

## COUNTRY ANALYSIS BRIEFS

# Paraguay/Uruguay

Last Updated: November 2006

### Background

**Paraguay is one of the world's largest electricity net exporters.**

Paraguay is a small, South American country and member of MERCOSUR. Its economy depends largely upon agriculture, which represents one-quarter of the country's economic activity and almost all of its exports. Following stagnant economic growth since the late 1990s, Paraguay has seen its economy rebound in recent years. The country's real gross domestic product (GDP) grew by 3.3 percent in 2005, following growth of 2.9 percent in 2004. A combination of economic growth in neighboring Brazil and Argentina and high world prices for its agricultural exports have fueled Paraguay's economic recovery.



**Uruguay has no domestic hydrocarbon reserves, though it is a large producer of hydroelectricity.**

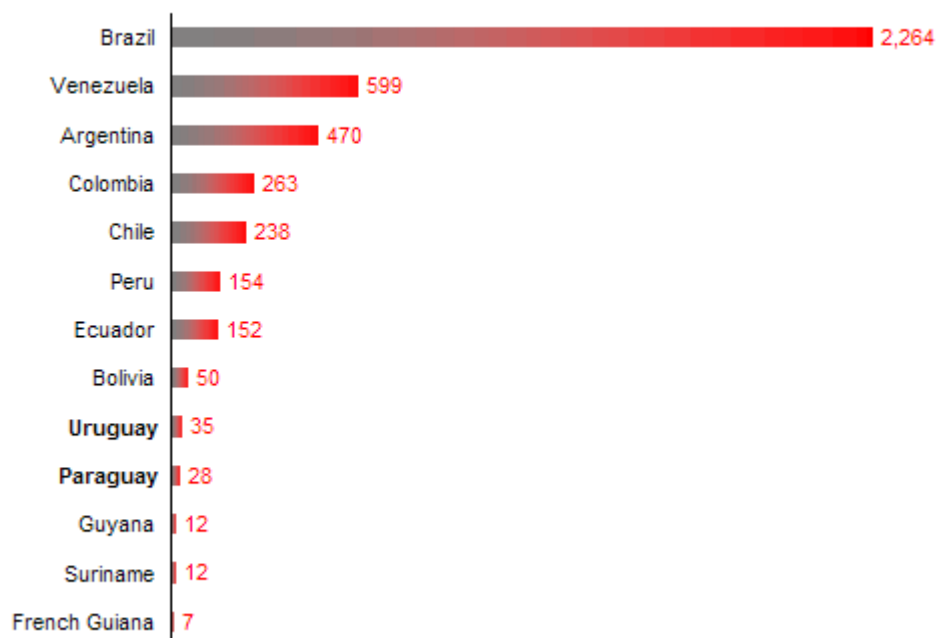
Uruguay suffered through an economic crisis during 1999-2002, with average real gross domestic product (GDP) contraction of minus 4.7 percent per year during that period. Uruguay is a member of MERCOSUR, and its economy is highly integrated with those of its MERCOSUR partners; as a result, economic and financial instability in Brazil and Argentina, the two largest economies in MERCOSUR, was a prime cause of Uruguay's economic troubles. In recent years, though, the economy has rebounded, with real GDP growth of 12.3 percent in 2004 and 5.2 percent in 2005. A reduction in inflation, increasing world prices for Uruguay's agricultural exports, revived economic growth in other MERCOSUR economies, and a \$2.9 billion aid package from the International Monetary Fund (IMF) have all driven Uruguay's economic recovery.

### Oil

**Neither Paraguay nor Uruguay have any proven oil reserves.**

EIA estimates that Paraguay consumed 28,000 bbl/d in 2006, while Uruguay consumed 35,000 bbl/d. Neither country currently produces any crude oil. In February 2006, Paraguay's Public Works Ministry announced that oil had been discovered in the western Chaco region by British oil company CDS, though CDS stated that the reservoir was too tight to facilitate unassisted oil production.

### South American Oil Consumption, 2006\*



Source: EIA Short Term Energy Outlook

Thousand Barrels per Day

\*Estimated

#### Downstream

State-owned Petroleos Paraguayos (Petropar) has a monopoly on all crude oil and petroleum product sales and imports in Paraguay. It operates Paraguay's sole refinery, the 7,500-bbl/d Villa Elisa facility. Uruguay also has a single oil refinery, the 50,000-bbl/d La Teja facility, operated by state-owned Administracion Nacional de Combustibles Alcohol y Portland (ANCAP).

