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Philippines

The Philippines is important to world energy markets because it is a growing consumer of energy, particularly electric power, and a potential market for foreign energy firms. It also may become a significant producer of natural gas.

Note: Information contained in this report is the best available as of October 2004 and can change.



BACKGROUND

Under the leadership of President Gloria Macapagal-Arroyo, the Philippines has undergone an economic transformation, deregulating its energy sector and offering new incentives for foreign investment. President Macapagal-Arroyo came into power when former President Joseph Estrada was forced to resign in 2001. In May 2004, President Arroyo was re-elected to another six-year term.

Real gross domestic product (GDP) grew by 4.8% in 2003. This increase exceeded expectations, with a surge in domestic consumer demand offsetting a decline in textile and electronics exports. High oil prices also contributed to a jump in remittances from Filipino workers in the Middle East. Real GDP growth for 2004 is projected at 4.9% as demand for the country's exports recovers.

The Philippines is one of the claimants, along with China, Taiwan, Malaysia, and Vietnam, to the [Spratly Islands](#), located in the South China Sea. Potential oil and natural gas reserves surrounding the islands have sparked the interest of all the littoral states. In September 2004, the Chinese and Philippine governments reached an agreement to jointly pursue seismic survey work in the Spratlys, but without giving up their respective territorial claims.

OIL

The Philippines began 2001 producing an average of only 1,000 barrels per day (bbl/d) of crude oil. In 2002, however, crude oil production averaged nearly 24,000 bbl/d, and has been steady at 25,000 bbl/d since 2003.

This increase was due primarily to the development of new deep-sea oil deposits beneath the natural gas-bearing structures in the Malampaya field. The increased production volume is still modest, however, in relation to the country's needs.

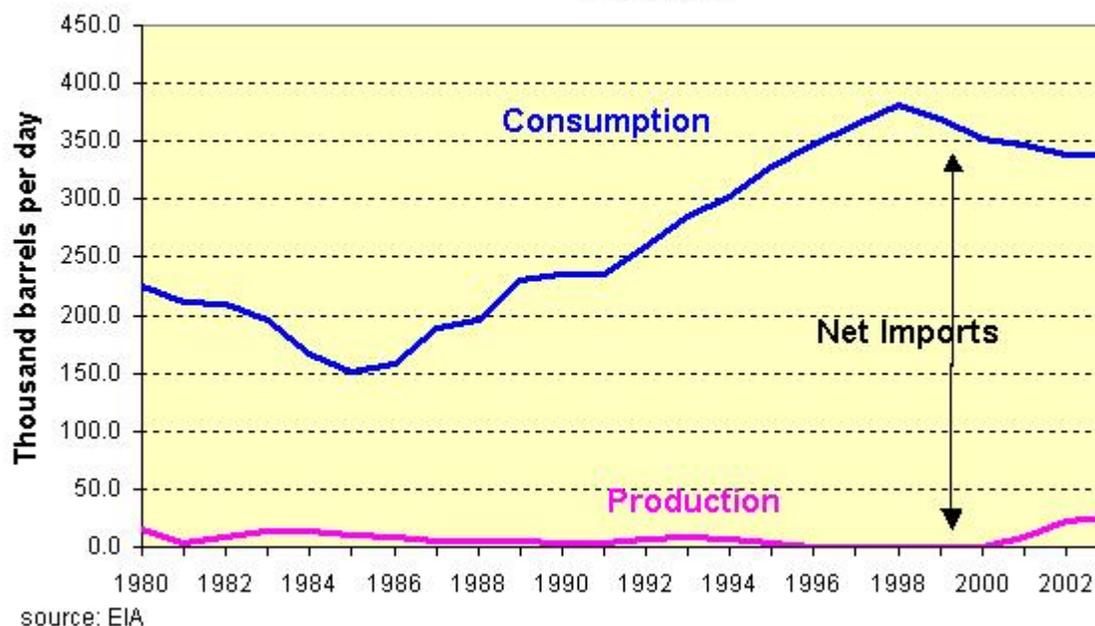
The Philippines consumed 338,000 bbl/d on average in 2003, with net oil imports of 312,000 bbl/d. This dependence on imported oil makes the Philippine economy vulnerable to sudden spikes in world oil prices. Oil consumption is relatively stable, despite the country's economic growth, due to reduced reliance on oil for electric power generation following development of the Malampaya natural gas deposit.

