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## Greece

*Greece is an important potential transit site for energy exports from the Caspian/Caucasus regions, with limited energy reserves of its own.*

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



### BACKGROUND

Greece is among the smallest of the economies in the European Union (EU), but has enjoyed moderate growth over the past few years with relatively low inflation. In 2003, for instance, Greece's real gross domestic product (GDP) grew by an estimated 4.3%. Greece's real GDP growth is expected to slow slightly in 2004 and 2005 to 3.8% and 3.0%, respectively. Greece's unemployment rate has been trending downwards in recent years, from 11.9% in 1999 to 9.4% in 2003. Greece hopes to achieve long-term real GDP growth of 5.0%-5.5% over the next 15 years, but many outside analysts believe this to be overly optimistic.

Greece joined the "Eurozone" as its twelfth member in January 2001, and the general government budget experienced a surplus in 2001 for the first time in over three decades.

Greece's attractiveness to foreign investors is limited by its small domestic market, underdeveloped communications and transport infrastructure, relatively high tax burden, and distance from other EU markets. The country's current ratio of foreign direct investment (FDI) to GDP is lower than that of any other EU country. Because it has limited domestic energy reserves, Greece imports up to 70% of its total energy requirements.

Since the mid-1990s, Greece has undertaken several macroeconomic and structural reforms, including measures aimed at reducing the size of the bureaucracy, expanding privatization, and attracting foreign investment. Both the International Monetary Fund (IMF) and the Organization for Economic Cooperation and Development (OECD) have called for continued efforts in these areas. The IMF warned in September 2004 that Greece's most pressing macroeconomic challenge is to bring its fiscal balances under control and restore confidence in public sector management. The IMF

also recommended measures to improve Greece's attractiveness as a site for foreign direct investment, including reducing bureaucracy and simplifying tax laws. Privatization has slowed, mostly as a result of the Greek government's reluctance to cede control of its "golden share" in key public utilities and other areas.

Relations between Greece and Turkey have improved recently, allowing for the possibility of more economic and energy cooperation. In March 2002, Greece and Turkey began discussions on resolving a decades-long disagreement over Aegean Sea boundaries. The two countries also are increasing cooperation in the economic and energy areas (see below). Greece is a major investor in the former Yugoslavia and its energy infrastructure is being integrated with that of the Balkan states. Improved relations with neighboring states could help Greece significantly in achieving its ambitious goal of becoming the major Balkan energy (oil, natural gas, electricity) hub and intermediary to the rest of Europe by 2010. The situation in the Former Yugoslav Republic of Macedonia, although currently relatively stable, remains a cause for concern since a spate of serious unrest and violence by rebels in 2001.

## **OIL**

Greece has limited oil reserves of just 6 million barrels. In 2003, the country produced 6,400 barrels per day (bbl/d) of oil. As a result, Greece remains highly reliant on imports for its 429,000 bbl/d oil consumption. Oil is Greece's most important fuel source, accounting for 62% of total energy consumption in 2002. Oil's market share is slowly declining, as natural gas becomes more important in the Greek energy market. By 2025, oil is expected to account for 57% of Greece's energy demand. Oil is imported primarily from Iran, Saudi Arabia, Russia, Libya and Egypt. The Greek government is attempting to increase imports from Russia in an effort to decrease its dependency on Middle Eastern oil resources. Although the Middle East is expected to remain the major source of Greek oil supplies in the near future, Russian oil will become more important as pipelines are constructed connecting Bulgaria and Greece for export of Russian oil.

Greece continues promote the use of unleaded gasoline with the hopes of decreasing air pollution within the nation. While the government has been encouraging its citizens to use unleaded gas for some time, extra incentives are needed to ensure the effort's success. Greece is also party to the European Automotive program, which requires signatories to mandate at least a 30% increase in the fuel economy of all new vehicles by 2010.

