Colombia

Last Updated: June 2005

Background

Colombia is an important petroleum and coal producer, although political unrest and stagnant reserves have led to decreased exports in recent years. Colombia aims to boost hydrocarbon exploration to preserve its status as a net oil exporter in the longer term.

Colombia has faced decades of political and economic struggles, much of it linked to narcotics trafficking and civil war. Since taking office in August 2002, President Alvaro Uribe has enacted political, fiscal and social reform policies, combined with increased security measures in order to promote economic growth and stability. The policies of the Uribe administration have had some success in improving economic conditions and the security situation in the country. During 2004, Colombia's real gross domestic product (GDP) grew by 4.0 percent, the same as in 2003. Inflation declined in 2004 to 5.0 percent, a significant improvement over the near 8 percent rate seen in 2003.

Regaining authority over rural territory was a major tenet of Uribe's 2002 presidential campaign. Since 2002, Uribe's "democracy security" strategy is believed to have contributed to the containing of two leftist insurgent groups, the Fuerzas Armadas Revolutionaries de Colombia (FARC) and the Ejército de Liberación Nacional (ELN), as well as a right-wing paramilitary organization, the Autodefensas Unidas de Colombia (AUC). Proposed peace talks with the ELN (the country's second-largest guerilla group), an increased security presence across the country, and a tentative agreement to demobilize the AUC by 2005 have helped to reduce the number of attacks on energy infrastructure.

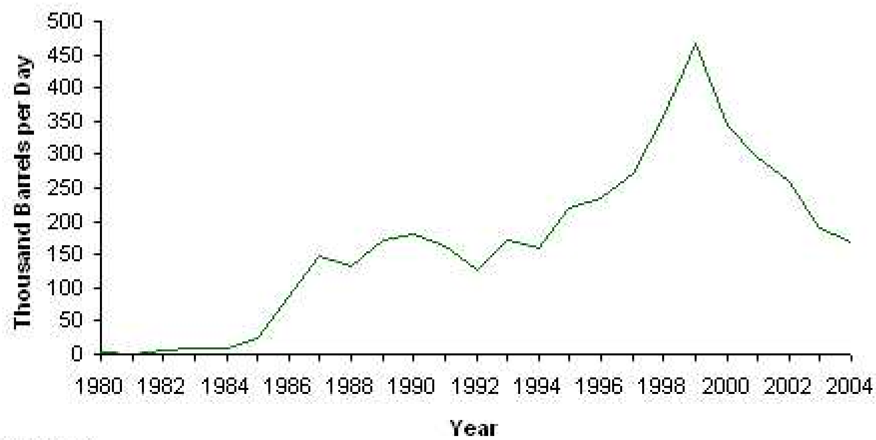
However, despite the success of the Colombian economy under Uribe, the country still faces serious challenges. Unemployment in Colombia stood at 12 percent in April 2005, an improvement over recent years, but still a high level considering the overall economic condition of the country. While the security situation has improved dramatically, Colombia's longstanding civil conflict has still taken its toll on the country's energy sector, particularly the oil industry. As oil reserves and production decline, the government has been boosting its security efforts in order to attract critical new investment. In addition, Colombian officials warn that if no significant new oil reserves are discovered in the near future, the country soon will become a net importer of petroleum.

Oil

Colombia's oil production has declined significantly since peaking in the late 1990s.

According to Oil and Gas Journal (O&GJ), Colombia had 1.54 billion barrels of proven crude oil reserves in 2005, the fifth-largest in South America, but a 13 percent decline from 2004. The country produced 530,000 barrels per day (bbl/d) of oil in 2004, 5 percent less than the 560,000 bbl/d produced in 2003. Colombia's oil production has declined steadily since 1999, when it peaked at 830,000 bbl/d. Colombia consumed 261,000 bbl/d of oil in 2004. The country exports about half of its oil production, with the bulk of those exports (138,000 bbl/d) going to the United States in 2004. However, Colombia's oil exports to the United States have declined significantly in recent years, with 2004 export levels down 29 percent from 2003 and 58 percent from 2002.

