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COUNTRY ANALYSIS BRIEFS

Argentina

Last Updated: January 2007

Background

Argentina is a significant Latin American energy producer and consumer. It is a net energy exporter, primarily to neighboring Brazil and Chile.

Argentina is one of South America's largest economies. Argentina's gross domestic product (GDP) grew by 9.2 percent in 2005 and 8.3 percent in 2006. This high level of economic growth has led to a corresponding increase in the demand for energy, especially natural gas.

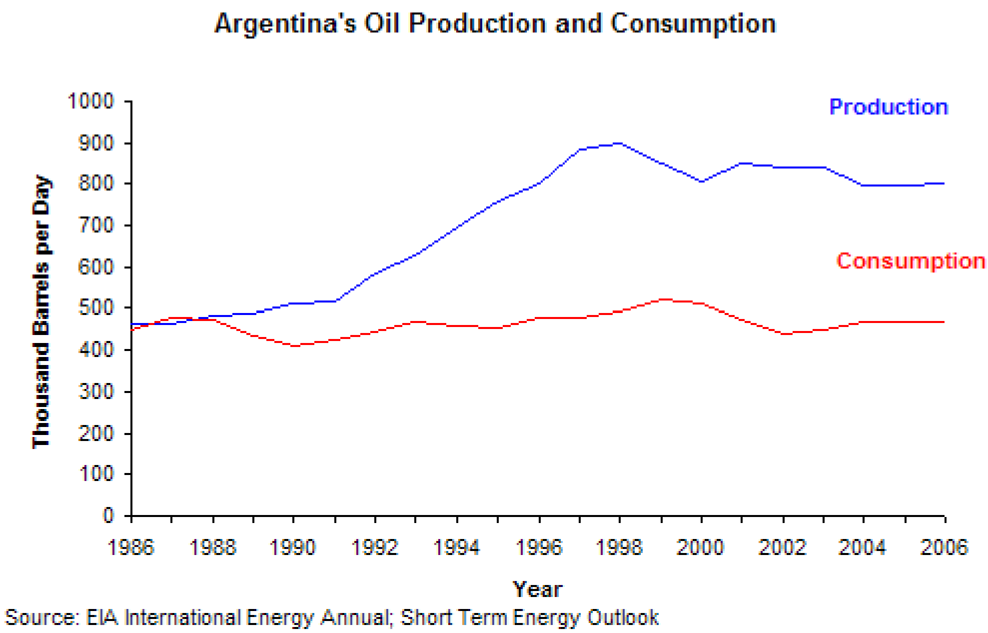
Oil

Argentina is a net oil exporter, though production has declined in recent years.

According to *Oil and Gas Journal* (*OGJ*), Argentina had 2.5 billion barrels of proven oil reserves as of January 2007, up from 2.3 billion barrels in 2006. The country produced an estimated 804,000 barrels per day (bbl/d) of oil in 2006; of this amount, 663,000 bbl/d was crude oil, the rest consisting of lease condensates, natural gas liquids, and refinery gain. Argentina's oil production has declined from a peak of 916,000 bbl/d in 1998, as oil producers have not brought enough new capacity online to replace declining production from mature fields; however, the rate of the decline in production has eased in recent years. Argentina consumed an estimated 470,000 bbl/d of oil in 2006, leaving net oil exports of 334,000 bbl/d. The bulk of the country's oil exports go to Brazil and Chile.

Exploration and Production

In 1999, the Spanish oil company Repsol merged with Argentina's Yacimientos Petroliferos Fiscales (YPF), the formerly state-owned oil company. Repsol-YPF dominates oil exploration and production activities in Argentina, though the country's oil sector is legally open to the private sector. Other significant, oil-producing companies in Argentina include Pan American Energy, Chevron, and Petrobras Energía.