In October 2001, exploration underneath the Malampaya gas field revealed an estimated 85 million barrels of oil. Shell Philippines Exploration (SPEX) has committed about \$2 billion to the upstream components of the combined oil/natural gas project, currently operating the joint venture with partners Texaco Philippines and the Philippines National Oil Company (PNOC). Production currently is around 25,000 bbl/d. In addition, six new offshore exploration projects have commenced in the Malampaya basin, led by Nido Petroleum, Philippines National Oil Company Exploration Corp., Trans-Asia Oil, Unocal Corp., and Philodril. In June 2004, however, Shell and ChevronTexaco announced that they had determined the amount of oil in the vicinity of Malampaya to be too small to develop economically, and relinquished their development rights. The Philippine government is seeking other firms which may be interested in developing the reserve, but no agreements have been concluded.

Unocal has begun exploratory drilling the the Sulu Sea offshore from the Philippines. Data from initial seismic surveys showed possible oil deposits of modest size, and Unocal plans to spend \$14 million on exploration in the area.

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**Philippine Oil Production and Consumption,
1980-2003**



Caltex (Philippines). Petron is the Philippines' largest oil refining and marketing company. The company was a wholly owned subsidiary of the state-owned PNOC until 1994. Currently, the Philippine government and Saudi Aramco each own 40% of the company, with the remaining 20%

held by portfolio and institutional investors, making it the only publicly listed firm amongst the three oil majors. Petron's Limay, Bataan refinery has a crude processing capacity of 180,000 bbl/d. Petron's market share as of mid-2004 was around 40%. Caltex (Philippines), a subsidiary of Caltex, the ChevronTexaco subsidiary based in Singapore, operates a 86,500-bbl/d refinery, two import terminals, and more than 1,000 retail gasoline stations throughout the Philippines. Caltex announced in 2003, however, that it would be shutting down its refinery in late 2004 and replacing it with an oil import terminal. Current plans call for the refinery to process its last cargo of crude oil in October 2004, with the import terminal at the same site ready for operation by the beginning of 2005. Pilipinas Shell has a 153,000-bbl/d refinery, one of the largest foreign investments in the Philippines, and operates some 1,000 Shell gasoline stations. Overall, Philippine refineries run at around 80% of capacity, and there is not a great deal of demand for new refinery construction.

Oil market deregulation, beginning in 1998, continues to have a significant effect on the industry. Since deregulation started, 62 new firms, including TotalFinaElf, Flying V, SeaOil (Philippines), Eastern Petroleum, Trans-Asia Energy and Unioil Petroleum Philippines Inc., have invested heavily and built several hundred new retail stations. While the three original companies still dominate the market, these firms have captured a steadily growing share of the petroleum products market, rising from around 10% in 2000 to about 20% in mid-2004. These new entrants have organized the "New Players Petroleum Association of the Philippines" (NPPAP), and have been credited with putting significant downward pressure on retail fuel prices in the country. Currently, the Philippines enjoys the lowest fuel prices of any non oil-exporting Asian country. However, price swings associated with deregulation and higher world oil prices have angered many Filipinos. Despite recurring public calls for price controls, the government has remained committed to deregulation. In December 1999, the Supreme Court upheld the constitutionality of the country's deregulation program.

NATURAL GAS

Although the Philippines has 3.8 trillion cubic feet (Tcf) of proven natural gas reserves, the country had no significant natural gas production until late 2001. In recent years, the government has made expanding natural gas use a priority, particularly for electric power generation, in an effort to cut oil import expenses.