Colombia's Petroleum Exports to the United States
1980-2004



Source: EIA

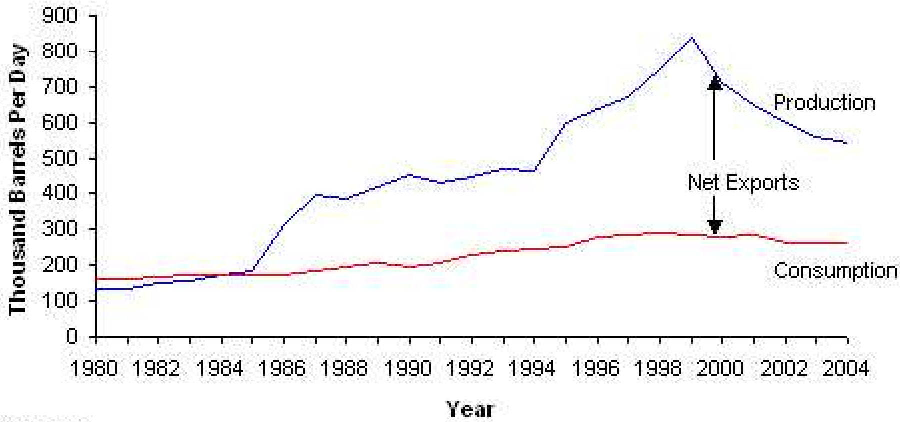
Since 1999, Colombia's government has taken measures to make the investment climate more attractive to foreign oil companies. Sector liberalizations include allowing foreign oil companies to own 100 percent stakes in oil ventures; the establishment of a lower, sliding-scale royalty rate on oil projects; longer exploration licenses; and forcing Ecopetrol to compete with private operators. The sliding scale royalty schedule has been one of the most successful measures introduced by the government. The scale establishes an 8 percent royalty rate on the smallest oil fields; with over 90 percent of Colombia's fields containing less than 60 million barrels, the low royalty rate has encouraged investments by small- and medium-sized operators. The reforms have sparked a renewed interest in Colombia's upstream sector, with the government signing a record number of production contracts with foreign oil companies during 2004. ANH expected to approve over 30 exploration licenses during 2005.

The improvement in Colombia's security situation has been a significant contributor to the renewed interest by international oil companies. Kidnappings in the country fell by 60 percent in 2004, and there was a substantial decline in the number of attacks against oil infrastructure. For example, there were just 34 attacks against the Cano-Limon oil pipeline in 2003, down from 170 in 2001.

Exploration and Production

The bulk of Colombia's crude oil production occurs in the Andes foothills and the eastern Amazonian jungles. The largest field in the country is the Cusiana/Cupiagua complex operated by BP, with 2003 production of 193,000 bbl/d. However, that level is a sharp reduction from the 434,000 bbl/d produced from the field in 1999. Colombia's second largest field is the Cano Limon, operated by Occidental. Production from that field averaged 95,000 bbl/d in 2003, down from a peak of 135,000 bbl/d in 1998. In April 2004, Occidental extended its contract for Cano Limon; under terms of the deal, Ecopetrol's share of production will increase to 55 percent by 2008, with Occidental investing $263 million into the field over a period of six years. Other important oil projects in Colombia include the Suroriente field, operated by a consortium led by Petrotesting Colombia; the Guando field, operated by Petrbras and Canada's Nexen; and the Orito block, operated by Canada's Petrobank Energy and Resources.

Colombia's Oil Production and Consumption
1980-2004



Source: EIA

Colombia has numerous, smaller fields spread throughout the oil-producing regions of the country. Vast unexplored and potentially hydrocarbon-rich territories remain in Colombia, which shares many of the geological features of its oil-rich neighbor Venezuela. In particular, the Llanos and Magdalena basins are thought to have great potential. During the last several years, some of the companies that signed E&P contracts with Ecopetrol include, Chile's Sipetrol; Colombian-based Argosy Energy International; Petrominerales, a subsidiary of Canada's Petrobank; Petrobras; Nexen; US-based Mercantile Oil & Gas; Occidental; and Russia's Lukoil. There has also been renewed interest in Colombia's offshore basins. In 2005, BHP Billiton signed an agreement to allow exploratory drilling in the Fuerte Block off Colombia's Caribbean coast. ANH has also begun seismic studies of offshore blocks in the Pacific Ocean, which industry analysts believe could hold significant oil reserves.