## **Exploration and Production**

Greece's oil industry is dominated by Hellenic Petroleum (HP), formed in 1998 from the former state oil company, Public Petroleum Corporation (PPC). HP conducts oil exploration, imports crude and products, operates three large refineries (one in the Former Yugoslav Republic of Macedonia) accounting for 56% of petroleum product output in the country. HP also distributes and markets petroleum products and owns a 30% share in the Public Gas Corporation (DEPA). Although HP is still majority-owned by the state, government shares in the company were historically much higher than they are today. As a result of EU mandates encouraging private competition, the Greek government has privatized shares of HP in stages, selling another 8.2% to Greece's Latsis Group in August 2004, increasing Latsis' share to 32.9% and bringing its own stake in the company down to 35.5%. Greek Finance Minister George Alogoskoufis indicated in August 2004 that the government has no intention of selling any more of its remaining stake in the company.

Greece's oil production comes from the Prinos area of the Aegean Sea, near the island of Thassos. The U.S., Greek, and Canadian North Aegean Petroleum Company (NAPC) consortium operated the Prinos fields, which began production in 1996, until the company judged that economically recoverable resources had been exploited. The Greek firm Kavala Oil, took over production in

February 2001, managing to extract 3,000 bbl/d that it sold to state-controlled HP. In January 2004, a UK-based exploration company with a majority stake in Kavala Oil, Regal Petroleum, found "considerable potential" for reserves to exceed estimates of 227 million barrels. Regal made plans to raise the oil field's production from 4,000 bbl/d to 15,000 bbl/d as a result of the discovery. In September 2004, Regal announced that the Greater Kallirachi field in the North Aegean Sea holds up to one billion barrels of light crude. Third-party reserve auditors confirmed the findings. Nevertheless, exploration and development in the Aegean Sea are still complicated by lack of agreement between Greece and Turkey delineating continental shelf boundaries.

HP is developing a 143-mile pipeline from the northern port city of Thessaloniki to HP's newly acquired Okta refinery near Skopje in the Former Yugoslav Republic of Macedonia. Construction of the pipeline by HP's subsidiary El Pet Balkaniki began in November 1999, and it officially began operating in July 2002. The pipeline is managed in partnership with the Former Yugoslav Republic of Macedonia, and provides an alternative means of transportation for crude shipped by rail from Thessaloniki to Okta.

#### Burgas-Alexandroupolis Pipeline

In January 1997, Greece, Bulgaria and Russia agreed on a plan to build an oil pipeline linking the Bulgarian Black Sea port of Burgas with Alexandroupolis on the Mediterranean coast of Greece. The proposed 178-mile, underground Trans Balkan pipeline would allow Russia to export oil through the Black Sea while bypassing Turkey's Bosphorus and Dardanelles Straits. The \$600-\$700 million project has been stalled by a wide range of technical and economic disputes. Russia has affirmed that the pipeline, with proposed capacity ranging from 600,000 bbl/d to 800,000 bbl/d, will work at least at 50% of its capacity. Russian oil major Yukos' expressed interest in the project may ease concerns over filling the pipeline. Greece has discussed with Kazakhstan the possibility of shipping oil through the pipeline as well. Increases in oil prices have encouraged renewed negotiations in recent months. Upcoming meetings of a committee of delegates from each nation to assess project financial practicability and prepare an intergovernmental memorandum on cooperation are scheduled for September 2004.

#### Other Pipelines

A pipeline to connect the Okta refinery in Macedonia with Hellenic Petroleum's facilities in Thessaloniki, Greece is also being planned. A Greek-Macedonian Consortium is expected to manage the pipeline upon its completion. It will transport in excess of 50,200 bbl/d. The Thessaloniki-Okta refinery pipeline is projected to cut crude oil transportation costs by 40%, as the oil in question is currently transported by rail.

#### Downstream

HP owns about half of Greek refining capacity, which totaled 401,400 bbl/d as of January 1, 2004. HP's Aspropyrgos facility refines about 134,900 bbl/d, while the Thessaloniki refinery has a 66,500-bbl/d capacity. Two private refineries, owned by Motor Oil Corinth Refineries and Petrola Hellas, are export oriented; selling only limited volumes to the national market. Motor Oil, which had been majority-owned by Saudi Aramco, was partially sold off to Petroventure of Jersey (UK) in July 2001, a joint venture of Aramco and Vardinoyannis, which separately each own 16.4% of Motor Oil. HP also is the largest player in the Greek retail oil market at a 26% market share. U.S.-based Texaco and British-Dutch Royal Dutch/Shell decided in 2000 to trade Texaco's Greek retail assets for some of Shell's United Kingdom retail assets.

