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Caribbean Fact Sheet

The Caribbean Sea region plays an important role as a petroleum processing and trans-shipment area. Trinidad and Tobago is becoming an increasingly significant supplier of liquefied natural gas (LNG) to regional markets and to the United States.

Note: Information contained in this report is the best available as of July 2005.



BACKGROUND

The islands of the Caribbean basin are predominantly net energy importers, with the exception of Trinidad and Tobago. Agriculture and natural resource extraction activities continue to constitute the basis of the islands' economies, though the tourism and service sectors are growing. In recent years, the Caribbean countries have been worried that higher global oil prices will impair their efforts to expand economically. In response, the island nations have been discussing ways to better integrate their energy sectors, especially in

regards to increased natural gas exports from Trinidad and Tobago to other islands. These efforts have also focused on the major external energy suppliers to the region, such as Mexico and Venezuela.

Over the past decade, the Caribbean states have made efforts to integrate their economies. The major regional organization is the Caribbean Community and Common Market (CARICOM), whose members include Antigua and Barbuda, The Bahamas, Barbados, Dominica, Grenada, Haiti, Jamaica, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, and Trinidad and Tobago; non-Caribbean countries Belize, Guyana, Suriname are also members, and the remaining islands, except Cuba, have either associate or observer status. Besides CARICOM, the other main economic organizations in the region include the Association of Caribbean States, the Eastern Caribbean Currency Union and the associated Eastern Caribbean Central Bank.

OIL AND NATURAL GAS

Overview

Only three countries in the Caribbean region have significant oil and gas reserves: Trinidad and Tobago, Cuba, and Barbados. According to *Oil and Gas Journal (OGJ)*, the three had in 2005 a combined 1.74 billion barrels of proven crude oil reserves and 28.4 trillion cubic feet (Tcf) of proven natural gas reserves. Trinidad and Tobago contains the large bulk of these resources, with 60 percent of proven crude oil reserves and 91 percent of proven natural gas reserves (see table). Of the three countries, Trinidad and Tobago is the only significant hydrocarbon producer.

Despite the lack of sizable oil reserves, the Caribbean countries are heavily dependent upon petroleum as their primary energy source. In 2002, the islands in the Caribbean region consumed a total of 2.4 quadrillion British thermal units (Btus) of total energy, of which petroleum accounted for 93 percent. Many of the Caribbean countries import oil from Mexico and Venezuela under favorable terms. Under the San Jose Pact, Barbados, the Dominican Republic, Haiti, and Jamaica receive oil and refined products from those two countries. Cuba also receives crude oil and petroleum products from Venezuela at a discounted rate.

Proven Hydrocarbon Reserves in the Caribbean, 2005		
Country	Oil (million barrels)	Natural Gas (billion cubic feet)
Barbados	2.9	5
Cuba	750	2,500
Trinidad and Tobago	990	25,887

Source: Oil and Gas Journal

Exploration and Production

Trinidad and Tobago

Trinidad and Tobago contains the large majority of the Caribbean's oil and gas production. In 2004, Trinidad and Tobago had 165,000 barrels per day (bbl/d) of total oil production, of which 131,600 bbl/d was crude oil. Oil production has risen in the past several years, but the country's oil reserves could be exhausted in less than a decade, unless significant new reserves are discovered. The largest oil producer in Trinidad and Tobago is BP Trinidad and Tobago (BPTT), owned by

BP (70 percent) and Repsol-YPF (30 percent). BPTT controls some 50 percent of Trinidad and Tobago's total crude oil production, but BP has begun to slightly scale-back its involvement in Trinidad and Tobago's oil sector; in 2005, BP sold its shares in the Teak, Samman, and Poui oil fields to Perenco and Neal & Massy Energy. State-owned Petroleum Company of Trinidad and Tobago (Petrotrin) controls most of the remaining oil production in the country.

