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Puerto Rico Fact Sheet

The U.S. Commonwealth of Puerto Rico is the largest net energy importer in the Caribbean basin. Over the past several years, the government has supported significant new energy projects in order to diversify the commonwealth's energy mix.

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



GENERAL BACKGROUND

Puerto Rico enjoys a highly diversified economy, a strong tourist sector, and good trade relations with the United States, its largest trading partner. Despite mixed current economic indicators, Puerto Rico's short-term economic outlook looks relatively positive given the strengthening of the U.S. economy, which is expected to grow over 4% this year. The island's real gross

domestic product (GDP) is expected to grow 3.3% in 2004 and 2.8% in 2005, and 2.4% over the medium term (2006–10). As consumers take advantage of low interest rates, private consumption has increased. Although unemployment generally remains high, averaging 12.1% in 2003, it fell somewhat, to 10.8%, as of May 2004. Puerto Rico's foreign trade surplus at the end of 2003 stood at \$13.8 billion. Over the past year, high oil prices have had an adverse affect on Puerto Rico's economy and inflation, as the Commonwealth is heavily dependent on oil imports to meet its domestic energy needs, particularly for electricity generation.

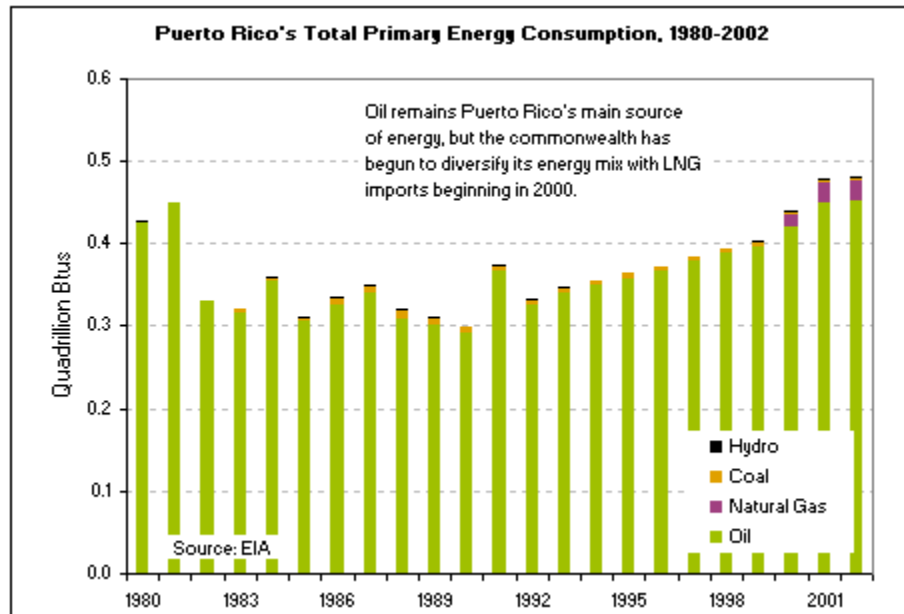
A key component of Puerto Rico's economic development plan is the eventual development of the [Port of the Americas](#). Accompanied by the construction of free trade zones and opening of modern industrial parks, by 2006, the port will be receiving marine cargo and facilitating its transshipment or export to markets in the Caribbean, South America, Central America, the U.S., and Europe. Construction of the port will assist in Puerto Rico's economy and employment. Despite optimism surrounding the Port of the Americas, to date, the government has not fully implemented its proposed multi-billion-dollar infrastructure program. The program has been subject to delays over the past two years. In addition, businesses have still been reluctant to increase investment and hiring.

In May 2004, Governor Sila Calderón, the first woman to serve in that position, announced that she would not seek a second term in office. Governor Calderón's decision led her party, the Popular Democratic Party (PDP), to select Resident Commissioner Anibal Acevedo Vila to run for the post

of governor in the upcoming November 2004 elections. Mr. Vila will run against Pedro Rossello of the New Progressive Party (NPP).

ENERGY OVERVIEW

Puerto Rico lacks domestic hydrocarbon reserves (including oil, natural gas, and coal) and relies on imports to meet its energy needs. Imported oil, mainly from U.S. and Caribbean suppliers, is the source of about 90% of Puerto Rico's power. Although consumption of natural gas has been increasing over the past few years, Puerto Rico still relies overwhelmingly on oil. Many industry analysts agree that gas- or coal-fired facilities are needed to supplement oil-



burning power plants. However, plans to widen and/or diversify the electric power supply through co-generation and agreements with independent power producers have barely progressed due to opposition from environmental groups and powerful labor unions.