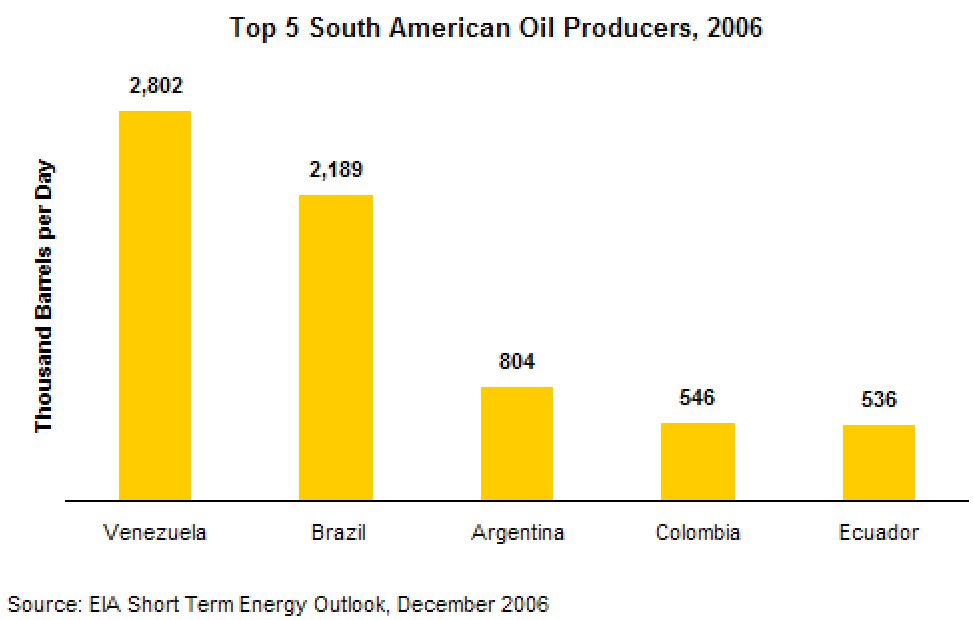


In October 2004, the Argentine government formed a new, state-owned oil company, Enarsa, to promote oil exploration in the country. While the company is still in the early stages of its development, it has signed joint exploration deals with foreign oil companies. Enarsa has also taken over responsibility for the management of natural gas imports from Bolivia.

Two onshore basins represent the vast majority of Argentina's crude oil production: Neuguina, in western-central Argentina, and Golfo San Jorge, in the southeast. Outside the established onshore basins, there has been some interest in exploring offshore oil resources. In 2004, Petrobras acquired a license to explore the CAA-1 and CAA-8 blocks located off the country's central-east coast. In December 2006, Enarsa launched a joint offshore exploration program with Repsol-YPF in the Cuenca Colorado Marina region.

Pipelines

Argentina's three major crude oil pipelines all starting at Puerto Hernandez, in the Neuquen basin. Two pipelines are domestic, transporting crude oil north to the Lujan de Cuyo refinery near Mendoza and east to Puerto Rosales on the Atlantic. The 268-mile, 115,000 bbl/d Transandino pipeline is Argentina's only international oil pipeline, climbing over the Andes to a refinery in Chile.



Downstream Activities

According to *OGJ*, Argentina has 624,575 bbl/d of crude oil refining capacity. Repsol-YPF dominates the downstream oil industry in Argentina, accounting for about half of the country's total refining capacity. Other companies with significant refining capacity include Shell (110,000 bbl/d) and Esso (84,500 bbl/d). In December 2006, the Argentine government announced that it had reached agreement with several private oil companies to build a new, 150,000-bbl/d refinery in the country. The refinery, which will cost an estimated $1.6 billion, will produce refined products for both domestic consumption and export.

Natural Gas

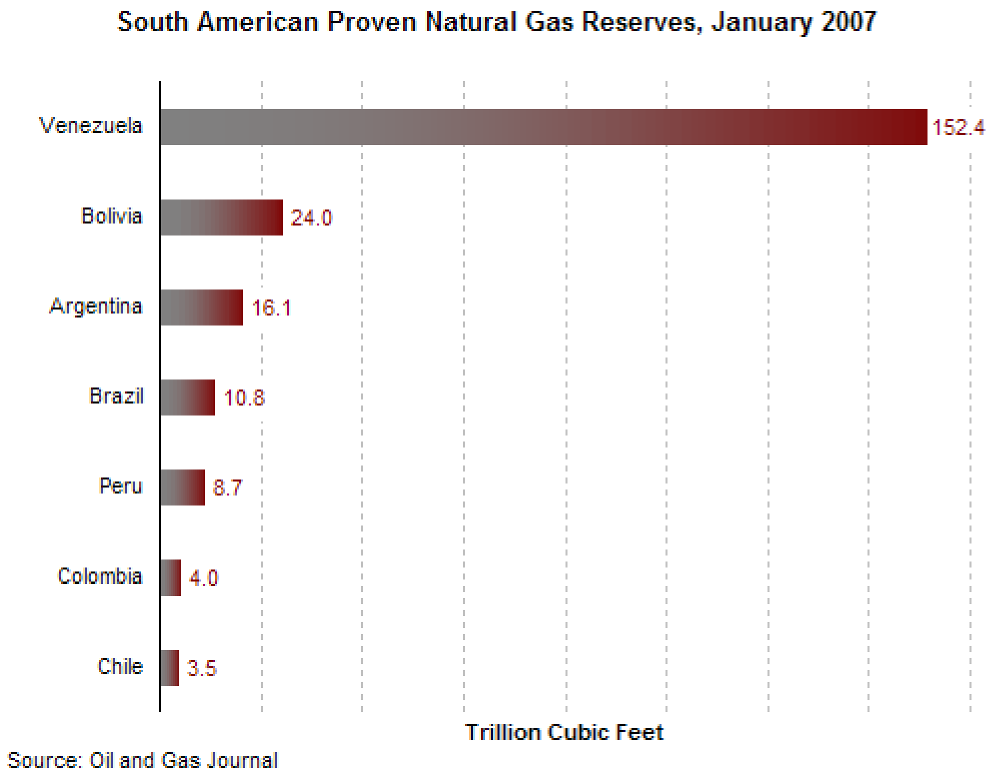
Argentina is the largest natural gas producer in South America.