Like many oil-importing countries in the Western Hemisphere, Paraguay and Uruguay have tried to foster the development of special deals for importing crude oil and refined products from Venezuela. Both countries signed deals in 2005 to receive crude oil imports from Venezuela under preferential financing terms. In December 2005, ANCAP and PdVSA, the Venezuelan national oil company, agreed to fund a study for the proposed doubling of the capacity at the La Teja plant. The project, which would cost an estimated \$800 million, would also upgrade facilities at the refinery so that it could handle heavier Venezuelan crude varieties.

#### Natural Gas

**Neither Paraguay nor Uruguay has any proven natural reserves.**

Paraguay has no proven natural gas reserves, and it neither produces nor consumes natural gas. In recent years, the country has sought to promote the consumption of natural gas as a way to decrease the use of firewood and charcoal, which has contributed to deforestation in the country. However, barriers to natural gas consumption include a lack of domestic natural gas production and the absence of import pipelines.

Uruguay has no proven natural gas reserves. In an attempt to diversify its energy usage away from oil and hydroelectricity, Uruguay began importing natural gas from Argentina in 1998. Since then, the country's natural gas consumption has steadily increased, reaching 4.2 billion cubic feet (Bcf) in 2004. The industrial sector consumes the largest share of this total.

#### Exploration Efforts

Paraguay has attracted some interest from international natural gas companies, with UK-based CDS Oil & Gas announcing in early 2004 that it had successfully completed a production test at its Independencia-1 well in the northwestern part of the country. Other companies that have signed exploration concessions with Paraguay's government include H.A & E.R. Exploraciones, Pilcomayo Petr leos S.A., Hidroener Consultora, Guaran  Exploration, Union Oil, Paraguay Gas, Boreal Petr leos, Aurora Petr leos and Amerisur. In June 2006, ANACP announced that it had

completed an appraisal of potential natural gas reserves in Uruguay's offshore Punta del Este basin. According to the company, the basin contains at least 1-2 trillion cubic feet (Tcf) of potential reserves, though there has not been any actual exploration of the area. ANACP hoped to bring first production from the area onstream by 2015.

#### *Sector Organization*

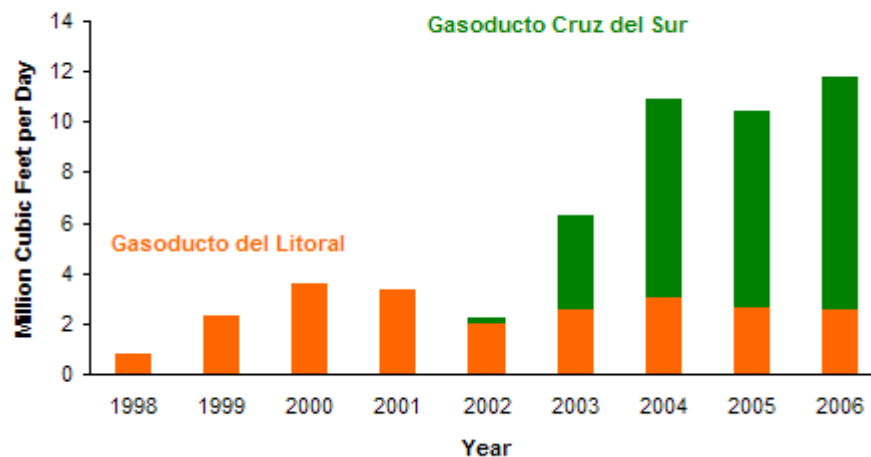
Gaseba and Conecta are responsible for distributing natural gas in Uruguay. Gaseba distributed natural gas in Montevideo, whereas Conecta controls distribution in the rest of the country. Gaz de France owns a majority stake in Gaseba. Brazil's Petrobras has controlled Conecta, since it purchased a majority stake in the company from Spain's Union Fenosa in 2005.

#### **Imports**

Paraguay has pursued several natural gas import options. In 2001, Brazil proposed the Gas Integration Project (Gasin), a natural gas pipeline linking Bolivia, Argentina, Paraguay, and Brazil. There has not been much progress to date on the implementation of this proposal. In 2002, the Bolivian and Paraguayan governments signed a preliminary agreement allowing for the construction of a pipeline from southern Bolivia to Asuncion. In June 2006, the two governments approved a plan to move forward with the pipeline, which would have an initial capacity of 700 million cubic feet per day (Mmcf/d) and require an investment of at least \$2 billion.