A major impetus for changes in the country's natural gas sector has been the Malampaya offshore field. Malampaya is the largest natural gas development project in Philippine history, and one of the largest-ever foreign investments in the country. Shell Philippines Exploration (SPEX, operator, with a 45% stake), Texaco (45%), and the PNOC (10%) have come together to form the \$4.5 billion Malampaya Deepwater Gas-to-Power Project. Malampaya is located in the South China Sea, off the northern island of Palawan, and contains an estimated 2.6 Tcf of natural gas. A 312-mile (504-kilometer) pipeline links the field to three power plants in Batangas. The pipeline is among the longest deep-water pipelines in the world, with half of its length more than 600 feet deep. With completion of the sub-sea pipeline and conversion of the first of three power stations, (San Rita, operated by British Gas and Philippines 1st Gas Corp.), the Malampaya project was officially inaugurated on October 16, 2001. Natural gas from Malampaya eventually will fuel three power plants with a combined 2,700-megawatt (MW) capacity for the next twenty years and will displace 26 million barrels of fuel oil. The BG/Philippines 1st Gas Corporation partnership converted a second power plant at San Lorenzo to natural gas in 2003. The Philippine government currently is considering a sale of half of PNOC's stake to an outside investor, and has reportedly held talks with Korea Gas (Kogas).

A \$100 million expansion pipeline from Batangas to Metro Manila ("Bat-Man") has been considered by numerous investors including PNOC, Shell, Brunei's Mashor Group, First Gas, and

Sumitomo. This pipeline would supply gas to additional power plants as well as the industrial and commercial sectors. Negotiations on the financial aspects of the project are ongoing, and construction is expected to begin in 2005, with the pipeline commencing operation in 2007. Bids for the project were received in August 2004.

Exploration continues in other parts of the country, but no major discoveries have been reported. Three small natural gas fields were closed down in 2001. Fields in the Tukankuden and the Cotabato Basin were shut down due to security problems, while another field in Victoria, Tarlac, was closed because the natural gas discovered was too saturated with water for commercial production.

The Philippine government is developing a policy framework for the country's emerging natural gas industry that foresees the government's role as that of facilitator. Domestic development is to be encouraged, but competition from imported gas also is to be allowed. Gas supply to wholesale markets will have market-set prices, while prices for captive markets and small consumers will be regulated.

Liquefied natural gas (LNG) has begun to receive added attention as a potential source of natural gas supplies. PNOOC has been considering the construction of an LNG regasification terminal in Bataan, which would serve the Manila area. A letter of intent has been signed for natural gas imports into the Philippines from BP's Tangguh LNG project in Indonesia.

A pilot program began in mid-2004 for the use of natural gas as a transportation fuel in the Manila area. Four bus companies are to have vehicles running on compressed natural gas by the end of 2004.

COAL

Development of new natural gas projects in the Philippines has come largely at the expense of the country's struggling coal industry. PNOOC's coal mining subsidiary produced 1.9 million short tons of coal in 2002. While coal represents a declining share of the Philippines fuel mix overall, there are several small coal mines under development, mainly on the southern island of Mindanao.

The Philippines consumed 5.7 million short tons of coal in 2002, 3.8 million short tons of which were imported. Indonesia, China, and Australia are major exporters of coal to the Philippines.

World Trade Organization (WTO) regulations require that the Philippines lift import restrictions on coal. Since the 1970s, when the National Coal Authority was created, Philippine coal importers have been required to obtain a government certificate of compliance before importing coal, allowing the authorities to force importers to buy domestic coal each time they purchased coal from abroad. President Macapagal Arroyo has committed to honoring the international coal supply contracts approved by the previous government.

ELECTRICITY

Energy production in the Philippines is concentrated in the electricity sector. Geothermal power accounts for the country's largest share of indigenous energy production, followed by hydropower, natural gas, coal, and oil. The Philippine government has made shifting from reliance on imported oil a major goal, and is pushing the current boom in natural gas-fired electricity development.

The most significant event in the Philippine energy industry in recent years was the Electric Power Industry Reform Act (EPIRA) of 2001. After seven years of congressional debate and litigation, the

Act came into force on June 26, 2001. The act has three main objectives: 1) to develop indigenous resources; 2) to cut the high cost of electric power in the Philippines; and 3) to encourage foreign investment. Passage of the Act set into motion the deregulation of the power industry and the breakup and eventual privatization of state-owned enterprises.