OGJ reported that Argentina had 16.1 trillion cubic feet (Tcf) of proven natural gas reserves in January 2007, the third-largest amount in South America. Natural gas production in the country has steadily increased over the last decade; in 2004, Argentina produced 1.6 Tcf of natural gas, 9 percent higher than 2003, but over double the level seen in 1994. In line with this increase in production, Argentina's natural gas consumption has also risen significantly in the past decade and is now the country's dominant fuel source, accounting for 59 percent of primary energy consumption in 2004.

Argentina is a net exporter of natural gas, principally to Chile. However, this relationship was strained in 2004, when Argentina repeatedly reduced natural gas exports to Chile in order to make up for domestic shortages. Since then, Argentina has regularly cut exports to Chile in order to meet domestic demand. In July 2006, Argentina doubled a tax on natural gas exports to Chile, a move seen by many as a means to offset higher costs for natural gas imports from Bolivia (see below). Argentina is Chile's sole source of natural gas imports, and the continuing supply disruptions have forced Chile to pursue alternatives for its future import needs (see the Chile Country Analysis Brief for more information).

Sector Organization

Argentina began deregulating natural gas production in 1989 as part of its privatization of YPF. As with the oil industry, YPF (now Repsol-YPF) retains a dominant position in the upstream sector. The second-largest natural gas producer in Argentina is Total. Two companies, Transportadora de Gas del Sur (TGS) and Transportadora de Gas del Norte (TGN), control Argentina's natural gas transmission system: TGS, controlled by Petrobras, is South America's largest pipeline company, delivering the majority of Argentina's total natural gas consumption. The distribution portion of Argentina's natural gas market is dominated by MetroGas SA, Gas Natural Ban SA, Camuzzi Gas Pampeana SA, and Camuzzi Gas del Sur SA. Many of the large distribution companies have strong foreign ownership.



Exploration and Production

The Neuguina, Salta, Tierra del Fuego, and Santa Cruz regions contain most of Argentina's natural gas production, with the Neuquen region accounting for over half of the country's total production. As is the case in the oil sector, Argentina has begun to look towards its offshore basins as its traditional production centers have matured. Upon the creation of Enarsa in 2005, the Argentine government transferred all unallocated offshore exploration blocks to the new company and authorized it to seek partnerships with foreign companies: in January 2005, Enarsa signed an agreement with a consortium led by Petrobras to explore three offshore blocks in the Colorado Marina Basin.

Pipelines

Domestic System

TGS operates the 2,130-mile San Martin pipeline, with a capacity of 1,020 million cubic feet per day (MMcf/d) and connecting the southern part of the country with Buenos Aires. TGS also operates the Neuba I and II pipelines. TGN operates two main pipelines. The first, the 900-mile, 800-MMcf/d Norte, runs from Campo Duran to the main compressor plant in San Jeronimo, eventually reaching Buenos Aires. The second pipeline, the 700-mile, 1,180-MMcf/d Centro Oeste, runs from the Loma la Lata field, Neuquen province, to San Jeronimo. In order to meet rising demand, TGS is currently increasing capacity on the San Martin line, while TGN is expanding the Norte pipeline.

