

HUMAN SETTLEMENT COUNTRY PROFILE

GREECE

Decision-Making

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Decision-making: The Ministry for the Environment, Physical Planning and Public Works, (YPEHODE), is responsible for the environmental protection and the implementation of sustainable human settlements development in Greece. Within YPEHODE, the Directorates of Regional Planning and Environmental Planning are responsible for planning and management of land resources for spatial structure planning and sustainable spatial development of the country. Special Organisations for Planning and Environmental Protection have been established for the Metropolitan Areas of the country (Athens and Thessaloniki).

The Ministry of Development is the decision making authority on energy and industry issues in general. Environmental concerns and dimensions have been incorporated into the main stream of the Ministry's National Energy Policy and promoted within the framework of its political priorities.

YPEHODE and the Ministry of Transportation and Communications, are also involved in decision-making process on air quality issues related to energy use and transportation. Moreover, YPEHODE is responsible for the improvement of infrastructure for monitoring air pollution. YPEHODE's competencies also encompass decision-making regarding the transportation systems.

As a result of the 1997 administrative reform, many responsibilities have been transferred from the central services of Ministry of Development to the administration of the 13 Regions and 52 Prefectures of the country, through a Presidential Decree.

Urban and land-use planning: In the early 1980s, the urban planning legislation was mainly based on the Urban Development Law (1983) that introduced "urban controlled zones" to direct urban development, safeguarded sensitive areas and restrained unplanned construction and sprawl. This Law also entailed provisions adapting the town-planning legislation according to sustainable development principles, for the expansion of newly developed areas and the improvement of the institutional framework and procedures.

In 1997, this Law was updated with the Sustainable Urban Development Law 2508/97 that introduced improved guiding principles and procedures on urban planning for the balanced and sustainable development of cities and smaller settlements. Apart from the general improvement in planning procedures and institutions, the new legislation introduced for the first time a comprehensive organizational framework for all kind of urban renewal, emphasizing on urban renewal projects of a social nature, as well as on new provisions permitting organized housing development in the outskirts of cities and in areas of secondary and vacation home development.

In 1999, a new land-use planning framework at the national and regional level was established in Greece, through the Law for "Spatial Planning and Sustainable Development" (Law 2742/1999). Based on this Law, the national plan, known as the General Framework for Spatial Planning and Sustainable Development, set specific goals concerning conflicting issues in land use management, which aim at the sustainable use of land and the minimization of negative environmental impacts. The administrative mechanisms for controlling the spatial location of activities that have adverse environmental impacts is strengthened and expanded through environmental impact assessments. The General Framework also provides for the improvement of the regulatory framework regarding the determination of the environment's carrying capacity concerning specific human activities.

The General Framework is supplemented by Special Frameworks containing provisions for particular categories of land (e.g. coastal zones or mountainous areas) or for sectoral issues of spatial importance.

The 1984 Regional Plans of Districts/Administrative Regions that provided for land-use organization, infrastructure planning, and environmental protection, have been superseded today by a new generation of spatial plans, the so-called Regional Frameworks for Spatial Planning and Sustainable Development.

These plans provide the spatial development framework for 12 administrative regions and contain guidance for the development of all 52 prefectures. Only the region of Attica, effectively the Athens metropolitan area, is dealt with separately.

Structural Plans have been developed for the metropolitan areas of Athens and Thessaloniki, and the establishment of Metropolitan Governance is in process. Special Regional Studies, that were carried out in the 1980s and 90s to address environmental problems in sensitive areas, have also been superseded today by the regional plans and a new type of environmental studies. Legislative and administrative measures have been adopted for the protection of people living in disaster-prone industrial areas. A number of earthquake vulnerability studies have been elaborated for urban areas in seismic risk zones.

Public participation is required within the approval procedures of the spatial and urban plans according to the planning level. Law 2742/1999 has established an advisory Council, the opinion of which is required for the approval of the General Framework for Spatial Planning and Sustainable Development as well as for the Special Frameworks, above mentioned. This Council consists of representatives from major stakeholders of the public and private sector.