Much of Colombia's crude oil is lighter and sweeter than that of other major Latin American oil producers, with its three export crude oils (Cusiana, Cupiagua and Orito) ranging between 28° and 36° API.

Even though there is considerable optimism about the prospects of greater opportunities in Colombia's upstream oil sector, there have been a series of significant setbacks for international oil majors. In March 2003, Ecopetrol officials announced that they had discovered one of the largest oil deposits in over a decade, the Gibraltar-1 in the Sirirí Block. They estimated that the area contained 200 million barrels of oil. However, following criticism of the study by industry analysts and government officials, Ecopetrol released a revised estimate of potential reserves in the Gibraltar-1 field in 2004 that showed only 15 million barrels of oil and 630 million cubic feet (Mmcf) of natural gas. In 2003, BP failed to find commercially-viable oil reserves in the Niscota block after after spending $45 million and drilling to 19,000 feet.

Pipelines

Colombia has five major oil pipelines, four of which connect production fields to the Caribbean export terminal at Covenas. These include the 500-mile Ocensa pipeline, which transports 615,000 bbl/d from the Cusiana and Cupiagua fields; the 460-mile Cano Limon pipeline; and the smaller Alto Magdalena and Colombia Oil pipelines. The fifth pipeline, the TransAndino, transports crude from Colombia's Orito field in the Putumayo basin to Colombia's Pacific port at Tumaco; TransAndino also carries crude oil produced in Ecuador.

Colombia's oil pipelines have been popular targets for rebel groups, including sabotage and oil theft, although the frequency of attacks has declined dramatically since 2002. As mentioned above, attacks against the Cano-Limon pipeline have dropped dramatically, though a bombing in February 2005 shut the pipeline for several weeks. The TransAndino and Ocensa pipelines experienced only a handful of attacks in 2003.

The Colombian government has held discussions with Venezuela about a proposed oil pipeline to export that country's crude oil to Colombia's deepwater Pacific ports. The plan, to be mostly financed by Chinese oil companies, would include 620 miles of new pipelines and utilize unused capacity on existing ones. In 2004, Brazil's Synergy Group announced that it would build a $700 million, 435-mile pipeline linking its Rubiales field to the Ocensa pipeline. The company hoped to complete the 80,000-bbl/d project by 2008.

Downstream

According to *O&GJ*, Colombia had 285,850 bbl/d of crude refining capacity in 2005. The country has five major refineries, all owned by Ecopetrol. The largest is the Barrancabaermeja-Santander facility, with a capacity of 205,000 bbl/d. There are plans to double the capacity of the 75,000-bbl/d Cartagena facility, but funding problems have delayed that project. Although Colombia is a net oil exporter, it must import petroleum products, as domestic demand outstrips refining capacity. In late 2004, the Colombian government approved plans to build a privately-financed refinery in Sebastopol. The 30,000-bbl/d project has also received supported from the US Export-Import Bank and the World Bank's International Finance Corporation (IFC).

Natural Gas

The Colombian government has sought to encourage greater domestic consumption of natural gas.

OGJ reported that Colombia had proven natural gas reserves of 4.0 trillion cubic feet (Tcf), a decline from 4.5 Tcf in 2004. The country produced and consumed 215 billion cubic feet (Bcf) in 2003, both slightly down from 2002. The government's Plan de Masificación de Gas Natural (Natural Gas Mass Consumption Plan) aims to increase domestic natural gas use and establish Colombia as the “gas hub” for the Andean region.

Sector Organization

Colombia has natural gas reserves spread across 18 basins, seven of which have active production. The bulk of Colombia's natural gas reserves are located in the Llanos basin, although the Guajira basin accounts for most of current production. Chevron (formerly ChevronTexaco) is the largest natural gas producer in Colombia. Its three fields in the Guajira basin, Chuchupa, Ricohacha, and Ballena, produce an average of 490 Mmcf per day (Mmcf/d).