In 2003, HP announced the purchase of 200 gasoline stations in the Balkans region. The stations would be operated under the EKO Hellenic Petroleum brand name in Albania, Bulgaria, Macedonia, Romania, and Serbia. EKO Hellenic announced in January 2004 that it has further

plans to build 40 additional stations in Bulgaria.

## **NATURAL GAS**

With reserves of only 35 billion cubic feet (Bcf), Greece produces negligible amounts of natural gas. Consumption, however, has increased significantly over the past few years, increasing from only 1 Bcf in 1996 to 77 Bcf in 2002. Consumption is expected to continue increasing, possibly tripling over the next ten years. Greece receives more than two-thirds of its natural gas imports from Russia, with the remainder coming from Algeria in the form of liquefied natural gas (LNG). Greece is looking to diversify its gas import sources to such countries as Iran and Azerbaijan through the cooperation of several nations constructing multiple pipelines. Azeri gas would be transported via Turkey through the South Caucasus Gas Pipeline and a planned Turkey-Greece link, Interconnector Turkey and Greece (ITC).

### **Market Liberalization**

The Greek natural gas industry is controlled by the state-owned Greek Public Gas Company (DEPA). DEPA was created in 1988 in an attempt to diversify the lignite-based primary energy supply by increasing the role of natural gas and managing contracts signed with Russia and Algeria. DEPA is currently 35% owned by HP, with the Greek government owning the rest. In September 2002, 35% of DEPA's government share was offered for sale, with nine buyers (Total, Eni, Electricite de France, Gaz de France, Edison, Enel, Sonatrach, Gazprom, Ruhrgas) originally expressing interest (Total, Gaz de France, Electricite de France and Edison reportedly dropped out of the bidding in April 2003; Spain's Gas Natural offered a 260 million Euro bid in June 2003). Spain's Gas Natural (GN) agreed in March 2004 to purchase the 35% share of DEPA, contingent on approval of the contract by Greece's newly elected government. Such a move would decrease state holdings in the company to from 65% to 30% and further a plan to ensure that DEPA is only minority-owned by the state. DEPA's largest customer, Public Power Corporation, also has an option to acquire a 30% share of the company; decisions about such have been postponed until a resolution concerning the GN purchase has been reached.

DEPA began importing natural gas from Russia via Bulgaria in July 1997 through a Bulgarian pipeline to fulfill its contracts of supplying natural gas to electric utilities and industrial companies. In March 2001, DEPA and Gazexport (part of Gazprom of Russia) agreed on an importation deal for 2002 that includes a 5% price increase. The Russian company now has a 20-year contract with Greece that expires in 2016. Recent revisions in Greek law now allow a private company, Prosmetheus Gas, to import Russian gas after DEPA's annual quotas are met.

### **Greek/Turkish Cooperation**

Recent improvements in Greek-Turkish relations are encouraging energy cooperation. Greece and Turkey first agreed in July 2000 to work together to develop connections between their natural gas networks, as both nations have a vested interest in the creation of a European pipeline linkage to Caucasus and Central Asian oil and gas resources. This commitment was reaffirmed at the "EU and Black Sea Economic Cooperation Conference" in September 2001 and led to the signing of an agreement by Greek and Turkish officials at EU headquarters to study how best to develop natural gas connections. The two countries are working with the EU-sponsored Interstate Oil Gas Transport to Europe (INOGATE) project, which provides technical assistance to modernize oil and gas transport in central Europe and Asia.