OIL

In 2003, Puerto Rico consumed about 223,000 barrels per day (bbl/d) of oil, all imported, primarily for transportation and electric power generation. As of January 2004, Puerto Rico's refining capacity was 114,400 bbl/d, coming from two operating refining facilities: the Caribbean Petroleum Refining facility at Bayamon; and Shell Chemical's facility in Yabucoa. A third refinery, at Guayama, is currently used only for storage, with no potential for production in the near future. Puerto Rico also maintains storage at the Proterm facility with capacity of about 9 million barrels.

NATURAL GAS

In 2002, Puerto Rico consumed 200 billion cubic feet (Bcf) of natural gas, all imported for use at the EcoEléctrica gas-fired power plant in Peñuelas. In August 2000, Puerto Rico began importing liquefied natural gas (LNG) to supply the EcoEléctrica facility, which consists of a regasification facility and a 540-megawatt (MW) natural gas-fired power plant. EcoEléctrica has a long-term contract to purchase LNG from Tractebel LNG North America LLC.



COAL

In 2002, Puerto Rico consumed 176,370 short tons of coal, all of which was imported. A new 454-MW coal-fired plant in Guayama has increased the use of coal since becoming operational in 2002.

ELECTRICITY

In 2002, Puerto Rico generated an estimated 22.1 billion kilowatt hours (Bkwh) of electricity, predominantly from five oil-fired generators, with a fraction coming from small hydroelectric dams. As of 2002, installed generation capacity was 4.9 gigawatts. The five oil-fired plants are: the Costa Sur plant (1,090 MW); the Aguirre plant (900 MW); the Palo Seco plant (602 MW); the San Juan plant (400 MW); and the Arecibo plant (248 MW). The Puerto Rico Electric Power Authority (PREPA) accounts for a majority of net electricity generation, and is the Commonwealth's sole distributor of electric power. PREPA also purchases excess power generation from co-generators, primarily in the cement industry, and from independent power producers.

With power consumption increasing more than 3% per year for more than a decade, both PREPA and independent power producers have been investing in new capacity in order to meet growing demand and to diversify energy sources. One of the most important power plants in Puerto Rico is the EcoEléctrica facility (see above). EcoEléctrica was the world's first independent, privately-owned LNG terminal/combined cycle natural gas turbine power project when it began its operations in March 2000. The company plans to install a second 4.8-million-gallon LNG storage tank by 2006. In 2003, Spanish energy supplier Gas Natural acquired a 50% stake in EcoEléctrica, taking over the portion previously owned by Enron. In 2004, the U.K.'s International Power and Japan's Mitsui agreed to buy the remaining 50% stake in the plant. EcoEléctrica sells its power to PREPA under a 22-year power purchase agreement. In 2003, the project provided approximately 15% of the total power supplied to the island.

Another effort at fuel diversification is the [454-MW Aurora coal-fired plant](#), which began operating on November 29, 2002. The plant, Puerto Rico's first solid-fuel-fired power generating facility, is considered one of the cleanest coal-fired plants in the world. It utilizes [circulating fluid bed \(CFB\) technology and other emission control systems](#) to limit pollutants from the plant. Aurora provides electricity under a 25-year power purchase agreement with PREPA. The facility accounts for 9% of Puerto Rico's electric generating capacity and supplies approximately 15% of the Commonwealth's demand for electricity.

Renewable Energy

Caribe Waste Technologies, in conjunction with Thermoselect, HDR Engineering, Zachry Construction Company, and Montenay Power, is moving forward with development of the first [non-incineration waste-to-energy](#) power plant in Puerto Rico. Initially proposed in 2000, the plant, to be built at Caguas, will use a gasification process that will break down approximately 3,300 tons per day of waste into basic elements and electricity. The company hopes to have the plant operational by July 2007. Interstate General Company (IGC) is currently in negotiations with PREPA over a power purchase agreement; PREPA is also considering whether it will become a partner in the project.

Environment

Puerto Rico's 2002 energy-related carbon dioxide emissions totaled 34.5 million metric tons. In an effort to reduce emissions, Puerto Rico's long-term energy policy emphasizes a shift towards gas and renewables, energy conservation, and public transportation initiatives. As part of focus on transportation plans, a metrorail system in metropolitan San Juan, Tren Urbano (Urban Train), was completed in May 2003. The metrorail is America's first design-build underground transit project. Another Puerto Rican environmental initiative is the planned RENOVA Resource Recovery facility and eco-industrial park. If built, RENOVA is to process one-sixth of Puerto Rico's municipal waste, while the energy, metals, and construction materials generated will be used by nearby industries.