In October 2004, U.S.-based Drummond, one of the largest coal producers in Colombia, announced that it would begin drilling for coal bed methane (CBM) at its properties in the country. While most of the gas will fuel power generation at its facilities, Drummond also planned to sell any surpluses on the open market. In June 2004, BP was awarded a natural gas production license for the Cuisian/Cupiagua complex, which the company hopes will compensate for the reduction in oil production at the site (see above). In May 2004, a consortium of Petrobras (40 percent), ExxonMobil (40 percent), and Ecopetrol (20 percent) signed an agreement to explore for natural gas in the Tayrona block in the offshore Caribbean. Petrobras will operate the exploration phase, while ExxonMobil will operate any production stemming from the exploration activities. The agreement marked the first upstream investment by ExxonMobil in Colombia since 1996.

Pipelines

Ecogas operates some 2,000 miles of natural gas trunk pipelines in Colombia. The three main lines include the Ballena-Braccancabermaja, linking Chevron's Ballena field on the northeast coast to Braccancabermaja in central Colombia; the Barrancabermeja-Nevia-Bogota line, which integrates the Colombian capital into the transmission network, and the Mariquita-Cali line through the western, Andean foothills. There are other small stretches of pipeline operated by private firms.

In April 2003, Colombia and Venezuela agreed to build a $320 million, 200-Mmcf/d natural gas pipeline linking Colombia's Guajira basin to Venezuela's Maracaibo region. Colombia has also held discussions with Panama and Ecuador about extending the pipeline into those countries. Initially, the pipeline will carry natural gas from Colombia to Venezuela, but there has also been talk of eventually reversing the flow of the pipeline to allow Venezuelan natural gas exports to Colombia and Central America.

In recent years, Columbia's natural gas sector has been a target of guerillas and saboteurs, but increased security measures have lead to a reduction in attacks, costs associated with repairs, and lost production.

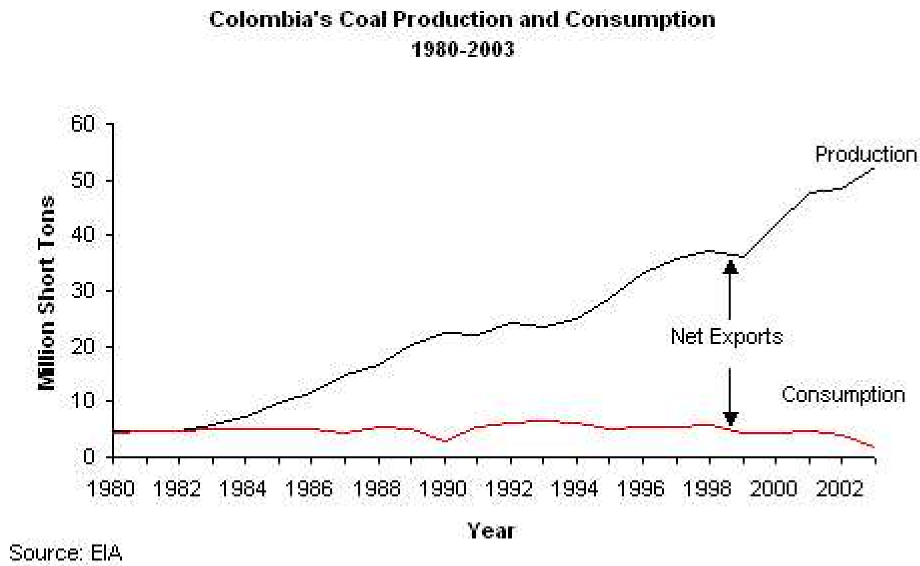
Coal

Colombia is one of the world’s largest coal exporters.

Colombia had 7,287 million short tons (Mmst) of proven coal reserves in 2003, consisting of high-quality bituminous coal and a small amount of metallurgical coal. The country has the second-largest coal reserves in South America, behind Brazil, with most of those reserves concentrated in the Guajira peninsula in the north and the Andean foothills. Colombia's coal is relatively clean-burning, with a sulfur content of less than 1 percent. Over the past decade, production has more than doubled, to 52.5 Mmst in 2003. It is likely that Colombia’s coal production will continue to increase in coming years, as exploration and profitable developments continue throughout the north and interior of the country.