Greece and Turkey signed a binding agreement in February 2003 to build a natural gas pipeline extension connecting Karacabey, Turkey (near Bursa) with Komotini in northern Greece. The deal followed a March 28, 2002 memorandum of understanding (MOU) that called for extending the Iran-Turkey natural gas pipeline into Greece. The pipeline will initially transport around 17.7 Bcf of

natural gas per year, but this could be expanded significantly in the future.

In December 2003, Greece agreed to buy 26,475 million cubic feet (MMcf)/yr of Azeri gas from Turkey through the proposed Interconnector Turkey and Greece pipeline (ITC) from Ankara, Turkey to Alexandroupolis, Greece. After delays resulting in disagreements concerning the diameter of ITC's pipe itself, construction on the initial section of the 175-mile-long pipeline extension (125 miles in Turkey, 50 miles in Greece) is expected to begin in late 2004. The pipeline will eventually be linked with the South Caucasus Gas Pipeline connecting Turkey to Azerbaijan. Greece is optimistic that ITC can further be extended into Italy through an underwater link, as well as eventually transporting gas from Turkmenistan, Kazakhstan, and Uzbekistan. With financial backing from the Trans-European Networks (TEN) of the EU, DEPA and Italy's Eni have begun a feasibility study to determine whether a 112-mile subsea pipeline is a realistic option.

#### Liquefied Natural Gas (LNG)

Greece began to receive liquefied natural gas (LNG) from Algeria in November 1999, beginning a 21-year contractual agreement under which DEPA will purchase 24 Bcf of LNG from Algeria's Sonatrach annually. Greece has one LNG terminal at Revithoussa, near Athens, with a capacity of 23 Bcf per year. It is possible that another LNG terminal will be constructed in Greece or that the terminal at Revithoussa will be expanded in the near future. A January 2004 explosion at a LNG production plant in Skikda, Algeria, caused a halt in supply of LNG that may affect Greek imports temporarily.

#### COAL

Lignite ("brown coal"), a brownish-black coal of low quality used almost exclusively for steam-electric power generation, is Greece's only significant fossil fuel source. Greece's lignite reserves total 3,168 million short tons (Mmst). Over 60% of Greece's electricity is generated through the combustion of domestic lignite, an industry that produces 74,957 thousand short tons a year (2002). The largest deposits are at Ptolemais and Amintaio, in northern Greece. The country has no black coal reserves, and it imports black coal from [South Africa](#), [Russia](#), [Venezuela](#), and [Colombia](#). Domestic production has been partly opened to private companies, but the Public Power Corporation (PPC) is still the largest producer with the right to exploit 63% of known reserves. Private contractors mandate only 5% of reserves for use, while the government has yet to officially allocate the remaining percentage.

#### Market Liberalization

In early 2004, the European Commission warned the Greek government that PPC's near-exclusive lignite exploitation rights may violate EU rules. The EU fears that PPC's extensive mining rights are preventing further liberalization of Greece's electricity market, a process that began in 2001. PPC responded in April 2004, stating that other potential generators have access to lignite. PPC officials further reiterated that the company receives no state aid or subsidies for the lignite extracted in its mines. PPC lignite extraction has increased in recent years despite Greece's signing of the Kyoto Protocol, which identifies lignite as one of the main sources of carbon dioxide (CO<sub>2</sub>) emissions. Greek diversification of energy supply once focused almost entirely on the use of lignite for electrical purposes; natural gas is now being used in greater supply as environmental concerns within the nation increase.

The European Commission issued a second written warning to Greece in May 2004 that it was breaking the rules of the internal electricity market by publishing accounts bundling lignite extraction costs with electricity generation expenditures. The EU fears that such action could distort competition in the overall market.

## **ELECTRICITY**

In 2002, Greece generated 47.22 billion kilowatthours (Bkwh) of electricity, approximately 90% of which was thermal, 10% of which was hydropower, and 2% of which was solar. (Figures are rounded.) Most of the thermal is lignite-fired, with some oil-fired plants. The majority of new plants will be gas-fired. Electricity demand has been growing rapidly -- nearly 50% over the last decade -- meaning (according to the Energy Regulatory Authority, RAE) that some 6,000 megawatts (MW) of additional capacity will be needed to guarantee adequate supply through 2015. Concerns that Greek electrical generation capacity would be insufficient for the 2004 Olympic games in Athens were met by NETC, the Bulgarian transmission company. NETC offered the Greeks a temporary increase from their usual 100 MW daily to over 300 MW daily to avoid blackouts similar to the one that occurred throughout Athens and other parts of southern Greece on July 12, 2004.