EPIRA required the state-owned utility National Power Corporation (Napocor) to break up its vertically integrated assets into smaller sub-sectors such as generation, transmission, distribution and supply in order to prepare for eventual privatization. The result will be a system in which privatized generators will sell directly to private distribution companies. Working with consultants from the law firm of Hunton and Williams (U.S.), the government has designated two new entities designed solely for the eventual privatization of state assets. These two concerns, the National Transmission Corporation (TransCo) and the Power Sector Assets and Liabilities Management (PSALM) Corporation, have assumed the state's high voltage transmission infrastructure, and power plants, respectively. The government also will sell off its share of Meralco, a vital distribution utility on the island of Luzon that serves Manila and the immediate surrounding area by buying power from various Independent Power Producers (IPPs).

Napocor will need to transfer its existing power purchase obligations to private distributors, and also to renegotiate high-priced contracts. The cost savings lie in the fact that private distributors will likely be unwilling to enter into agreements that are above market rates. There are other financial incentives for the government as well. Napocor's \$23 billion in debt and \$9 billion in power purchase agreements are unsustainable, and the government must already contribute \$300 million per year to keep Napocor afloat.

In order to make the sale of Napocor more attractive to investors, the government has absorbed a significant amount of Napocor's debt. In addition, the \$9 billion in power purchase agreements with IPPs also will be sold off. The transmission system has been transferred to an independent company, Transco, which is to be privatized. According to deregulation laws, no single potential buyer will be allowed to own more than 30% of the Philippines' generating assets. Privatization of Transco has been delayed, though, due to the fact that three bidding rounds in 2003 and 2004 resulted failed to yield an acceptable proposal. In October 2004, the Philippine government announced that it would make modifications to the process, based on bidding a non-negotiable set of terms and conditions, and make another attempt later this year.

Electricity demand in the Philippines is expected to grow by around 9% per year through the end of the decade, necessitating as much as 10,000 MW of new installed electric capacity. Current contracts will provide about half that amount, with the remainder expected to be filled once the market deregulates. Medium-term increases in power demand are to be satisfied largely by the three gas-fired plants (Ilijan, Santa Rita, and San Lorenzo) that will be linked to the Malampaya natural gas field. The Korea Electric Power Corporation (KEPCO) began commercial operation of the 1,200-MW Ilijan plant in June 2002. KEPCO will run the plant under a build-operate-transfer scheme for 20 years, after which ownership will revert to Napocor. Minority stakeholders in the plant are Southern Energy of the United States (20%) plus Mitsubishi (21%) and Kyushu Power (8%) of Japan. First Gas Power completed a 1,020-MW plant at Santa Rita in August 2000; the plant switched from fuel oil to natural gas in January 2002.

There are two new power projects in Luzon. The CE Casecan Water and Energy Company (a subsidiary of California Energy International) is constructing a multipurpose irrigation and 150-MW hydroelectric facility. Also, the 350-MW San Roque multipurpose hydro project began commercial operation in May 2003.

Mirant is the Philippines' largest IPP, operating five power plants in the country. Mirant's coal-fired Sual plant began commercial operation in late 1999. The 1,218-MW plant is located about 130 miles north of Manila, and is the nation's largest and lowest-cost electricity producer. Napocor is the sole purchaser of power from Sual.

Several power-generating facilities also are under extensive rehabilitation. The 100-MW Binga hydroelectric plant has been under renovation since 1993 following damage from a 1990 earthquake. After years of delays, Binga resumed operation in July 2002. A larger project is the \$470 million contract with Argentine firm IMPSA (*Industrias Metalurgicas Pescarmona Sociedad Anonima*) to rehabilitate and operate the 750-MW Caliray-Botocan-Kalayaan (CBK) power complex in Laguna, south of Manila. The CBK complex is the grid regulator in Luzon, and as such is able to transmit power to other plants on the grid in the event of breakdowns. IMPSA, in conjunction with new partner Edison Mission Energy of the United States, was able to get a performance undertaking guarantee despite Napocor's and some government officials' objections, facilitating long-delayed financing of the project.

The Philippines, due to its geography, has problems linking all of its larger islands together into one grid and ensuring availability of electric power in rural areas. The government has set a target date of 2006 for full electrification, and also is taking steps to link together the country's three major power grids (Luzon, Visayas, and Mindanao). Where it is not economical to link small islands' grids into the national grid, separate local systems are being established around small generating plants.