Sector Organization

Colombia completed the privatization of its coal sector in 2004 with the shuttering of Minercol, the former state-owned coal company. The largest coal producer in the country is the Carbones del Cerrejon consortium, composed of Anglo-American, BHP Billiton, and Glencore. The consortium operates the Cerrejon Zona Norte (CZN) project, the largest coal mine in Latin America and the largest open-cast coal mine in the world. CZN, which consists of an integrated mine, railroad, and coastal export terminal, produces some 22 Mmst per year.



Drummond operates the second-largest coal mine in Colombia, La Loma, also an integrated mine-railway-port project. La Loma produced 12 Mmst of coal in 2001. The company also owns the El Descanso mine, in the vicinity of La Loma. In 2004, Glencore announced that it would purchase the Jagua coal mine, Colombia's third-largest, combining it with its existing integrated coal project, Prodeco. The acquisition will give Glencore total coal production capacity in Colombia of 8.3 Mmst per year.

Currently, most Colombia coal exports go to North America, Europe, and Latin America, as the vast majority of Colombia's coal producing and exporting infrastructure is located on the Caribbean coast. However, the country hopes that a planned expansion of the Panama Canal would allow it to export coal to new markets in Asia. Some of the non-integrated coal mines in Colombia export coal via the Venezuelan ports of La Cieba and Maracaibo. In early 2005, tensions between the two countries over the capture of Rodgrigo Granda, the "foreign minister" of the Revolutionary Armed Forces of Colombia (FARC) caused Venezuela to close access to these ports, affecting some exports.

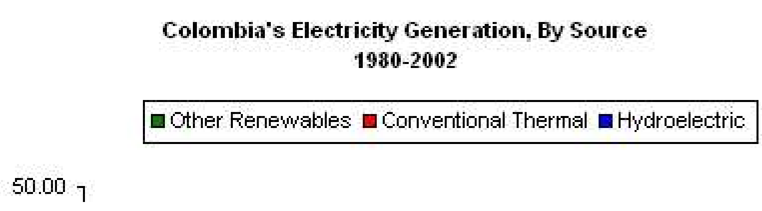
Electricity

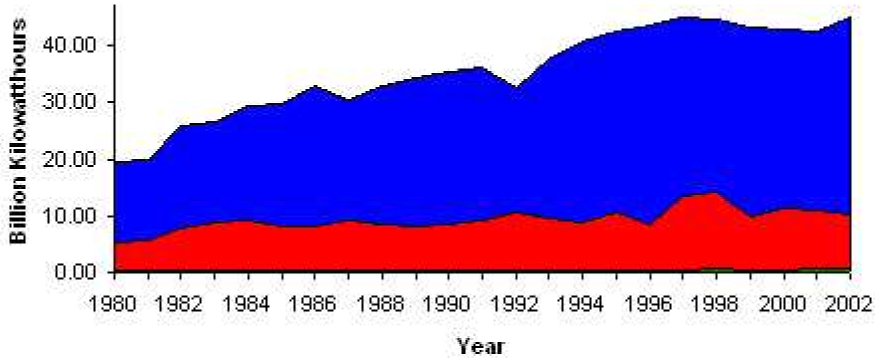
Colombia is dependent upon hydropower for the bulk of its electricity generation.

Colombia had 13.1 gigawatts of installed electricity generating capacity in 2002, with some 90 power plants in the country. In 2002, Colombia generated 44.9 billion kilowatthours (Bkwh) of electricity while consuming 41.1 Bkwh. As is common with South American countries, the bulk of Colombia's electricity generation (77 percent) comes from hydroelectricity, with conventional thermal (mostly coal and natural gas) and other renewables making up the remainder.