The General Building Construction Code (GOK) establishes standards related to the quality and safety of construction and stipulates allowance ratios of built surface area to land area. Subsequent Ministerial Decisions have established regulations about buildings' design and construction, including standards related to heating, cooling, ventilation, light and insulation.

Regarding urban forests and parks, the Greek Forest Legislation enforces the incorporation of a significant percentage in new city plans and includes provisions concerning their protection and conservation.

Energy: The exploitation of renewable energy sources (RES) and the promotion of combined heat and power generation (CHP) were initially regulated by Law 1559/85 "Regulation of alternative forms of energy issues and specific issues of power production from conventional fuels". Following assessment of its implementation effectiveness, this Law was substituted by Law 2244/1994 "Regulation of power generation issues from renewable energy sources and conventional fuels". Law 2364/1995 "Establishment of Board for Energy Planning and Control – Import, transportation, distribution and trade of natural gas", constituted the framework for providing financial incentives to promote the use of natural gas and RES for domestic and residential appliances, until the end of 2002. Law 2773/1999 entailed provisions for the liberalization of the energy market and regulation of energy policy issues, without touching upon the provisions of Law 2244/94 on the feed-in tariffs for electricity produced by RES and Cogeneration of Heat and Power (CHP). Under the provision of this Law, the Regulatory Authority for Energy (RAE) was established, in 2000. Most recently, Law 3175/2003 "Exploitation of geothermal potential, district heating and other provisions" entered into force to accelerate the energy market liberalization process and to reflect most of the modifications portended in Directive 2003/54/EC.

The Centre for Renewable Energy Sources (CRES) was established according to Law 1514/85 "Promotion of scientific and technological research", with the scope of promoting use of RES, energy saving and the rational use of energy.

Greek legislation has been harmonized with the EU SAVE Directive (93/76/EC) for the stabilization of carbon dioxide (CO₂) emissions and energy efficiency of buildings. The Ministerial Decision 21425/4707/98 on "Reduction of carbon dioxide emissions through fixing of measures and terms aiming at the energy efficiency improvement of buildings", mandates the development of new regulations for energy efficiency and conservation of buildings and calls for the creation of a certification system,

whereby new buildings have to take an energy efficiency test in order to acquire the “energy and environment” certificate.

Furthermore, the new Code of Energy Efficiency and Energy Saving for all buildings is currently under preparation within the framework of GOK and in compliance with the EU Directive 2002/91/EC on energy performance of buildings.

Air-quality: Under the authorization of the Framework Law 1650/86 “For the protection of the Environment”, legislation has been put in place for the reduction of air pollution from vehicles, heating systems of buildings, industries and other polluting activities. Law 2244/94 on “Auto production, Co - generation and Creation of Public Power Corporation’s Affiliate Companies” applies to atmospheric protection.

Greece has incorporated into national legislation many EU Directives for the protection of the atmosphere (Directives 88/609/EC, 92/72/EC, 96/62/EC, Daughter Directive 99/30/EC and EU Frame Directive 96/61/EC). In addition, many EU Regulations have also been incorporated into the national legal system, which are directly applicable and binding (e.g. Regulation on substances that deplete the ozone layer). Harmonization with the recent Directive 2003/87/EC is under way, for establishing a scheme for greenhouse gas emission allowance trading within the European Community.

The most important Joint Ministerial Decisions (JMD) for the reduction of vehicle emissions include: "The form and content of exhaust emissions Inspection Card", which introduced the exhaust gas emission inspection programme for road vehicles; "Determination of measuring method and permitted values (limits) of carbon monoxide (CO) and hydrocarbons (HC) in exhaust gases of gasoline and LPG powered vehicles" and "Determination of measuring method and permitted values (limits) of the opacity of exhaust gases from diesel powered vehicles".

Poverty: Decision-making is undertaken by YPEHODE (Directorate of Housing and Shelter), Ministry of Foreign Affairs (National Foundation of Emigrants), Ministry of Health and Welfare as well as the Workers Housing Organization (WHO). In addition, Decree 57/1973 addresses Measures for the Social Protection of Economically Needy People. Legislation on minimum pensions and mixed social pensions has also been issued.