Renewables

The Philippines is the world's second largest producer of geothermal power, with an available capacity of 1,909 MW. The government would like to add roughly another 1,200 MW, which would exceed current U.S. geothermal capacity. Geothermal power currently makes up around 16% of the Philippines' installed power generation capacity, most of which has been developed by the PNOC - Energy Development Corporation (PNOC-EDC). Privatization of PNOC-EDC is planned, though as with other generation assets, the process has progressed much slower than originally planned. Kyushu Electric company is in a joint venture with PNOC-EDC to develop a 40-MW geothermal plant in Sorsogon, Albay province, and Marubeni of Japan has expressed its intent to build the 100-MW Cabalian geothermal plant in Leyte. California Energy's Philippine unit is working with PNOC to develop three new geothermal power plants in Leyte, producing a total of 540 MW of electricity. Plans are underway to develop nine new facilities in Luzon, ranging from 20 MW to 120 MW, that will eventually bring a total of 440 MW of geothermal energy to the grid.

By 2005, the new 40-MW Mambucal and 40-MW Rangas power stations in Dauan, Negros Oriental are expected to come online. Financing for the projects was secured from the Development Bank of the Philippines (DBP) in June 2003.

Besides geothermal, the Philippines also is exploring the use of other renewables for electricity generation, particularly in the country's unelectrified villages. In March 2001, the Philippine and Spanish governments, in conjunction with BP, agreed to a \$48 million contract to bring solar power to 150 villages. BP and the government of Australia also have partnered with the Philippines to supply solar power to rural villages, bringing 1,145 solar-powered systems to 52 new municipalities.

The Philippines appears to have a strong potential for wind generation. The United States Department of Energy wind mapping survey has estimated that wind resources in the Philippines have a power generation potential of as much as 70,000 MW, seven times the country's current power demand. The 40-MW, PNOC-EDC, Northern Luzon project in Ilocos Norte began operation in late 2002. A contract for a second, 40-MW phase of the project was signed with Aboitiz Power in

March 2003.

Sources for this report include: AFX News Limited; Asia Pulse; Business Wire; Business World; CIA World Factbook; Dow Jones News Wire service; Economist Intelligence Unit; Electric Utility Week; Financial Times; Global Insight Asia Economic Outlook; Oil and Gas Journal; Manila Standard; Philippine Daily Inquirer; Platts International Coal Report; Project Finance; U.S. Energy Information Administration; World Gas Intelligence.

COUNTRY OVERVIEW

President: Gloria Macapagal-Arroyo (sworn in January 20, 2001 after resignation of Joseph Estrada; next election May 2004)

Independence: July 4, 1946 (from United States)

Population (2004E): 86.2 million

Location/Size: Southeast Asia/115,830 sq. mi. (slightly larger than Arizona)

Major Cities: Manila (capital), Quezon City, Cebu, Davao

Languages: Pilipino (official; based on Tagalog), English (official)

Ethnic Groups: Christian Malay (91.5%), Muslim Malay (4%), Chinese (1.5%), other (3%)

Religions: Roman Catholic (83%), Protestant (9%), Muslim (5%), Buddhist and other (3%)

ECONOMIC OVERVIEW

Finance Secretary: Jose Camacho

Currency: Philippine peso

Market Exchange Rate (9/13/04): \$1 = 56.33 pesos

Gross Domestic Product (GDP, 2003E): \$80.6 billion

Real GDP Growth Rate (2003E): 4.8% **(2004F):** 5.3%

Inflation Rate (consumer prices, 2003E): 3.0% **(2004F)** 5.0%

Current Account Balance (2003E): \$3.3 billion

Major Trading Partners: United States, Japan, EU, Singapore, Hong Kong

Merchandise Exports (2003E): \$35.9 billion

Merchandise Imports (2003E): \$37.4 billion

Major Export Products: Electronic equipment, machinery, garments, coconut oil

Major Import Products: Machinery and equipment, fuel products, textile yarns, chemicals