International Connections

Argentina has extensive pipeline linkages with its neighbors, including several pipelines connecting Argentine to Chile. Three in the south; Tierra del Fuego, El Condor-Posesion, and Patagonia supply methanol plants in Chile. In the north, the 580-mile, 300-MMcf/d GasAtacama pipeline runs from Cornejo, Argentina to Mejillones, Chile. Owned by Endesa and U.S.-based CMS, GasAtacama supplies the companies' Nopel power plant. Also in the north, the 250-MMcf/d NorAndino, operated by Belgium's Tractebel, runs parallel to GasAtacama. In the central region, the 290-mile, 310-MMcf/d GasAndes pipeline, majority owned by TotalFinaElf, connects the Neuquen basin in Argentina to Santiago, Chile. Also in the central region, the 330-mile, 340-MMcf/d Gasoducto del Pacifico connects Neuquen to central Chile. An international consortium, consisting of TransCanada, El Paso, and Gasco, operates Gasoducto del Pacifico, which supplies municipal distributors and gas-fired power plants.

The 280-mile, 100-MMcf/d Parana-Uruguayana pipeline connects Argentina and Brazil. The pipeline provides natural gas to AES Brasil Energia's 600-MW power plant in Uruguayana. The Argentine section is operated by Transportadora de Gas de Mercosur; the 20-mile Brazilian section is operated by Transportadora Sul Brasileira de Gas. There are plans to construct a 384-mile extension of the system from Uruguayana to Porte Alegre, where the pipeline would supply thermal power plants.

In January 2003, Argentine natural gas began to flow to Montevideo, Uruguay, through the 250-mile, 190-MMcf/d Gasoducto Cruz del Sur (GCDS, Southern Cross pipeline). The GCDS project also includes a concession covering a possible extension from Uruguay to Porto Alegre in southern Brazil. Major partners in the GCDS project are British Gas and Pan American Energy.

While Argentina is a net exporter of natural gas, it also imports natural gas from Bolivia through the 270-mile, 230-MMcf/d Yacimientos-Bolivian Gulf (Yabog) pipeline. This pipeline serves Argentina's northern regions, which are not well supplied by the domestic natural gas transmission network. Argentina began importing natural gas again from Bolivia in 2004 to cover a domestic shortfall, which it had not done since 1999. Argentina continued to import gas from Bolivia following the end of the energy crisis. In October 2006, the two countries signed a deal for Argentina to import natural gas for an additional 20 years. Under the terms of the deal, Argentine imports from Bolivia will eventually approach one billion cubic feet per day (Bcf/d), a fourfold increase from current levels. The price that Argentina pays for the natural gas will also increase to $5 per million Btu (MMBtu) and eventually become linked to market rates. To facilitate this increase in volume, Argentina and Bolivia announced in August 2006 that they would launch a tender for a new, $1 billion pipeline system connecting the two; dubbed the Northeastern Pipeline, the system will have a maximum capacity of 700 MMcf/d and include an integrated natural gas liquids (NLG) plant.

Coal

Argentina has limited coal production and consumption.

Argentina has very limited coal resources, and coal is not a major component of the country's fuel mix. With only 470 million short tons (MMst) of recoverable coal reserves, the country produced 0.1 MMst and consumed 0.9 MMst in 2004. There is a small coalfield at Rio Turbio in southern Patagonia. Imports come from Australia, the United States, and South Africa.

Electricity

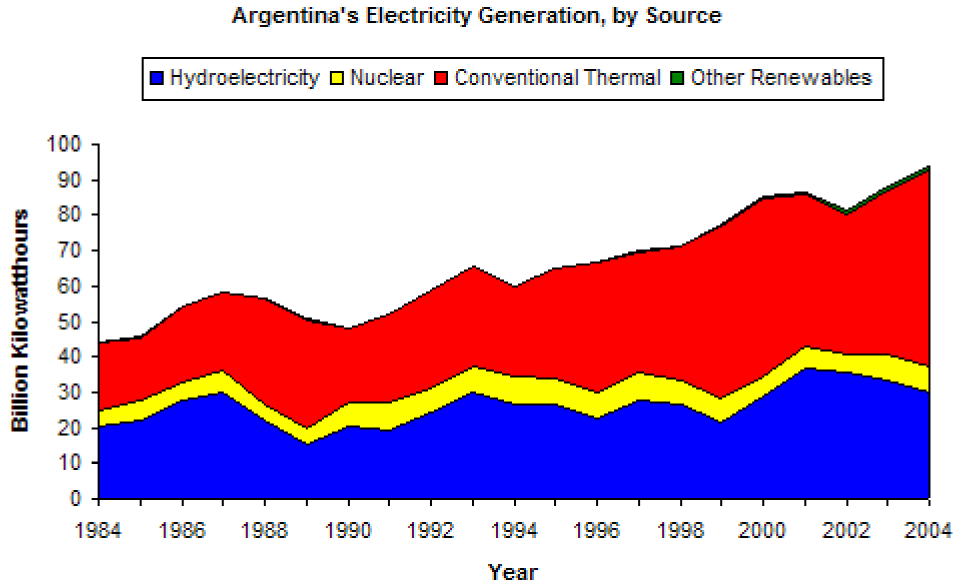
Argentina has the third-largest electricity market in Latin America.

