



Home > Country Analysis Briefs > Paraguay Country Analysis Brief



PDF version | PDB version

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[Background](#) | [Oil](#) | [Natural Gas](#) | [Electricity](#) | [Profile](#) | [Links](#)

## Paraguay

*Paraguay has no known oil or natural gas reserves but is a major producer and exporter of hydroelectric power. Paraguay is a member of MERCOSUR, the Southern Cone Common Market.*

*Note: Information contained in this report is the best available as of September 2004 and is subject to change.*



### BACKGROUND

The Republic of Paraguay is extensively integrated with the economies of its neighboring MERCOSUR members—Brazil, Argentina, and Uruguay. Paraguay has vast hydropower potential, with two large hydroelectric plants—Itaipu, one of the largest in the world, and Yacyreta.

Paraguay's economy depends heavily on agriculture, hydroelectricity generation, and trade with its neighboring countries. Accordingly, Paraguay is highly sensitive to regional trends. For instance, the financial crises that took place in Argentina and Brazil in 2001-2002 adversely affected Paraguay's economic growth, with the country's real gross domestic product (GDP) contracting 2.3% in 2002. In 2003, however, the country's economy rebounded, with real GDP growing

2.6%. Improved regional economic conditions and increased earnings from agricultural exports, particularly from soybeans, helped Paraguay's economy recover. In 2004, the country's real GDP is expected to grow 2.9%, but much of the growth will depend on continued regional economic stability in Brazil and Argentina and continued strong agricultural output. The Paraguayan government likely will be fiscally and monetarily constrained by requirements outlined in its \$73 million Stand-By Agreement with the International Monetary Fund (IMF), awarded in December 2003.

On August 15, 2003, Nicanor Duarte Frutos was inaugurated as Paraguay's new president. Since entering office, Duarte Frutos has worked on stimulating the country's economy.

### OIL

With no crude oil reserves, Paraguay relies entirely on imports to meet its crude oil and petroleum products demand, which averaged around 25,000 barrels per day (bbl/d) in 2003. State-owned oil

company, Petroleos Paraguayos (Petropar), is responsible for handling all crude oil and petroleum product imports, and regularly holds bidding rounds for oil supply contracts. In September 2004, for example, Petropar awarded Repsol-YPF (Spain), Petrobras (Brazil), and Glencore (Switzerland) contracts to supply oil and petroleum products through January 2005. The company also operates Paraguay's sole refinery, the 7,500-bbl/d Villa Elisa.

Under pressure from the International Monetary Fund (IMF), the Paraguayan government has been considering deregulating Petropar's monopoly on the country's domestic oil market. The government, however, reportedly remains hesitant, as current fuel prices are subsidized and deregulation could result in price hikes.

## **NATURAL GAS**

Although Paraguay neither consumes nor produces natural gas, the country has been looking for ways to include natural gas in its energy mix. A new hydrocarbons law, which could be adopted at the end of 2004, reportedly will contain legislation aimed at promoting the use of natural gas. One of the main drivers behind this initiative has been the government's desire to decrease Paraguay's consumption of firewood and charcoal, the use of which has contributed to deforestation.

Previous attempts to develop a natural gas sector in Paraguay have not been successful. In December 2002, the Bolivian and Paraguayan governments signed a preliminary agreement allowing for the construction of a pipeline extending from southern Bolivia to the capital of Paraguay, Asunción. The project also would have included building a 200-megawatt (MW) power plant in western Paraguay and a 750-MW plant near Asunción. Another proposal was the Gas Integration Project (Gasin), proposed by the Brazilian government in December 2001. This project involved constructing a natural gas pipeline linking Bolivia, Argentina, Paraguay and Brazil. To date, neither of these two projects has moved forward, and it seems unlikely that they will be revived, at least in the near term.

In other developments, Paraguay's government announced in September 2004 that it will sign 12 hydrocarbon exploration and production (E&P) concessions, which will expand exploration activities in northwestern Paraguay. Earlier in 2004, UK-based CDS Oil & Gas Group reported that it had successfully completed a production test in the region on the Independencia-1 natural gas well. The well reportedly flowed at a rate of 960,000 cubic feet per day, showing that Paraguay might have the potential to become a natural gas producer if more natural gas is discovered. Companies that reportedly will sign E&P concessions with Paraguay's government include H.A & E.R. Exploraciones, Pilcomayo Petróleos S.A., Hidroener Consultora, Guaraní Exploration, Union Oil, Paraguay Gas, Boreal Petróleos, Aurora Petróleos and Amerisur.

## **ELECTRICITY**

In 2002, Paraguay consumed 2.5 billion kilowatthours (Bkwh) of electricity, the fourth lowest level of power consumption in South America. Paraguay generates nearly all its electricity from one hydropower plant, Itaipu, which provides about 94% of Paraguay's relatively small electricity demand. The Yacyreta and Acaray hydropower plants, as well as six small thermal-fired plants, supply the remainder of the Paraguay's power demand.