### **Market Liberalization**

Greece's Public Power Corporation (PPC) is a majority state-owned monopoly that controls electric production, transmission, and distribution in the country. The company owns and operates 33 power plants on the mainland and numerous smaller plants on the country's many isolated islands. Both EU and OECD have urged Greece to break up PPC. Although EU member countries were required to open their electricity markets by February 1999, Greece was granted a two-year waiver in recognition of its unique situation: it borders no other member state, and much of its territory is comprised of islands that are difficult to link into the national grid. In November 2000, 20% of PPC was sold on the Athens stock exchange. Under the EU's Electricity Directive in February 2001, 35% of the Greek power market was opened to competition. As a result of the partial liberalization of the market, PPC lost its legal monopoly on electricity generation. Greece soon issued licenses for over 2,750 MW of private thermal generating plants. Because the government did not regulate the fledgling open market, however, private producers were unable to fund the plants. As a result, PPC estimates that it still produces 97% of all electricity in Greece. Greece is not realistically expected to maintain a liberalized free market until 2006-2007. According to Power Engineering International, foreign companies interested in Greece's power sector include Electricite de France, Belgium's Tractebel, Italy's Enel and Edison, UK's National Power, and Germany's RWE.

### **Cooperations with Neighboring States**

Greece's power network is currently connected with the networks of Albania, the Former Yugoslav Republic of Macedonia, and Bulgaria, allowing Greece to export electricity to Kosovo in Yugoslavia through Albania and the Former Yugoslav Republic of Macedonia. In June 2001, energy ministers from Albania, Bosnia and Herzegovina, Bulgaria, Greece, Macedonia, and Romania signed a memorandum for the creation of a competitive regional electricity market (REM) with over 55 million customers to be completed by 2005-2006. As the only member of the EU in this cooperation, Greece hopes to be the link to connect a southeast European energy network with an EU energy market. In July 2002, Greece and Italy completed work on a 500-megawatt (MW) High Voltage Direct Current link (HVDC link) under the Ionian Sea to link their national power grids.

Improved Greek-Turkish relations also are affecting the Greek electricity sector. In January 2000, a Greek-Turkish-U.S. (Copelouzos-Gama-ExxonMobil) consortium announced plans to construct a gas-fired power plant in Greece. The plant will have a capacity between 400 MW and 600 MW and will be used to export electricity to Turkey in addition to helping supply the increasing Greek domestic demand. In March 2002, Greece and Turkey signed a bilateral agreement for an electricity grid connecting the nations' power along the Greek-Turkish border to be in operation by 2006. Electricity will be exported via the new 400-kilovolt (kV) transmission line to be constructed between Filippioi (Greece) and Hamidabad (Turkey).

## Renewable Electricity

### *Wind*

European Union guidelines mandate that member states increase their percentage of renewables in electricity production to reach 12% by 2005. As a result, renewable electricity generation projects are on the rise in Greece. The government-established Centre for Renewable Energy Sources (CRES), housed under the Development Ministry, was created to promote renewable energy. CRES estimates that 15% of the country's electricity needs can be produced by wind farms, with installed wind-power capacity possibly expanding from 330 MW at present to a national target of 2,000 MW by 2010. Wind farms are already located on a number of Greek islands (Crete, Evia, Andros, Samos, etc.).

### *Photovoltaics*

Although photovoltaic (PV) technology in Greece has tripled in the last three years, the EU indicated in a report entitled "Photovoltaics 2010" that the nation has enough potential to meet one-third of its energy requirements using PV. A 50-MW parabolic trough-type solar power plant, the first grid-connected solar system of a considerable size, was recently constructed in Crete. DEH is planning a 100-kilowatt PV park for the island of Gavdos, in addition to the already-existing PV capability on the island. In late 2003, with both public and private financial support, construction began on the first Greek PV manufacturing plant to have an initial production of 5 MW. RAE has approved licenses for more than 1,800 MW of renewable installed capacity. However, many of the planned projects have stalled as a result of opposition from local residents concerned about the large amount of land necessary for the undertakings.