Programmes and Projects:

A. Providing Adequate Shelter for All:

Housing policy in Greece is mainly active in the following areas:

- Provision of financial assistance for first residence, through tax benefits and interest rate subsidies.
- Direct provision of low-cost housing to workers and money allowances to renters, through the Workers Housing Organization (WHO).
- Improvement of old and new residential areas through urban and regional planning, building control and selective environmental upgrade projects.
- Public housing support for natural disaster victims (e.g. earthquakes) and special categories (e.g. Greek repatriates, refugees, immigrants, Greek ROM etc.).

The broader objectives of Greek policy include the facilitation of improved housing supply and the provision of owner-occupied housing, mainly through credit, tax subsidies and a set of building codes and planning policies in relation to urban land development and the improvement of buildings and the urban environment.

For social groups with particularly urgent housing needs, these broad policies are complemented through three main programmes:

1. Program for Housing Rehabilitation of the ROM population

Since 1996, a policy framework has been implemented to address the serious problems that Greek ROM face regarding health, education, vocational training, social insurance and housing. In the housing sector, this framework was implemented through actions for improvement of living conditions and for immediate relief of residents of existing tent camps. In April 2001, the need for further action led to an Integrated Action Program for the Social Integration of ROM, which focuses on solving the housing problems of ROM that live in camps, either through improvement interventions, or through development of new settlement areas.

2. Housing Rehabilitation of the Greek Repatriates

Since the 80's, about 148000 Greek repatriates, mainly from the former Soviet Union, came to Greece for permanent settlement. The National Foundation for the Admission and Rehabilitation of Greek Repatriates, established in 1990, initiated an integration program which provided for provisional accommodation and social integration of the repatriates. Following the first transitional period, Law 2790/2000 set the conditions for rehabilitation and permanent housing. Based on that Law, an Integrated Action Program that aims at a more integrated housing rehabilitation policy (free plots, supply of loans and subsidies etc) is under way.

3. Program for accommodation of the victims of the recent earthquake in Athens

The consequences of the earthquake, that struck Athens on 7 September 1999, were disastrous for a number of municipalities within the broader urban complex of Athens. There was serious and extensive damage to the housing stock and about 90000 citizens were rendered homeless, in a total of 100 municipalities and communes, declared as Earthquake Disaster Areas. As part of the restoration programme, the following measures were put into effect :

- Rehousing of the rendered homeless, through special grants for repair or reconstruction of their houses.
- Redesignation of land use in the affected areas, on the basis of special geological studies.
- Quality improvement of the building construction industry and of the Seismic Design Code of 1995.

B. Improving Sustainable Human Settlement Planning and Management: YPEHODE, in close cooperation with the local authorities, is implementing interventions for urban improvement throughout Greece, aiming at upgrading the urban environment, revitalizing urban areas, and promoting the cultural heritage in significant urban areas, in regard to their building stock. This activity is based on the "Urban Reorganization" programme, implemented since 1983.

In 1996 and in conjunction with the second UN Conference on Human Settlements, the National Commission on Sustainable Development of Settlements and Housing was established and produced the National Action Plan for Cities and Housing (1996-2000). The National Action Plan's fundamental aim is the best possible response of Greece to two main objectives: the creation of cities which provide safe, healthy, equal and sustainable living conditions and the guarantee of adequate housing for all. Policies and measures under this plan are suggesting the reorganisation of the system of housing subsidies; social and economic integration and housing for refugees and economic immigrants; projects for community development and upgrading according to the model introduced by the EU pilot programmes to combat poverty; and provision of housing for special disadvantaged categories of people.

The Operational Environmental Programme (OEP) is one of the 24 Operational Programmes of the Community Support Framework (CSF) being implemented in Greece that aims at addressing key environmental issues. OEP 1994-1999, under the 2nd CSF, promoted actions, inter alia, for the improvement of existing urban plans in light of modifications in the urban structure and the functions of the city, for the development of urban plans for estates located in ecologically sensitive areas, coastal zones and islands, as well as the improvement of urban conditions in selected Greek cities, traditional

settlements and tourist sites, in order to improve the quality of life, living and working conditions. This Programme constituted part of a broader National Programme for the restoration of the urban environment in selected Greek cities.