There are two natural gas pipelines connecting Uruguay to Argentina. The first, the CR. Federico Slinger (also known as Gasoducto del Litoral), runs 12 miles from Colon, Argentina to Paysandu, in western Uruguay. The pipeline, constructed and operated by ANCAP, began operations in November 1998 and has an operating capacity of 4.9 Mmcf/d. The second is the Gasoducto Cruz del Sur (GCDS), also known as the Southern Cross Pipeline. Operated by a consortium led by British Gas, the GCDS extends 130 miles from Argentina's natural gas grid to Montevideo and has a capacity of 180 Mmcf/d. The GCDS project also holds a concession for a possible, 540-mile extension of the pipeline to Porto Alegre, Brazil.

Uruguay's Natural Gas Imports, by Pipeline, 1998-2006\*



Source: Uruguay's National Energy Directorate

\*through August

#### *Issues Concerning Imports*

Due to natural gas shortages, Argentina has recently begun interrupting its natural gas exports to Uruguay and Chile. This has raised concerns in Uruguay about the future security of its natural gas supply and jeopardized plans to increase domestic natural gas consumption (see the [Argentina](#) and [Chile](#) Country Analysis Briefs for more information). As a result, Uruguay has discussed the possibility of importing natural gas directly from Bolivia; in March 2006, Uruguay and Bolivia agreed to launch a study to consider the feasibility of such a plan.

## **Electricity**

***Both countries depend upon hydropower for almost all of their***

Paraguay generated 51.8 billion kilowatthours (Bkwh) of electricity in 2004, while consuming only 3.1 Bkwh. Almost all of the country's electricity consumption comes from a single facility, the binational Itaipu hydroelectric dam (see below). Paraguay is one of the world's largest net exporters

**electricity generation.** of electric power. In 2004, Uruguay generated 8.2 billion kilowatthours (Bkwh) of electricity and consumed 9.9 Bkwh. To make up for this shortfall, Uruguay imported electricity from Argentina and Brazil.

### Sector Organization

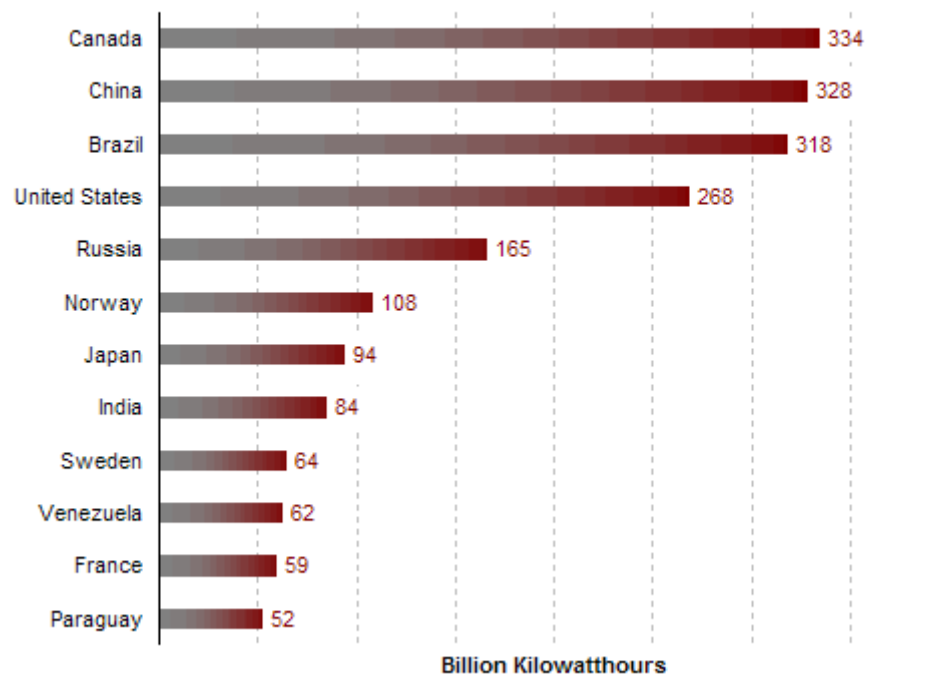
Paraguay's state-owned utility, Administracion Nacional de Electricidad (ANDE), controls the country's entire electricity market, including generation, distribution and transmission. It operates a single hydroelectric dam, Acaray, and six thermal power plants, with total installed capacity of 220 megawatts (MW). The company is also responsible for Paraguay's share of two bi-national hydroelectric facilities (see below). ANDE operates 2,100 miles of transmission lines and 670 miles of distribution lines. Over 92 percent of the country has electricity service.