Greece maintains the second-largest number of solar-collectors in Europe (after Germany). Twenty percent of households use solar water heaters. In August 2004, ECO//SUN installed the largest rooftop solar-energy unit in Athens. Located atop a German school in the Greek capital, the 33-kilowatt unit is predicted to prevent the city from emitting over 24 tons of carbon dioxide each year.

## COUNTRY OVERVIEW

**President:** Konstantinos "Kostis" Stephanopoulos; since May 5, 1995

**Prime Minister:** Prime Minister Konstandinos Karamanlis (New Democracy); since March 2004

**Independence:** 1829 (from the Ottoman Empire)

**Population (2004E):** 10.6 million

**Location/Size:** Southern Europe, bordering the Aegean, Ionian and Mediterranean Seas/131,940 sq. km. (51,146 sq. mi); roughly the size of Alabama

**Major Cities:** Athens (capital), Thessaloniki, Piraeus, Patras

**Languages:** Greek (official), English, French

**Ethnic Groups:** Greek (98%); other (2%)

**Religion:** Greek Orthodox (98%), Muslim (1.3%), other (0.7%)

## ECONOMIC OVERVIEW

**National Economy and Finance Minister:** Giorgios Alogoskoufis

**Currency:** Euro

**Market Exchange Rate (9/15/04):** US\$1 = 1.2156 Euro

**Nominal Gross Domestic Product (GDP, 2000E):** \$168.2 billion

**Real GDP Growth Rate (2003E):** 4.3% **(2004F):** 3.8%

**Unemployment Rate (2003E):** 9.4% **(2004F):** 9.1%

**Inflation Rate (2003E):** 3.6% **(2004F):** 2.8%

**Major Trading Partners:** Germany, Italy, other OECD Europe

**Major Export Products:** Manufactures, food and beverages, petroleum products

**Major Import Products:** Manufactured consumer goods, capital goods, crude oil, food products

**Merchandise Exports (2003E):** \$15.0 billion  
**Merchandise Imports (2003E):** \$42.5 billion  
**Net Merchandise Trade Deficit (2003E):** \$27.5 billion  
**Current Account Deficit as a % of GDP (2003E):** 4.6% **(2004F):** 5.3%

## ENERGY OVERVIEW

**Minister of Development:** Dimitris Sioufas  
**Proven Oil Reserves (1/1/04E):** 6 million barrels  
**Oil Production (2003E):** 6,400 barrels per day (bbl/d), of which 2,830 bbl/d was crude oil  
**Oil Consumption (2003E):** 429,000 bbl/d  
**Net Oil Imports (2003E):** 422,600 bbl/d  
**Crude Oil Refining Capacity (1/1/04E):** 401,400 bbl/d  
**Major Crude Oil Import Sources:** Persian Gulf OPEC, Russia, Libya, Egypt  
**Natural Gas Reserves (1/1/04E):** 35 billion cubic feet (Bcf)  
**Natural Gas Production (2002E):** 1.0 Bcf  
**Natural Gas Consumption (2002E):** 77 Bcf  
**Coal Reserves (2002E):** 3,168 million short tons (all lignite)  
**Coal Production (2002E):** 75.0 million short tons (Mmst)  
**Coal Consumption (2002E):** 76.4 Mmst  
**Electric Generation Capacity (2002E):** 10.3 gigawatts (Gwh)  
**Net Electricity Generation (2002E):** 47.2 billion kilowatthours (Bkwh)