Sector Organization

The Colombian electricity sector contains a mixture of public- and privately-owned companies. Deregulation in the 1990s opened the sector to private investment and established a wholesale electricity market. CREG has principle regulatory oversight of the sector. CREG mostly maintains a strict division between generation, transmission, and distribution activities, though it does allow some legacy companies to maintain vertically-integrated operations. In the generation sector, there are about three dozen active companies, and the major players are EMGESA, EEPM, ISAGEN, and EPSA. EMGESA is the largest, controlling about one-fifth of Colombia's generating capacity. As part of liberalization plans, the Colombian government has continued to reduce its stake in generating companies. The largest electricity distributing company in Colombia is CODENSA, which serves over one million customers in Bogota and surrounding areas.





Source: EIA

Colombia's electricity transmission system consists of two grids, one serving the Atlantic coast and the other serving the interior, with numerous interconnectors running between the two. While numerous companies own different parts of the grid, the largest holder is Interconexion Electrica SA (ISA), controlling about 70 percent of the system. Formerly wholly-owned by the Colombian government, the public stake in ISA shares has declined to 59 percent. In 2005, ISA began construction of two high-voltage transmission lines connecting Bogota to the Atlantic coast that would add capacity and redundancy to the system.

Despite significant improvements in the security situation in the country, Colombia's electricity sector continues to face serious supply and financial challenges due to lack of investment, security risks and power theft. Repeated attacks on electricity infrastructure increase the risk of blackouts and raise cost of operation for the electricity sector.

Hydroelectricity

As mentioned above, hydroelectricity is the dominant source of electric power generation in Colombia. The largest facilities in the country include the San Carlos (1,240 MW), Guavio (1,000 MW) and Chivor (1,000 MW) hydroelectric plants. Two new hydro projects are scheduled for completion in coming years, the Pescadero-Ituando plant (2008) and the Porce III plant (2009). The country's reliance on hydropower has led to supply crunches in the past; in 1992, a severe drought left the country unable to meet electricity demand, leading to power rationing and periodic blackouts. As a result, the government has encouraged the construction of coal and natural gas-fired power plants to diversify the electricity supply. Depite these efforts, the percentage of Colombia's electricity generated by hydropower has actually increased since the early 1990s.

Regional Interconnections

Colombia has an active electricity trade with its neighbors. The country often supplies surplus power to neighboring Ecuador. There are two interconnecters between the countries, both completed in 2003. There have also been initiatives to increases electricity trading between Colombia and Venezuela. The Andean Community, which includes Colombia, has taken steps to further integrate the power sectors of its members with an eventual goal of creating a single, regional electricity market. Finally, Colombia has looked towards Central America as a potential source of electricity trading.

Profile

Country Overview

President	Alvaro Uribe Veléz (Since 7 August 2002)
Location	Northern South America, bordering the Caribbean Sea, between Panama and Venezuela, and bordering the North Pacific Ocean, between Ecuador and Panama
Population (2005E)	43.0 million
Official Language	Spanish
Religion	Roman Catholic (90%)
Currency/Exchange Rate (6/14/05)	US$1 = 2,335.97 Colombian pesos (COP)
Inflation Rate (consumer prices) (2004E)	5.9% (2005F): 5.2%
Nominal Gross Domestic Product (GDP, 2004E)	$97.4 billion
Real GDP Growth Rate (2004E)	4.0% (2005F): 3.9%
Merchandise Exports (2004E)	$17.0 billion