Argentina has the third-largest power market in Latin America, relying mostly on hydropower and natural gas-fired thermal plants for most of its electricity supply. In 2004, Argentina generated 93.9 billion kilowatthours (Bkwh) and consumed 90.9 Bkwh of electricity, with total installed capacity of 30.6 gigawatts. Demand has steadily grown since 1991, though the economic crisis of 2001-2002 caused a temporary decline in electricity production and consumption.

Sector Organization

Argentina has one of the most competitive, deregulated power sectors in South America. The functions of generation, transmission, and distribution are open to the private sector, but there are restrictions on cross-ownership between these three functions. Argentine law guarantees access to the grid in order to create a competitive environment and to allow generators to serve customers anywhere in the country.

Private and state-owned companies carry out generation in a completive, mostly-liberalized market. Power generators sell their electricity in a wholesale market operated by the Compania Administradora del Mercado Mayorista Electrico (CAMMESA). The distribution sector is more heavily regulated and less competitive, with three primary distribution companies (Edenor, Edesur and Edelap) controlling the market.



Source: EIA International Energy Annual

In the transmission sector, the Compania Nacional de Transporte Energetica en Alta Tension (Transener) operates the national electricity transmission grid under a long-term agreement with the Argentine government. In November 2006, the Inter-American Development Bank approved a $580 million loan for the construction of a new 760-mile transmission line in northern Argentina that will connect separate grids in the northeastern and northwestern parts of the country.

Hydroelectricity

The Yacyreta hydroelectric dam, with 3,500 megawatts (MW) of installed capacity, is the largest power plant in Argentina. Argentina and co-owner Paraguay share the electricity generated from Yacyreta evenly, with almost all of Paraguay's share exported to Argentina. The 1,890-MW Salto Grande is another bi-national project, owned by the governments of Argentina and Uruguay; in May 2006, Uruguay and Argentina launched a study on a proposed new hydroelectric facility near Salto Grande that would have an installed capacity of 265 MW. Industry observers believe that Argentina has the potential to significantly expand its hydroelectric generating capacity, as the country has only exploited an estimated 20 percent of its surveyed hydroelectric potential.

Conventional Thermal

Argentina has sought increased investment in conventional thermal capacity as a way to meet rising electricity consumption. In December 2006, the Argentine government launched a tender for a new 240-MW coal-fired power plant in Santa Cruz province, at an estimated cost of $500 million. The government has also awarded contracts to a consortium led by Siemens for the construction of two gas-fired power plants with a combined capacity of 830 MW. The consortium will build the plants in Buenos Aires and Santa Fe provinces, with first output scheduled for 2008.

Nuclear Power

Argentina has two nuclear power plants in operation: the 360-MW Atucha I and the 650-MW Embalse facilities. Nucleoelectrica Argentina SA owns and operates both plants. Construction on a third plant, Atucha II, ceased in the 1990s, due to political and financial concerns.

In 2006, the Argentine government announced a new initiative to revitalize the nuclear power industry in the country. The initiative includes the completion of the 750-MW Atucha II reactor, the extension of the planned operating life of the Embalse facility by 30 years, and a feasibility study for the construction of a fourth nuclear power plant in the country. In November 2006, the government reached an agreement with Atomic Energy of Canada (AECL) to pursue this initiative.