## ENVIRONMENTAL OVERVIEW

**Minister of Environment, Land Planning, and Public Works:** Giorgos Souflias  
**Total Energy Consumption (2002E):** 1.38 quadrillion Btu\* (0.3% of world total energy consumption)  
**Energy-Related Carbon Dioxide Emissions (2002E):** 104.36 million metric tons (0.4% of world total carbon dioxide emissions)  
**Per Capita Energy Consumption (2002E):** 125.8 million Btu (vs U.S. value of 339.1 million Btu)  
**Per Capita Carbon Dioxide Emissions (2002E):** 2.6 metric tons (vs U.S. value of 5.5 metric tons of carbon)  
**Energy Intensity (2002E):** 7,814 Btu/ \$ 1995-PPP (vs U.S. value of 9,344 Btu/ \$ 1995-PPP)\*\*  
**Carbon Intensity (2002E):** 0.59 metric tons of carbon/thousand \$ 1995-PPP (vs U.S. value of 0.55 metric tons of carbon/thousand \$ 1995-PPP)\*\*  
**Fuel Share of Energy Consumption (2002E):** Oil (62.2%), Coal (28.5%), Natural Gas (5.8%), Other (3.5%)  
**Fuel Share of Carbon Emissions (2002E; Includes Natural Gas Flaring):** Oil (60.0%), Coal (36.0%), Natural Gas (4.0%)  
**Status in Climate Change Negotiations:** Annex I country under the United Nations Framework Convention on Climate Change (ratified August 4th, 1994). Under the negotiated Kyoto Protocol (signed on April 29th, 1998, ratified along with EU in May 2002), Greece has agreed to limit greenhouse gas increase to 25% above 1990 levels by the 2008-2012 commitment period. Within the EU, each country has a different commitment.  
**Major Environmental Issues:** Air pollution and water pollution.  
**Major International Environmental Agreements:** A party to Conventions on Air Pollution, Air Pollution-Nitrogen Oxides, Air Pollution-Sulphur 94, Antarctic-Environmental Protocol, Antarctic Treaty, Biodiversity, Climate Change, Climate Change-Kyoto Protocol, Desertification, Endangered Species, Environmental Modification, Hazardous Wastes, Law of the Sea, Marine Dumping, Nuclear Test Ban, Ozone Layer Protection, Ship Pollution, Tropical Timber 83, Tropical Timber 94 and Wetlands. Has signed, but not ratified, Air Pollution-Persistent Organic Pollutants,

## Air Pollution-Volatile Organic Compounds.

\* 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 based on CIA World Factbook estimates based on purchasing power parity (PPP) exchange rates.

## OIL AND GAS INDUSTRIES

**Organization:** Hellenic Petroleum -- the state petroleum company; DEPA -- the state-controlled gas company; Public Power Corporation -- the state-owned utility

**Major Refineries (capacity - bbl/d, 1/1/04E):** HP Aspropyrgos (134,900), Motor Oil Aghii Theodori (100,000), Petrolas Hellas Elefsis (100,000), HP Thessaloniki (66,500)

**Major Ports:** Piraeus, Thessaloniki, Patras

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*Sources for this report include: CIA World Factbook; Dow Jones News wire service; Economist Intelligence Unit ViewsWire; Financial Times; Global Insight; Oil and Gas Journal; Petroleum Economist; International Market Insight Reports; Global Power Report; CNN Interactive; National Trade Data Bank; Petroleum Intelligence Weekly; Platt's Oilgram News; U.S. Energy Information Administration; World Gas Intelligence; World Markets Energy.*

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## LINKS

For more information on Greece, see these other sources on the EIA web site:

[EIA Data for Greece](#)

[European Union Fact Sheet](#)

Links to U.S. government other sites:

[CIA World Factbook, Greece](#)

[U.S. Department of Energy's Office of Fossil Energy's International section, Greece](#)

[U.S. Department of State Consular Information Sheet, Greece](#)

[U.S. Embassy and U.S. Information Agency, Athens, Greece](#)

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[Greece.com: Government](#)

[Greek Connection](#)

[Greece Now](#)  
[Helapco: Hellenic Association of Photovoltaic Companies](#)  
[Hellenic Petroleum \(HP\)](#)  
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[Prometheus Gas](#)  
[Public Gas Corporation \(DEPA\)](#)

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