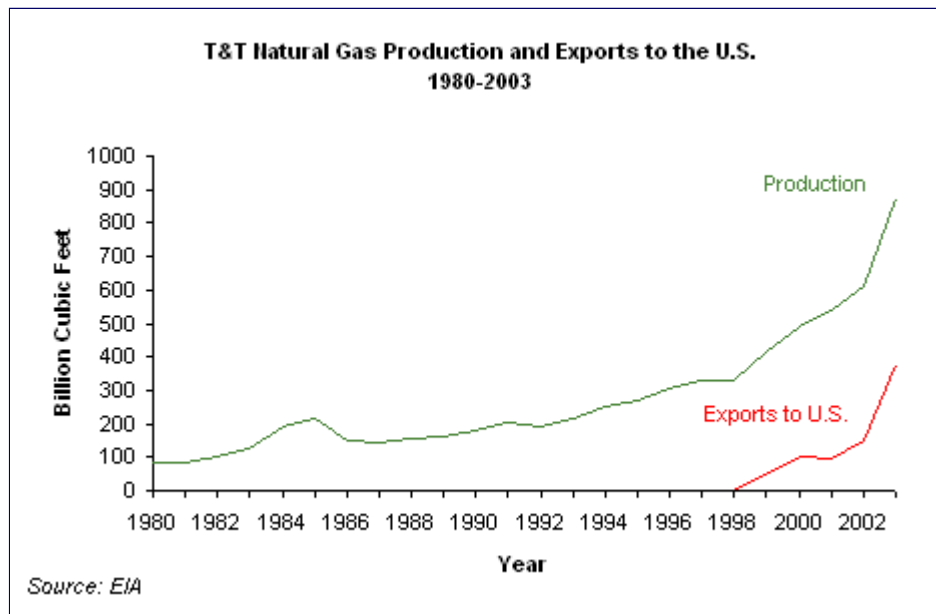
In January 2005, production began at the Greater Angostura field in Block 2(c). Operated by a consortium led by BHP Billiton, the Angostura field contains an estimated 310 million barrels of recoverable reserves. Initial production levels averaged 60,000 bbl/d, and with production levels to increase in subsequent stages, BHP Billiton was expected to surpass BPTT as Trinidad and Tobago's largest oil producer in the near future.

Alongside crude oil production, natural gas production in Trinidad and Tobago has skyrocketed in recent years. In 2003, the country produced 870 billion cubic feet (Bcf) of natural gas, up 42 percent year-on-year. The country has benefited from a large amount of foreign investment into the sector, with BPTT leading these efforts. Other important players in the natural gas sector include BG and Chevron.

In July 2003, BPTT started production at its Kapok field from an unmanned satellite platform connecting to the company's central processing hub known as Cassia B. Peak production from the field is expected to reach 1 Bcf per day (Bcf/d). Because Cassia B has a nameplate natural gas processing capacity of 1.6 Bcf/d of natural gas and 50,000 bbl/d of liquids, it is likely that BPTT will continue to develop natural gas resources in surrounding fields. In 2004, BP announced that it had discovered, in cooperation with Repsol-YPF, an estimated 2 Tcf of natural gas reserves in the Chachalaca field off the east coast of Trinidad and Tobago.

BG currently produces from two offshore zones, the East Coast Marine Area (ECMA) and the North Coast Marine Area (NCMA). In the ECMA, the company jointly owns with Chevron the Dolphin field. BG controls four fields in the NCMA, including Hibiscus, Poinsettia, Chaconia and Ixora. Most of BG's production flows directly to the Atlantic LNG project (see below), though it

also supplies a small amount of natural gas to domestic consumers. BG has additional plans to expand its natural gas operations in Trinidad and Tobago, including the development of the Dolphin Deep and Starfish fields in the ECMA and Block 3(a), which is adjacent to the Angostura development.



New Licensing Round

In May 2004, the government of Trinidad and Tobago selected oil companies for nine offshore blocks in the country's latest bid round of PSAs. The contractors included: PetroCanada for Blocks 1(a) and 1(b); Canadian Superior Energy for Block 5(c), and a joint-venture with Kerr-McGee and Primera Oil & Gas for Block 4(a); BHP Billiton and Total for Blocks 23(a) and 23

(b); BHP Billiton and Talisman Energy for Block 24; and Norsk Hydro and PetroCanada for Block 22. However, the exploration area that had attracted the most attention, Block 2(ab), was not awarded. The block had attracted particularly high interest due to its proximity to the Angostura field, and four companies placed bids on the area. However, the government announced that it would re-offer the block in the next licensing round.