Although Paraguay consumes a relatively small amount of electricity, the country ranks as the fourth largest electricity producer in South America, behind Brazil, Venezuela and Argentina. In 2002, Paraguay generated 48.4 Bkwh, of which 95% was exported, mainly to Brazil. In 2002, Paraguay's net electricity exports of 45.9 Bkwh were the second largest in the world, behind only France.

### Sector Organization

Paraguay's state-owned utility, Administración Nacional de Electricidad (ANDE), controls the country's entire electricity market, including generation, distribution and transmission. Along with deregulating the country's oil sector, the government is also considering unbundling the vertically integrated ANDE. Previous attempts to privatize ANDE, however, failed, as the government reportedly faced stiff resistance from government employees.

### Hydroelectricity

Itaipu, the world's largest operating hydroelectric dam, began initial operations in May 1984. The dam has a total installed capacity of 13.3 gigawatts (GW), which will increase to 14.0 GW once two new turbines are installed. The plant is jointly owned and operated by Paraguay and Brazil, which evenly share the electricity generated there. Paraguay exports most of its electricity from Itaipu to Brazil.

Paraguay's other major hydropower plant, Yacyreta, is equipped with 20 turbines and has an installed capacity of 3,200 MW. Paraguay and co-owner Argentina share the electricity generated at Yacyreta evenly, with most of Paraguay's share being exported to Argentina. Despite completion in 1999, Yacyreta is reportedly generating at only 60% of its capacity. The dam project was designed to have a reservoir 83 meters above sea level, but it currently is operating with a reservoir 76 meters above sea level. In April 2004, the Argentine and Paraguayan governments pledged to complete the dam, raising the reservoir to the 83-meter stage by 2007. Financial problems and corruption have reportedly hindered completion of the hydropower plant.

### COUNTRY OVERVIEW

**President:** Nicanor Duarte Frutos (since August 2003)

**Independence:** May 14, 1811 (from Spain)

**Population (2004E):** 5.8 million

**Location/Size:** Central South America, northeast of Argentina/156,000 square miles - slightly smaller than California

**Capital:** Asunción

**Languages:** Spanish (official), Guaraní

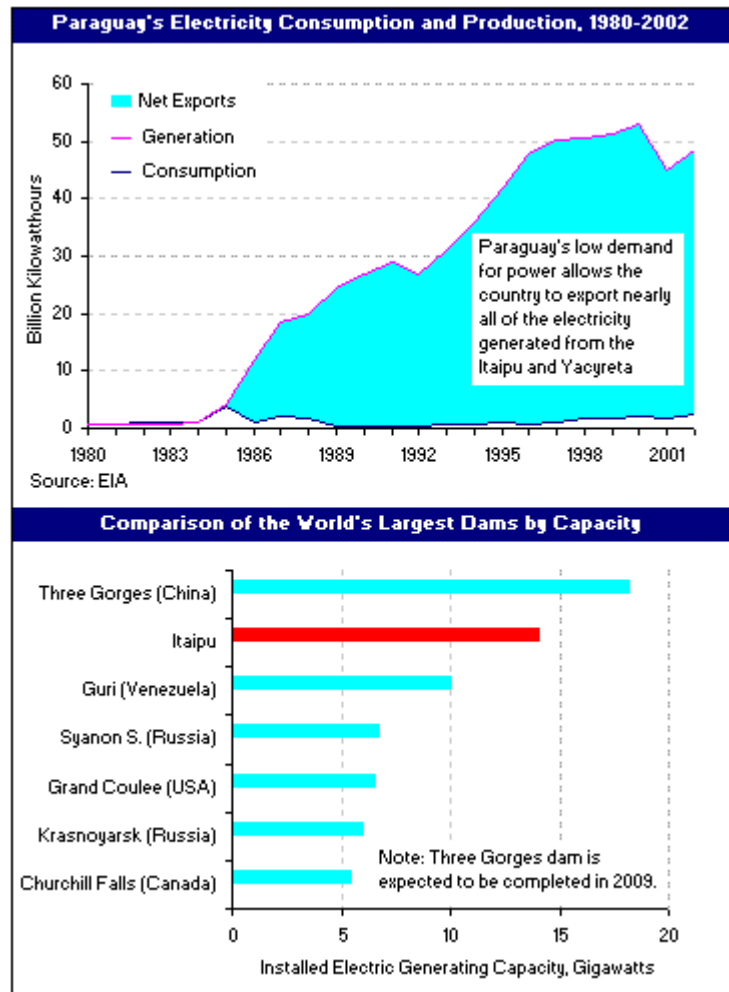
**Ethnic Groups:** Mestizo (mixed Spanish and Indian) 95%, white and Amerindian 5%