Total External Debt (2003E): \$57.1 billion

ENERGY OVERVIEW

Secretary of Energy: Vicente Perez

Proven Oil Reserves (1/1/04E): 152 million barrels

Oil Production (2003E): 26,000 bbl/d, of which 25,000 bbl/d was crude oil

Oil Consumption (2003E): 338,000 bbl/d

Net Oil Imports (2003E): 312,000 bbl/d

Crude Oil Refining Capacity (1/01/04E): 333,000 bbl/d

Natural Gas Reserves (1/1/04E): 3.8 trillion cubic feet

Natural Gas Production and Consumption: (2002E): 70.6 billion cubic feet

Recoverable Coal Reserves (2002E): 366 million short tons

Coal Production (2002E): 1.9 million short tons

Coal Consumption (2002E): 5.7 million short tons

Electric Generation Capacity (1/1/02E): 13.4 gigawatts (GW)

Electricity Generation (2002E): 45.6 billion kilowatthours (bkwh) (61.9% thermal, 15.8% hydro, and 22.2% geothermal)

Electricity Consumption (2002E): 42.4 bkwh

ENVIRONMENTAL OVERVIEW

Secretary of Environment & Natural Resources: Heherson Alvarez

Total Energy Consumption (2002E): 1.18 quadrillion Btu* (0.3% of world total energy consumption)

Energy-Related Carbon Dioxide Emissions (2002E): 64.5 million metric tons of carbon dioxide (0.3% of world total energy-related carbon dioxide emissions) (includes natural gas flaring)

Per Capita Energy Consumption (2002E): 15.0 million Btu (vs. U.S. value of 339.1 million Btu)

Per Capita Carbon Dioxide Emissions (2002E): 0.82 metric tons of carbon dioxide (vs. U.S. value of 19.97 metric tons of carbon dioxide)

Energy Intensity (2002E): 3,868 Btu/\$1995 -PPP (vs U.S. value of 9,344 Btu/\$1995 -PPP)**

Carbon Dioxide Intensity (2002E): 0.21 metric tons of carbon dioxide/thousand \$1995 -PPP (vs U.S. value of 0.55 metric tons/thousand \$1995 -PPP)**

Fuel Share of Energy Consumption (2002E): Oil (59.3%), Coal (10.2%), Natural Gas (5.9%)

Fuel Share of Carbon Emissions (2002E): Oil (76.6%), Coal (17.0%), Natural Gas (6.4%)

Renewable Energy Consumption (2002E): 0.28 quadrillion Btu*

Status in Climate Change Negotiations: Non-Annex I country under the United Nations Framework Convention on Climate Change (ratified August 2nd, 1994). Signatory to the Kyoto Protocol (signed April 15th, 1998).

Major Environmental Issues: Uncontrolled deforestation in watershed areas; soil erosion; air and water pollution in Manila; increasing pollution of coastal mangrove swamps which are important fish breeding grounds.

Major International Environmental Agreements: A party to Conventions on Biodiversity, Climate Change, Endangered Species, Hazardous Wastes, Law of the Sea, Marine Dumping, Nuclear Test Ban, Ozone Layer Protection, Tropical Timber 83, Tropical Timber 94, Wetlands and Whaling. Has signed, but not ratified, Desertification.

* The total energy consumption statistic includes petroleum, dry natural gas, coal, net hydro, nuclear, geothermal, solar and wind electric power. The renewable energy consumption statistic is based on EIA data and includes geothermal, solar, wind, wood and waste electric power consumption.. Sectoral shares of energy consumption and carbon emissions are also based on IEA data.

**GDP based on OECD figures for Purchasing Power Parity (PPP)

OIL AND GAS INDUSTRIES

Organization: The Philippine National Oil Company (PNOC) is the country's state-owned energy company responsible for oil and development of local energy resources. Petron, privatized in 1994, is considered to be the country's largest oil refining company, with Shell and Caltex also significant. National Power Corporation (NPC) is the state-owned electric company.

Major Foreign Energy Company Involvement: Caltex, Royal-Dutch Shell, Petroleum Authority of Thailand, TotalFinaElf

Major Natural Gas Fields: Malampaya-Camago

Major Oil Refineries (capacity - bbl/d): Petron -- Limay, Bataan (180,000 bbl/d); Pilipinas Shell - - Tabangao (153,000) bbl/d)

LINKS

For more information from EIA on the Philippines, please see:

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Links to other U.S. and state government sites:

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[U.S. Department of Energy's Office of Fossil Energy's International section - Philippines](#)
[U.S. State Department's Consular Information Sheet - Philippines](#)
[U.S. State Department's Country Commercial Guide - Philippines](#)
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