Cuba

Cuba produced 67,000 bbl/d of oil in 2004, while the country consumed 211,000 bbl/d. Cuba's oil production has increased significantly in the past two decades, with the country only producing 16,000 bbl/d in 1984. Most of Cuba's oil production occurs in the northern Matanzas province, producing a heavy, sour crude that requires special processing at the country's refineries. Currently, two Canadian companies, Sherritt International and Pebercan, are producing oil in Cuba, under joint-venture production agreements with state-owned oil company Cubapetroleo (Cupet). Sherritt produces from the Yumuri, Varadero, Canasi and Puerto Escondido fields, and the company also controls four offshore exploration blocks. Pebercan holds contracts for five onshore blocks, though it only has current production from one, Block 7. In January 2005, the two companies announced that they had discovered an estimated 100 million barrels of additional recoverable reserves in the Matanzas region, including varieties of crude that are somewhat lighter than current production.

There has been considerable excitement over exploration activities in Cuba's offshore basins in the Gulf of Mexico. Industry analysts have reported that there could be at least 1.6 billion barrels of crude oil reserves in these basins. However, exploration activities have, so far, been disappointing. In 2001, Brazil's Petrobras abandoned exploration activities in Cuba's offshore basins following disappointing results, though the company stated in January 2005 that it would re-start offshore exploration. In July 2004, Repsol-YPF announced that its exploratory well in the Gulf of Mexico had discovered high-quality crude oil, however the company noted that it had not discovered commercially-viable quantities of that crude oil. Nevertheless, Repsol-YPF announced in June 2005 that it would drill a second exploratory well in the area.

Barbados

Oil production in Barbados for 2004 totaled 1,000 bbl/d, while the country consumed 10,000 bbl/d. As Barbados has no refining capacity, its oil is refined in Trinidad and Tobago, and then returned for domestic consumption. The island country also produces limited amounts of natural gas, 1.0 Bcf in 2003. Domestic natural gas production meets local demand, but the island expects that it will be forced to import natural gas or find alternatives in order to meet future consumption growth from power generation, households and the tourist industry.

Other Regional E&P Developments

In January 2005, the Jamaican government launched a licensing round for four onshore and 22 offshore exploratory blocks. The round, to run through the end of July 2005, came about due to a re-evaluation of existing geological data about the country that indicated it could contain commercially-viable oil and gas reserves. Grenada's government has also expressed interest in looking for oil and natural gas and is holding discussions with Trinidad and Tobago as a potential partner in joint exploration operations. In the Bahamas, U.S.-based Kerr-McGee acquired 100% interest in nine oil and natural gas offshore blocks in June 2003. The blocks are located 100 miles north of Freeport, Grand Bahama Island, covering 6.5 million acres. In the first phase, Kerr-McGee plans to acquire and interpret seismic data for the area.

Pipelines

Trinidad and Tobago has an extensive pipeline network linking offshore oil and gas fields to onshore landing points. Many of the natural gas pipelines directly connect production to the Atlantic LNG export facility (see below). Trinidad and Tobago is currently building the Cross Island pipeline (CIP), a 52-inch, 47-mile pipeline linking the east coast of Trinidad with Atlantic LNG. CIP will be the first 52-inch natural gas pipeline in the Western Hemisphere, and it will have an initial capacity of 2.4 Bcf/d. Trinidad and Tobago has also proposed the construction of intra-region pipelines that would directly link its production to other Caribbean islands; none of these proposals, however, have moved beyond the planning stages.

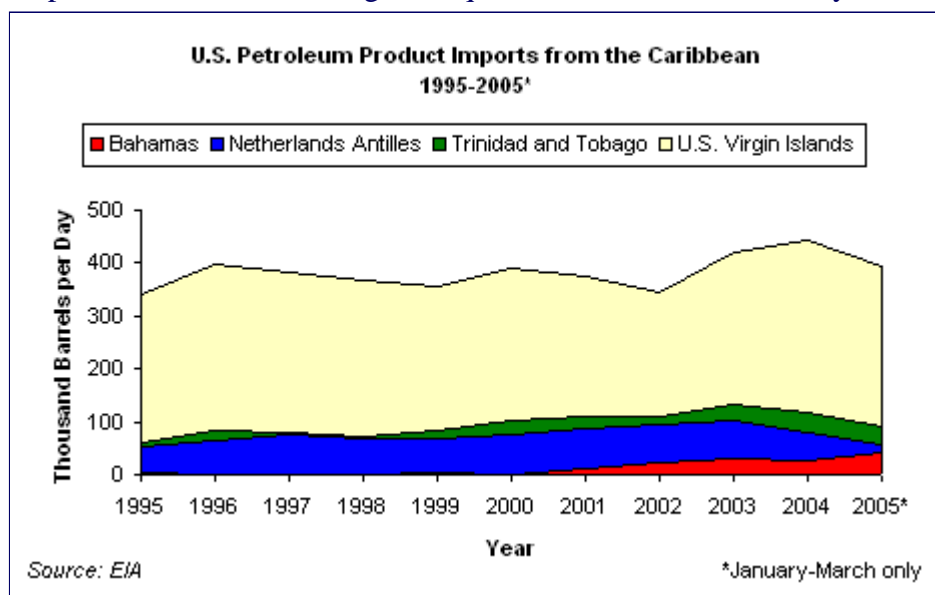
Liquefied Natural Gas (LNG)