Profile

Country Overview

Chief of State	Nestor Kirchner (since May 25, 2003)
Location	Southern South America, bordering the South Atlantic Ocean, between Chile and Uruguay
Independence	9 July 1816 (from Spain)
Population (2006E)	39,921,833

Economic Overview

Currency/Exchange Rate (1/5/2007)	1 Argentina Peso (ARS) = $0.325
Inflation Rate (2006E)	10.9%
Gross Domestic Product (GDP, 2006E)	$208 billion
Real GDP Growth Rate (2005E, 2006E)	9.2%, 8.3%
Unemployment Rate (2005E)	11.6%
External Debt (2005E)	$118.2 billion
Exports (2006E)	$45.3 billion
Exports - Commodities	edible oils, fuels and energy, cereals, feed, motor vehicles
Exports - Partners (2005E)	Brazil 15.3%, US 10.8%, Chile 10.5%, China 8.3%
Imports (2006E)	$36.2 billion
Imports - Commodities	machinery and equipment, motor vehicles, chemicals, metal manufactures, plastics
Imports - Partners (2005E)	Brazil 34.6%, US 16.8%, China 5.4%, Germany 5.3%
Current Account Balance (2006E)	$6.4 billion

Energy Overview

Proven Oil Reserves (January 1, 2006E)	2.5 billion barrels
Oil Production (2006E)	804.1 thousand barrels per day, of which 83% was crude oil.
Oil Consumption (2006E)	470 thousand barrels per day
Crude Oil Distillation Capacity (2007E)	624,575 thousand barrels per day
Proven Natural Gas Reserves (January 1, 2007E)	16.1 trillion cubic feet
Natural Gas Production (2004E)	1.6 trillion cubic feet
Natural Gas Consumption (2004E)	1,336.7 billion cubic feet
Recoverable Coal Reserves (2003E)	467.4 million short tons
Coal Production (2004E)	0.1 million short tons
Coal Consumption (2004E)	0.9 million short tons
Electricity Installed Capacity (2004E)	30.6 gigawatts
Electricity Production (2004E)	93.9 billion kilowatt hours
Electricity Consumption (2004E)	90.9 billion kilowatt hours
Total Energy Consumption (2004E)	2.8 quadrillion Btus*, of which Natural Gas (50%), Oil (34%), Hydroelectricity (11%), Nuclear (3%), Coal (1%), Other Renewables (0%)
Total Per Capita Energy	71.2 million Btus

Consumption (20044E)	
Energy Intensity (2004E)	6,409.3 Btu per $2000-PPP**

Environmental Overview

Energy-Related Carbon Dioxide Emissions (2004E)	142.3 million metric tons, of which Natural Gas (52%), Oil (46%), Coal (1%)
Per-Capita, Energy-Related Carbon Dioxide Emissions (2004E)	3.6 metric tons
Carbon Dioxide Intensity (2004E)	0.3 Metric tons per thousand $2000-PPP**
Environmental Issues	environmental problems (urban and rural) typical of an industrializing economy such as deforestation, soil degradation, desertification, air pollution, and water pollution note: Argentina is a world leader in setting voluntary greenhouse gas targets
Major Environmental Agreements	party to: Antarctic-Environmental Protocol, Antarctic-Marine Living Resources, Antarctic Seals, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Ozone Layer Protection, Ship Pollution, Wetlands, Whaling signed, but not ratified: Marine Life Conservation

Oil and Gas Industry

Organization	Open to private companies. The most important producer is Repsol-YPF. The Argentine government has recently created a new, state-owned energy company, Enarsa, which does not yet have any production assets.
Major Oil/Gas Ports	Bahia Blanca, Buenos Aires, La Plata
Foreign Company Involvement	Repsol-YPF, Petrobras, Pan American Energy, Chevron,
Major Oil and Natural Gas Basins	Neuguina, Golfo San Jorge, Salta, Tierra del Fuego
Major Pipelines (capacity, Mmcf/d)	Transandino (115,000 bbl/d), San Martin (1,000 Mmcf/d), Norte (800 Mmcf/d), Centro Oeste (1,180 Mmcf/d)
Major Refineries (capacity, bbl/d)	Repsol-YPF La Plata (189,000), Shell Buenos Aires (110,000), Repsol-YPF Lujan de Cuyo (105,500), Esso Campana (84,500)

* 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 Argentina

U.S. Government
CIA World Factbook - Argentina
U.S. Embassy in Argentina
U.S. State Department Background Notes - Argentina
U.S. State Department's Consular Information Sheet - Argentina

Foreign Government Agencies

Argentina's Ministry of Energy
Argentine National Statistic Office
Central Bank (Argentina)
ENERGAS

Oil and Natural Gas
Repsol-YPF

Tecpetrol
TGN
TGS
Totalgaz Argentina
Transener SA

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Upstream
Valor Economico
World Markets Analysis

Contact Info

cabs@eia.doe.gov
(202)586-8800
cabs@eia.doe.gov