Special Programmes under OEP 1994-1999 included the programme “ATTICA-SOS”, aiming at making «Athens a sustainable city», through improvement of the general quality of life and environmental conditions in the Attica region. The programme included interventions at local and regional level in the thematic areas of air, water, waste, traffic, noise, land planning, urban development, environmental awareness and legislation. Extensive pedestrian areas (archaeological, shopping and green areas) have been created in central Athens and further actions for the rehabilitation of several historic districts are under way. In Thessaloniki, the second largest city of Greece, major urban renewal projects have been carried out through the “THESSALONIKI SOS” Programme.

OEP 2000-2006, under the 3rd CSF, aims at a more integrated environmental intervention for implementing the targets of sustainable development and comprises of seven Priority Axes. Axis 7 refers to “Planning-Town Planning- Renewal and Rehabilitation” and encompasses the following Measures:

- Measure 7.1. on “Physical and Town Planning” supporting interventions in regional and town planning and aiming at the organization of urban and regional areas based on new technologies, the development of monitoring networks, the development of plans at national and regional level, the implementation of pilot and specific local interventions as well as the development of Metropolitan Areas Plans (Attica and Thessaloniki).
- Measure 7.2. on “Renewal and Rehabilitation” supporting the protection and rehabilitation of historic and traditional sites of unique or national importance, such as specific archaeological and cultural sites in the cities of Athens, Pireaus and Thessalonik as well as the protection of areas of particular natural beauty and biodiversity etc.

Under the auspices of the European Union’s Initiative “URBAN”, the Programmes “Urban-Hellas” aim at the improvement of environment, infrastructure and equipment of Greek urban centers that are characterized by high rates of de-industrialization, unemployment and degradation of living and environmental quality. Under the Programme “Urban II-Hellas” 1994-1999, 6 sub-programmes were implemented in 11 Greek Municipalities. Each one of these sub-programmes covered a coherent geographical area with a high degree of homogeneity in terms of its functional and geographical problems and characteristics. The Programme “Urban II-Hellas” 2000-2006, promotes an innovative approach to urban development in Greece. While retaining an integrated approach to social, economic and environmental issues, the main target of the programme is the promotion of innovative actions and more effective development policies, through the identification and designation of specific problematic areas. “Urban II” promoted programmes for the rehabilitation of the building stock, the creation of labour places, mainly through Information Technologies as well as the improvement of transportation and communications. Three urban areas have been selected as intervention areas for “Urban II” (Perama in Attica, Komotini in Thrace and Iraklion in Crete).

In relation to the implementation of “Habitat Agenda”, YPEHODE, recognizing the vital role of participation of the local authorities as the most effective approach to the successful implementation of interventions at local level, initiated in 2002, a pilot programme to draw up and implement “Local Habitat Agendas” in selected municipalities of the country. The basic targets of the programme include the adoption of an integrated strategic planning policy in order to confront the complex contemporary problems of cities and settlements as well as the encouragement of local initiative and participation.

The elaboration of the National Cadastre Project, initiated in 1997, is well advanced today and its imminent operation is expected to contribute significantly to regulating land development in Greece, through identification of land ownership and control of trespassing and illegal construction. It gives

priority to districts near large urban areas or tourist destinations, since these face higher risks for illegal construction. The completion of the National Cadastre is also expected to be instrumental for the implementation of land-use plans and for the effective enforcement of legislation in case of illegal land development.

The City of Athens will host the Olympic Games of 2004. The Olympic Games offer a great opportunity not only to tackle structural problems in the organization of the city, but also to improve the quality of life and environment in the wider region, through efficient use of the Olympic infrastructure. In this context, planning and implementation of the Olympic projects focus on the following objectives:

- Improvement of existing urban infrastructure and addition of new for upgrading life quality.
- Ensure that new infrastructure will not create additional 'burdens' for the urban grid, neither exceed public needs in the post- Games period.
- Minimization of the environmental impact of new Olympic infrastructures.
- Improvement of the city's image and of its historic and cultural profile.