The Administracion Nacional de Usinas y Transmisiones Electricas (UTE) is responsible for transmission and distribution activities in Uruguay, as well as most power generation. The Unidad Reguladora de la Energía y Agua (URSEA) has principle regulatory oversight of the sector. In 1997, Uruguay changed its electricity laws to permit independent producers to generate power, introducing competition to the sector. However, UTE has the option of taking 40 percent stakes in any new power plants built by private developers.

### Hydroelectricity

Paraguay operates two hydroelectric dams in cooperation with its neighbors: Itaipu (Brazil) and Yacyreta (Argentina). The Itaipu dam is the largest hydroelectric facility in the world, though, once completed, the Three Gorges Dam in China will be larger. Itaipu has 18 generators and a total installed capacity of 12,600 megawatts (MW), evenly shared between Paraguay and Brazil. In 2004, Paraguay consumed 16 percent of its share of Itaipu production, exporting the rest to Brazil. Yacyreta, completed in 1999, has 20 generators and a total installed capacity of 3,500 MW. Paraguay consumes less than 1 percent of its share of Yacyreta's production, exporting the rest to Argentina. In September 2006, Ente Binacional Yacyreta, the binational company responsible for operating the facility, announced that it was cancelling the planned Ana Cua expansion of the facility.

**World's Top Hydroelectricity Producers, 2004**



Source: EIA International Energy Annual

Four hydroelectric facilities provided the bulk of Uruguay's electricity generation: Terra (152 MW), Baygorria (108 MW), Palmar (333 MW), and Salto Grande (945 MW). The remainder of the

country's electricity generation comes from thermal power plants and mobile diesel generators, which UTE only calls upon during peak demand, or when weather conditions suppress output from its hydroelectric facilities. In May 2006, Uruguay and Argentina launched a binational study on a proposed new hydroelectric facility near Salto Grande with an installed capacity of 265 MW.

Under normal weather conditions, Uruguay's hydroelectric plants cover the country's electricity demand. However, seasonal variations can leave Uruguay at a severe power deficit, forcing the country to rely upon imports or costly oil- and diesel-fired generators. In 2001, UTE announced a tender for a new, 400-megawatt (MW), natural gas-fired power plant that would help diversify the country's electricity supply. However, a combination of factors forced Uruguay to withdraw the tender in early 2005, including the election of a new president in early 2005, questions regarding the [future of natural gas imports from Argentina](#), the cost of the facility (\$200 million), and the construction time (26 months) of the project. Instead, UTE offered a substitute tender for the construction of two small, 100-MW turbines capable of consuming either natural gas or fuel oil. UTE awarded this tender to General Electric (GE) in August 2005, with GE committing to build the first plant within 180 days of finalizing the contract.

### International Trade

As mentioned above, Paraguay is a major exporter of electric power to neighboring Argentina and Brazil. Uruguay, on the other hand, must often import electric power due to season variations in its hydroelectric output; on average, electricity imports peak in March. Most of Uruguay's imports come from Argentina, which reached 1.5 Bkwh during the first nine months of 2006. In recent years, Uruguay has begun to also import increasing amounts of electricity from Brazil. During the first nine months of 2006, it imported 0.8 Bkwh of electricity from Brazil. Uruguay has also proposed the construction of additional infrastructure to support greater Brazilian exports, including a new high-tension transmission line between the two countries and new, coal-fired power plant in southern Brazil that would target the Uruguayan market.

## Links

### EIA Links

[EIA - Country Information on Paraguay](#)

[EIA - Country Information on Uruguay](#)

### U.S. Government

[CIA World Factbook - Paraguay](#)

[CIA World Factbook - Uruguay](#)

[Country Background Notes --: Paraguay](#)

[Country Background Notes -- Uruguay](#)

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

[US Department of State, Consular Information Sheet -- Uruguay](#)

[US State Department Country Reports On Economic Policy and Trade Practices -- Uruguay](#)

### Foreign Government Agencies

[Administracion Nacional de Electricidad](#)

[Administración Nacional de Combustibles Alcohol Y Portland](#)

[Administración Nacional de Usinas y Transmisiones Electricas](#)

[Ministerio de Industria, Energía y Minería](#)

[Paraguay's National Statistical Office](#)

### Oil and Natural Gas

[Conecta](#)

[Gaseba](#)

[Gasoducto Cruz del Sur](#)

### Electricity

[Itaipu Hydroelectric Power Plant](#)

[Yacyreta Hydroelectric Power Plant](#)

## Sources

ANDE

Associated Press

Business News Americas

CIA World Factbook

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Dow Jones Commodities Service  
Economist Intelligence Unit ViewsWire  
EI Observador  
EFE News  
Factiva News Service  
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Gas Matters Today  
Global Insight  
Global Power Report  
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