium of Japanese firms, led by Hitachi and Toshiba, would supply the generators.

The disclosure by North Korea in October 2002 that it had a clandestine nuclear weapons program called into question the basis under the Agreed Framework for continuing construction of the reactors. On November 21, 2003, the Executive Board of KEDO, comprised of the United States, Japan, South Korea, and the European Union, made a formal determination that North Korea had not met the conditions necessary for the continuation of the light water reactor project. As a result, the project was suspended. North Korea indicated that the KEDO personnel would be leaving the site, and in January 2006, the remaining 57 people left. South Korea had spent \$1.1 billion on the project before it was suspended.

There have been continuing negotiations toward ending North Korea's nuclear weapons program. The negotiations have been carried out through Six-Party talks involving the U.S., North Korea, South Korea, China, Russia, and Japan. The fourth round of Six-Party talks in September 2005 reached agreement that North Korea would eliminate its nuclear weapons program in exchange for economic cooperation in energy trade, and investment. However, the fifth round of talks in November 2005 was inconclusive. North Korea has stated that it wants various U.S. sanctions lifted before resuming the talks. There are U.S. sanctions against eight North Korean companies for alleged weapons proliferation. There is also a Treasury Department block against transactions with Banco Delta Asia SARL, headquartered in Macau, which has been designated a "primary money laundering concern" for its dealings with North Korea.

## Profile

## Country Overview

<b>Chief of State</b>	Jong Il (Chairman, National Defense Commission)
<b>Location</b>	Eastern Asia, northern half of the Korean Peninsula bordering the Korea Bay and the Sea of Japan, between China and South Korea
<b>Independence</b>	15 August 1945 (from Japan)
<b>Population (2005E)</b>	22,912,177
<b>Languages</b>	Korean
<b>Religion</b>	traditionally Buddhist and Confucianist, some Christian and syncretic Chondogyo (Religion of the Heavenly Way) note: autonomous religious activities now almost nonexistent; government-sponsored religious groups exist to provide illusion of religious freedom
<b>Ethnic Group(s)</b>	racially homogeneous; there is a small Chinese community and a few ethnic Japanese

## Economic Overview

<b>Currency/Exchange Rate (01/26/2006)</b>	1 North Korea Won (KPW) = \$0.455
<b>Gross Domestic Product (GDP, 2004E)</b>	\$20.8 billion (Central Bank of South Korea estimate)
<b>Real GDP Growth Rate (2004E)</b>	2.2% (Central Bank of South Korea estimate)
<b>Exports (2004E)</b>	\$1.275 billion
<b>Exports - Commodities</b>	minerals, metallurgical products, manufactures (including armaments); textiles and fishery products
<b>Exports - Partners (2004E)</b>	China 29.9%, South Korea 24.1%, Japan 13.2%
<b>Imports (2004E)</b>	\$2.819 billion
<b>Imports - Commodities</b>	petroleum, coking coal, machinery and equipment; textiles, grain
<b>Imports - Partners (2004E)</b>	China 32.9%, Thailand 10.7%, Japan 4.8%

## Energy Overview

<b>Proven Oil Reserves (January 1, 2006E)</b>	None
<b>Oil Consumption (2005E)</b>	25 thousand barrels per day
<b>Crude Oil Distillation Capacity (2006E)</b>	71 thousand barrels per day
<b>Proven Natural Gas Reserves (January 1, 2006E)</b>	None
<b>Natural Gas Consumption (2003E)</b>	None
<b>Recoverable Coal Reserves (2003E)</b>	661.4 million short tons
<b>Coal Production (2003E)</b>	33.1 million short tons
<b>Coal Consumption (2003E)</b>	33.5 million short tons
<b>Electricity Installed Capacity (2003E)</b>	9.5 gigawatts
<b>Electricity Production (2003E)</b>	18.7 billion kilowatt hours
<b>Electricity Consumption (2003E)</b>	17.4 billion kilowatt hours
<b>Total Energy Consumption (2003E)</b>	0.9 quadrillion Btus*, of which Coal (82%), Hydroelectricity (12%), Oil (6%), Natural Gas (0%), Nuclear (0%), Other Renewables (0%)
<b>Total Per Capita Energy Consumption (2003E)</b>	39.2 million Btus
<b>Energy Intensity (2003E)</b>	28,651.6 Btu per \$2000-PPP**

## Environmental Overview

<b>Energy-Related Carbon Dioxide Emissions (2003E)</b>	70.4 million metric tons, of which Coal (94%), Oil (6%), Natural Gas (0%)
<b>Per-Capita, Energy-Related Carbon Dioxide Emissions (2003E)</b>	3.1 metric tons
<b>Carbon Dioxide Intensity (2003E)</b>	2.3 Metric tons per thousand \$2000-PPP**
<b>Environmental Issues</b>	water pollution; inadequate supplies of potable water; waterborne disease; deforestation; soil erosion and degradation
<b>Major Environmental Agreements</b>	party to: Antarctic Treaty, Biodiversity, Climate Change, Environmental Modification, Ozone Layer Protection, Ship Pollution signed, but not ratified: Law of the Sea

\* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar, wind, wood and waste electric power. The renewable energy consumption statistic is based on International Energy Agency (IEA) data and includes hydropower, solar, wind, tide, geothermal, solid biomass and animal products, biomass gas and liquids, industrial and municipal wastes. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

\*\*GDP figures from OECD estimates based on purchasing power parity (PPP) exchange rates.

## Links

## EIA Links

[EIA - Country Information on North Korea](#)

## U.S. Government

[CIA World Factbook - North Korea](#)

[U.S. Department of Energy - Office of Fossil Energy - North Korea](#)

[U.S. Treasury Department - Office of Foreign Assets Control](#)

[U.S. State Department - Background Notes - North Korea](#)

[U.S. State Department - Consular Information Sheet - North Korea](#)

[Library of Congress Country Study on North Korea](#)

## General Information

[Korean Peninsula Energy Development Organization \(KEDO\)](#)

[North Korea WWW Virtual Library](#)

## Sources

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## Contact Info

Lowell Feld

(202)586-9502

[lowell.feld@eia.doe.gov](mailto:lowell.feld@eia.doe.gov)