**Religion:** Roman Catholic 90%, Mennonite and other Protestant denominations 10%

### ECONOMIC OVERVIEW

**Currency:** Guaraní

**Market Exchange Rate (9/21/04):** US\$1 = 6,039.50 Guaranís



**Nominal Gross Domestic Product (2003E):** \$5.6 billion  
**Real GDP Growth Rate (2003E):** 2.6% **(2004F):** 2.9%  
**Inflation Rate (consumer prices, 2003F):** 14.2% **(2004F):** 5.4%  
**Unemployment (2003E):** 18.5%  
**Merchandise Exports (2003E):** \$3.0 billion  
**Merchandise Imports (2003E):** \$2.9 billion  
**Merchandise Trade Balance Surplus (2003E):** \$0.1 billion  
**Current Account Balance (2003E):** \$84 million (1.5% of GDP)  
**External Debt (2003E):** \$2.8 billion  
**Major Export Products:** Hydroelectricity, cotton, soybeans, meat products  
**Main Destinations of Exports (2002E):** Brazil (37%), Uruguay (17%)  
**Major Import Products:** Consumer goods, intermediate goods, capital goods, fuels  
**Main Origins of Imports (2002E):** Brazil (32%), Argentina (20%)

## ENERGY OVERVIEW

**Minister of Interior:** Orlando Fiorotto  
**Oil Production:** None  
**Oil Consumption (2003E):** 25,000 barrels per day (bbl/d)  
**Crude Oil Refining Capacity (1/1/04E):** 7,500 bbl/d  
**Natural Gas Production/Consumption:** None  
**Coal Production/Consumption:** None  
**Electricity Generation Capacity (2002E):** 8.0 gigawatts, of which 99.5% was hydroelectric  
**Electricity Generation (2002E):** 48.4 billion kilowatthours (Bkwh)  
**Electricity Consumption (2002E):** 2.5 Bkwh  
**Electricity Net Exports (2002E):** 45.9 Bkwh

## ENVIRONMENTAL OVERVIEW

**Minister of Agriculture & Livestock:** Antonio Ibanez  
**Total Energy Consumption (2002E):** 0.39 quadrillion Btu\* (<0.1% of world total energy consumption)  
**Energy-Related Carbon Dioxide Emissions (2002E):** 3.4 million metric tons of carbon (<0.1% of world total carbon dioxide emissions)  
**Per Capita Energy Consumption (2002E):** 68.5 million Btu (vs. U.S. value of 342.0 million Btu)  
**Per Capita Carbon Dioxide Emissions (2002E):** 0.6 metric tons (vs. U.S. value of 19.9 metric tons)  
**Energy Intensity (2002E):** 17,681 Btu/\$1995 (vs U.S. value of 10,619 Btu/\$1995)\*\*  
**Carbon Dioxide Intensity (2002E):** 0.15 metric tons/thousand \$1995 (vs U.S. value of 0.63 metric tons/thousand \$1995)\*\*  
**Fuel Share of Energy Consumption (2002E):** Hydro (87.5%), Oil (12.4%), Coal (0.0%), Natural Gas (0.0%), (Note: Paraguay consumes a large amount of fuel wood and charcoal for residential and commercial use. EIA, however, does not collect this data for Paraguay).  
**Fuel Share of Carbon Dioxide Emissions (2002E; includes natural gas flaring):** Oil (100%), Coal (0.0%), Natural Gas (0.0%)  
**Status in Climate Change Negotiations:** Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified February 24th, 1994). Paraguay ratified the Kyoto Protocol on August 25th, 1999.  
**Major Environmental Issues:** Deforestation (an estimated 2 million hectares of forest land have been lost from 1958-85); water pollution; inadequate means for waste disposal present health risks for many urban residents.  
**Major International Environmental Agreements:** A party to Conventions on Biodiversity, Climate Change, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Ozone

Layer Protection and Wetlands. Has signed, but not ratified, the Nuclear Test Ban.

\* 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.

## ENERGY INDUSTRY

**Organization:** *Oil refining* - Petroleos Paraguayos (Petropar, the state oil refinery); *Electric power* - Administración Nacional de Electricidad (ANDE), the state electricity corporation

**Port:** Asunción

**Major Oil-Producing Fields:** none

**Refinery (1/1/04E Capacity):** Petroleos Paraguayos - Villa Elisa (7,500 bbl/d)

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*Sources for this report include: ANDE; Business News Americas; CIA World Factbook; Dow Jones; Global Insight; Economist Intelligence Unit ViewsWire; Financial Times; International Energy Agency; IMF; Latin America Monitor; New York Times; Oil and Gas Journal; Reuters; U.S. Energy Information Administration.*

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## LINKS

For more information from EIA on Paraguay, please see:

[EIA - Country Information on Paraguay](#)

Links to other U.S. government sites:

[CIA World Factbook - Paraguay](#)

[U.S. State Department Background Notes: Paraguay](#)

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

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[Administración Nacional de Electricidad \(ANDE\)](#)

[Yacyreta Hydroelectric Power Plant](#)

[Itaipu Hydroelectric Power Plant](#)

[Paraguay's National Statistical Office](#)

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