Merchandise Imports (2004E)	$15.9 billio

Energy Overview

Proven Oil Reserves (1/1/05E)	1.54 billion barrels, according to Oil and Gas Journal
Oil Production (2004E)	530,000 barrels/day (bbl/d), of which 508,000 bbl/d was crude oil
Oil Consumption (2004E)	261,000 bbl/d
Crude Oil Exports to the U.S. (2004E)	138,000 bbl/d
Crude Refining Capacity (1/1/05E)	285,850 bbl/d, according to Oil and Gas Journal
Natural Gas Reserves (1/1/05E)	4.0 trillion cubic feet, according to Oil and Gas Journal
Natural Gas Production (2003E)	215 billion cubic feet (Bcf)
Natural Gas Consumption (2003E)	215 Bcf
Recoverable Coal Reserves (2003E)	7.3 billion short tons
Coal Production (2003E)	52.5 million short tons (Mmst)
Coal Consumption (2003E)	1.9 Mmst
Electric Generating Capacity (2002E)	13.1 gigawatts (63.3% hydroelectricity, 36.7% thermal)
Electric Generation (2002E)	44.9 billion kilowatthours (Bkwh) (77% hydroelectricity, 21% Bkwh thermal)
Electric Consumption (2002E)	41.1 Bkwh
Total Energy Consumption (2002E)*	1.2 quadrillion Btu (0.3% of world total energy consumption)
Per Capita Energy Consumption (2002E)*	27.9 million Btu (vs. U.S. value of 339.1 million Btu)
Energy Intensity (2002E)	4,527 Btu/ $1995 nominal-PPP (vs. U.S. value of 9,348 Btu/ $ nominal)**
Fuel Share of Energy Consumption (2002E)	Oil (44.0%), Natural Gas (17.0%), Coal (10.0%

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2002E)	58.9 million metric tons (0.2% of world carbon dioxide emissions)
Per Capita Carbon Dioxide Emissions (2002E)*	1.35 metric tons (vs. U.S. value of 20.0 metric tons)
Carbon Dioxide Intensity (2002E)	0.22 metric tons/thousand $1995 (vs. U.S. value of 0.55 metric tons/thousand $ nominal)**
Fuel Share of Carbon Dioxide Emissions (2002E)	Oil (61.0%), Natural Gas (20.0%), Coal (19.0%)
Status in Climate Change Negotiations	Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified March 22, 1995). Accession to the Kyoto Protocol as of November 30, 2001 (to become party to the treaty negotiated by other states; same legal implication as ratification)

Oil and Gas Industry

Major Energy Operators	Oil: Empresa Colombiana de Petróleos (Ecopetrol), BP, Occidentall; Natural Gas: Ecopetrol, Empresa Colombiana de Gas (Ecogás), ChevronTexaco; Coal: Carbones del Cerrejon consortium, Drummond, Glencore.
Major Ports	Oil: Tumaco, Cartagena, Covenas; Coal: Puerto Bolivar, Puerto Drummond; Santa Marta.
Major Oil-Producing Fields	Cupiagua/Cusiana; Cano Limon, Suroriente, Guando.
Major Gas-Producing Fields	Chuchupa, Ricohacha, and Ballena.
Major Oil Pipelines	Ocensa, Cano Limon pipeline, Alto Magdalena, Colombia Oil, TransAndino.
Major Natural Gas Pipelines	Mariquita-Cali, Ballena-Barrancabermeja, Barrancabermeja-Neiva-Bogota.
Major Oil Refineries (capacity)	Barrancabermeja - Santander (205,000 bbl/d), Cartegena (75,000 bbl/d); Apiay (2,250 bbl/d), Orito (1,800 bbl/d), and Tibu (1,800 bbl/d)

* 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 Colombia

U.S. Government
CIA World Factbook, Colombia
U.S. Census Bureau, U.S.-Colombian Trade
U.S. Department of Energy, Office of Fossil Energy, Colombia
U.S. State Department Consular Information Sheet, Colombia

General Information
Latin American Network Information Center (LANIC), Colombia

Associations and Institutions
The Latin American Integration Association (ALADI)

Foreign Government Agencies
Colombia Government Trade Bureau in Washington, D.C.
Departamento Administrativo Nacional de Estadística

Non-Governmental Organizations

Oil and Natural Gas
Occidental Petroleum
Ecogas
Ecopetrol, Colombian National Oil Company

Coal
Cerrjon Coal Project
Drummond

Electricity
Emgesa

Sources

Argus LatAm Energy and Latin American Power Watch
Cambridge Energy Research Associates
Coal Americas
EcoPetrol
Economist Intelligence Unit
Global Insight
International Oil Daily
Latin Finance
Ministerio de Energia y Minas
Mining Journal
Noticias Financieras
Oil Daily
Petroleum Intelligence Weekly
U.S. Coal Review
U.S. Energy Information Administration
World Markets Analysis