POLITICAL and ECONOMIC OVERVIEW

Governor: Sila Maria Calderón

Resident Commissioner/Representative to U.S. House of Representatives: Anibal Acevedo Vila

Population (2004E): 3.9 million

Area: 3,500 square miles (almost three times the size of Rhode Island)

Capital: San Juan

Ports: San Juan, Guanica, Punta Guayanilla, Guayama, Playa de Ponce

Languages: Spanish, English

Currency: U.S. Dollar

Nominal Domestic Product (GDP, 2003): \$74.4 billion

Real GDP Growth Rate (2003E) 1.9% (2004F): 3.3% (2005F): 2.8%

Inflation Rate (2003E) 8.1% (2004F) 8.7%

Unemployment Rate (2003E): 12.1%

Major Industries: Pharmaceuticals, electronics, apparel, food, instruments, cement, tourism

Merchandise Exports (2003E): \$56.3 billion

Merchandise Imports (2003E): \$42.5 billion

Merchandise Trade Balance Surplus (2003E): \$13.8 billion

ENERGY OVERVIEW

Oil Consumption (2003E): 223,000 bbl/d

Crude Oil Refining Capacity (1/1/04E): 114,400 bbl/d (company sources)

Natural Gas Consumption (2002E): 22 billion cubic feet

Coal Consumption (2002E): 176,370 short tons

Electric Generation Capacity (2002E): 4.9 gigawatts (thermal: 98%; hydroelectric: 2%)

Net Electricity Generation (2002E): 22.1 billion kilowatthours (Bkwh)

Electricity Consumption (2002E): 20.5 Bkwh

ENVIRONMENTAL OVERVIEW

Total Energy Consumption (2002E): 0.48 quadrillion Btu*

Energy-Related Carbon Dioxide Emissions (2002E): 34.5 million metric tons

Per Capita Energy Consumption (2002E): 123.2 million Btu (vs. U.S. value of 339.1 million Btu)

Per Capita Carbon Dioxide Emissions (2002E): 8.8 metric tons (vs U.S. value of 20.0 metric tons)

Energy Intensity (2002E): 6,756 Btu/\$ nominal (vs U.S. value of 10,736 Btu/\$nominal)

Carbon Dioxide Intensity (2002E): 0.48 metric tons/thousand \$ nominal (vs. U.S. value of 0.55 metric tons/thousand \$ nominal)

Fuel Share of Energy Consumption (2002E): Oil (94%), Natural Gas (5%), Coal (1%)

Fuel Share of Carbon Dioxide Emissions (2002E): Oil (95%), Natural Gas (4%), Coal (1%)

Status in Climate Change Negotiations: *party to the same agreements as the United States:* Annex I country under the United Nations Framework Convention on Climate Change (ratified October 15th, 1992). Under the negotiated Kyoto Protocol (signed on November 12th, 1998 - not ratified), the United States agreed to reduce greenhouse gases 7% below 1990 levels by the 2008-2012 commitment period.

Major Environmental Issues: Erosion; occasional drought causing water shortages

Major International Environmental Agreements: *party to the same agreements as the United States:* A party to Conventions on Air Pollution, Air Pollution-Nitrogen Oxides, Antarctic-Environmental Protocol, Antarctic Treaty, Climate Change, Endangered Species, Environmental Modification, Marine Dumping, Marine Life Conservation, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94, Wetlands and Whaling. Has signed, but not ratified, Air Pollution-Persistent Organic Pollutants, Air Pollution-Volatile Organic Compounds, Biodiversity, Desertification, Hazardous Wastes.

ENERGY INDUSTRY

State Organizations: *Electricity:* Puerto Rico Electric Power Authority (PREPA)

Independent Companies Operating in Puerto Rico: *Electricity:* Applied Energy Systems (AES) (using coal), EcoEléctrica (using natural gas); *Waste-to-Energy:* CaribeWaste Technologies; *Oil:* Caribbean Petroleum Corporation, Sunoco

Major Ports: Aguadilla, Arecibo, Fajardo, Guanica, Guayanilla, Guayama, Mayaguez, Playa de Ponce, San Juan

Refineries (1/1/04E Crude Capacity): Caribbean Petroleum Refining facility at Bayamon (38,000 bbl/d); Shell Chemical's facility in Yabucoa (76,400); refinery at Guayama is currently used only for storage.

* 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.

Sources for this report include: BMI Latin America Monitor; CIA World Factbook 2003 and 2004; Dow Jones News wire service; Global Insight; Economist Intelligence Unit ViewsWire; Financial Times; Global Power Report; International Market Insight Reports; Interstate General Company; Latin American Energy Alert; Latin American Power Watch; Lloyd's List International; Oil and Gas Journal; Oil Daily; Petroleum Economist; Puerto Rico Herald; U.S. Department of Commerce, International Trade Administration; U.S. Energy Information Administration; World Gas Intelligence.

LINKS

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[EIA - Country Information on Puerto Rico](#)

Links to other U.S. Government sites:

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