Trinidad and Tobago is the largest supplier of LNG to the United States and one of the largest LNG exporters in the world. The Atlantic LNG Company, a consortium led by BP, BG, and Repsol-YPF, operates three LNG trains at Point Fortin, on the south-western coast of Trinidad. The first LNG train was completed in March 1999, with subsequent trains completed in August 2002 and April 2003. The three trains produce a combined 9.6 million metric tons (Mmt) of LNG per year, or the equivalent of 473.2 Bcf of natural gas. Atlantic LNG announced in April 2005 that its construction of a fourth train would finish by the end of 2005; the fourth train will have a capacity of 5.2 Mmt per year, making it the largest LNG train in the world. There has also been discussions between Atlantic LNG and the government of Trinidad and Tobago over the construction of a fifth and sixth train, though there are no firm plans as of yet to pursue these projects.

Some Caribbean islands have begun to look towards LNG as a way to diversify their energy consumption away from imported oil. In December 2004, Jamaica announced that it had reached an agreement with Trinidad and Tobago to import 1.1 Mmt of LNG per year from Trinidad and Tobago. The agreement necessitates the construction of a \$250 million LNG regasification terminal in Jamaica. AES operates the Andres facility in the Dominican Republic, an LNG regasification terminal with an integrated 310-MW, gas-fired power plant. In August 2000, Puerto Rico began importing LNG to supply the EcoEléctrica facility, a 540-MW natural gas-fired power plant.

The Bahamas has become a proposed gateway for LNG to enter the United States via Florida.

Currently, there are three projects in various stages of development, each integrating an LNG regasification facility in the Bahamas with a subsea pipeline connecting that facility to Florida: Ocean Express, sponsored by AES; Seafarer, proposed by a consortium of El Paso, Tractebel, and FPL Group, the unregulated upstream component of Florida Power and Light (FPL), Florida's regulated electricity utility; and Calypso, also proposed by the aforementioned consortium. All of these projects have run into some sort of regulatory difficulty from either U.S. or Bahamian officials. Furthermore, all of the proposed Bahama-Florida LNG projects were brought into serious doubt in June 2005, when FPL announced that it would not sign a long-term LNG supply contract with any of the project sponsors. Since FPL is the largest consumer of natural gas in Florida, the surprise announcement brings into question the financial viability of the projects.



Refining

According to *OGJ*, the Caribbean region has a combined 1.7 million bbl/d of refining capacity. Smaller refineries produce petroleum products for local demand, whereas the larger facilities are geared towards exports to the United States and other regional markets. The largest refining capacity in the region is in the U.S. Virgin Islands; a single refinery,

jointly owned by Venezuelan state oil company PdVSA and Amerada Hess, Hovensa, has a crude oil capacity of 495,000 bbl/d. Other large facilities in the region include the 320,000-bbl/d Emmastad in the Netherlands Antilles, operated by PdVSA; the 230,000-bbl/d San Nicolas in Aruba, operated by Valero; and the 165,000-bbl/d Pointe-a-Pierre in Trinidad and Tobago, operated by Petrotrin. Cuba also has significant refining capacity, 301,000 bbl/d, with four facilities operated by Cupet.

During the first three months of 2005, the United States imported 482,000 bbl/d of petroleum products from the Caribbean. The U.S. Virgin Islands represents the bulk of the region's exports to the United States (302,000 bbl/d). There are numerous proposals in various stages of development to significantly increase refining capacity in the Caribbean, mostly for eventual export to the United States; proximity to crude oil produced in Mexico and Venezuela and a perceived shortfall in U.S. domestic refining capacity are driving these efforts. Valero has discussed expanding the refinery's capacity to 500,000 bbl/d. In August 2002, the government of Trinidad and Tobago granted Soreco Inc. approval for the construction of the 224,000-bbl/d Sanemeta refinery; however, it remains unclear whether the project will move forward due to difficulties of securing \$2 billion in loans for the project. A proposed \$2 billion refinery near St. Elizabeth, Jamaica has entered advanced planning stages. The Jamaican government has tentatively approved the facility, pending an environmental impact statement. Project sponsor Petroleum Corporation of Jamaica (PCJ) has stated that the facility will have an initial crude refining capacity of 250,000 bbl/d.

ELECTRICITY Overview

In 2003, the Caribbean region had a total installed, electricity-generating capacity of 16.6 gigawatts (GW); in that year, the region consumed 67.3 billion kilowatthours (Bkwh) while producing 72.4 Bkwh. The single-largest producer and consumer of electricity in the region is Puerto Rico, followed by Cuba. Most electricity produced in the region comes from conventional thermal sources, chiefly oil-fired power plants. The islands' reliance on fuel oil makes them highly vulnerable to international oil prices. As a result, many islands have begun to look to alternatives, such as LNG and renewables, as a way to reduce their dependence upon foreign oil. While the region runs an electricity surplus, there are specific parts of the Caribbean that need additional capacity. Several countries, such as Haiti and the Dominican Republic, experience power outages and blackouts on a regular basis.

Country-Specific Issues

The Dominican Republic

The Dominican Republic's frequent blackouts, lasting at times up to 20 hours per day, have sparked public demonstrations, some of which have been violent. The current situation arises from a lack of investment in generating capacity. The government has opened the sector to foreign companies, but many have liquidated their investments there due to chronic payment arrears from the government-owned electricity distribution company. As a result, the government has begun to re-nationalize generation assets. It remains unclear whether the situation will improve in the near-term, particularly when the government reportedly owes power companies over \$400 million. The devalued peso, in particular, continues to hurt the solvency of private companies, which receive payments in pesos, but pay debts and other services in U.S. dollars.

Jamaica

In March 2001, the U.S.-based utility, Mirant Corporation, completed an 80 percent acquisition of formerly government-owned Jamaica Public Service Company (JPSC), a fully integrated company which generates, transmits, distributes and sells power on the island. Currently the Jamaican government is formulating a new national energy policy, which is considering alternative fuels to lessen its dependence on fuel oil. As mentioned previously, the government hopes to import LNG for new gas-fired power plants.

Puerto Rico

In 2003, Puerto Rico consumed 21.4 Bkwh and produced 23.0 Bkwh of electric power. Most of Puerto Rico's power generation comes from five, oil-fired power plants, with the 1,090-MW Costa Sur plant being the largest. Puerto Rico has attempted to diversify its power generation away from oil with projects such as the above-mentioned EcoElectrica gas-fired plant and the 450-MW Aurora coal-fired plant. The island has also invested into renewable energy sources, such as a non-incineration waste-to-energy plant in Caguas developed by Caribe Waste Technologies.

Sources for this report include: Business News Americas; CIA World Factbook; Chemical News & Intelligence; Chicago Tribune; Dow Jones; Global Insight; Economist Intelligence Unit ViewsWire; El Universal (Mexico); Energy Day; Expansion; Financial Times; The Gleaner; Inside F.E.R.C.; International Herald Tribune; International Market Insight Reports; International Oil Daily; LatinFinance; Latin America Monitor; Latin American Newsletters; Liquid Africa; Lloyd's List; National Post (Canada); Natural Gas Week; Oil and Gas Journal; Oil Daily; Petroleum Economist; Platts Oilgram News; Power; Sun-Sentinel (Fort Lauderdale, FL); U.S. Energy Information Administration; Wall Street Journal; World Gas Intelligence; World Markets Analysis.

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[The Organization of American States](#)

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[Grenada Electricity Services Ltd \(GRNELEC\)](#)

[Jamaica Public Service Company Ltd](#)

[Organismo Coordinador del Sistema Eléctrico Interconectado de la República Dominicana](#)

[Puerto Rico Electrical Power Authority \(PREPA\)](#)

[St. Lucia Electricity Services Ltd](#)

[Trinidad & Tobago Electricity Commission](#)

[Water en Energiebedrijf N.V.](#)

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Government

[Ministry of Energy and Energy Industries \(Trinidad and Tobago\)](#)

Oil and Natural Gas

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[Petrojam Limited \(Jamaica\)](#)

[Refinería Dominicana de Petróleo](#)

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