The preparations for the Olympic Games in Athens have required a holistic horizontal inter-governmental response. Delivering the Olympic Games to the required standard has resulted in the effective co-operation between Ministries, several levels of governance and the private sector and thus a positive framework for the future has been established.

C. Promoting Sustainable Energy and transport Systems in Human Settlements: *Energy:* In 1995, YPEHODE elaborated the first National Action Plan for the Abatement of Carbon Dioxide (CO₂) and other Greenhouse Gas Emissions. The Plan is based on a drastic energy conservation policy in all sectors of final consumption (industry, transport, commercial, and domestic sectors), the use of natural gas and the promotion of renewable energy sources.

The Ministry of Development has launched three programmes with measures and actions to promote the dissemination and development of clean production technologies: the National Energy Programme (NEP), the Operational Programme for Energy (OPE) and the Operational Programme for Competitiveness (OPCOM).

NEP promotes energy efficiency, rational use of energy, use of RES and the use of natural gas. OPE was launched under the 2nd CSF in 1994 and continued until the end of 2001. Through its allocated actions and economic incentives, it contributed to the implementation of important projects of the power production sector, enforced investments in the field of rational use of energy and energy efficiency as well as promoted the use of renewable and other indigenous energy sources. In the framework of OPE, a special study was conducted in September 2000 by the National Observatory of Athens on the "Optimal incorporation of environmental requirements, resulted from Kyoto Protocol, into the planning of national actions in the next decade in the energy sector". The study provides an Action Plan with alternative policies and tools, mainly on the national level, for achieving the Kyoto targets. OPE and the Operational Programme for Natural Gas (1994-1999) promoted sustainable energy, energy efficiency and rational use of energy, use of RES, use of environmentally friendly energy sources as well as use of natural gas through the promotion of financial support for RES and energy efficiency projects.

OPCOM 2000-2006 was launched under the 3rd CSF and applies not only to the energy sector but also to a variety of other economic activities. The Measures of OPCOM concern support and encouragement of entrepreneurship, promotion of excellence in enterprises, security of energy supply and promotion of liberalised energy markets and reinforcement of energy infrastructure to promote electricity generation from RES and sustainability.

Greece intends to introduce innovative measures for demand side-management in the industrial sector such as voluntary agreements, which have been identified under OPCOM. These projects include measures of energy management (employment of energy managers and energy auditors, application of monitoring and targeting), upgrading of old production or/and installation of new production and energy equipment, application of tested clean technologies as well as substitution of conventional fuels with natural gas. The involvement of the public sector is necessary due to the large existing potential for energy conservation in government and public administration buildings as well as in buildings of public benefit such as hospitals, schools and existing sports premises. To this end, actions will be implemented by the Energy Service Companies using the 'third party financing', by extending existing legislation so that certain issues pertaining to the public sector financing are addressed.

Concerning promotion of Voluntary Agreements for reducing air pollution, an agreement between the government, the local population and the Public Power Corporation S.A. (PPC S.A) has been contracted, aiming at the exploitation of a thermal station in Athens with fuel switch from heavy fuel oil to natural gas.

PPC S.A. is applying specific policies and programmes for environmental protection, improvement of energy efficiency, development of the country's hydro potential and exploitation of RES (wind, geothermal and solar energy). The Company's environmental policy includes a programme for upgrading its thermal Units in order to increase their energy efficiency and to contribute to overall measures for rational use of energy. These interventions focus on upgrading steam turbines, cooling towers, boilers and auxiliary systems. Recently completed projects include, inter alia:

- The upgrading of two steam turbines in the Kardias lignite-fired Steam Electric Station (SES), Units III and IV, 2x325MW, resulting in reducing the total emissions in these Units about 4-5%.
- The upgrading of three cooling towers in the Ptolemaida and Kardias lignite fired SES, resulting in reducing the total emissions in these Units about 1,3%.
- Various other upgrading projects (e.g. the reconstruction of the boiler in the Ptolemaida lignite fired SES, Unit II) have also been executed.

Additionally, six more projects applying to lignite-fired SESs for improvement of energy efficiency (upgrading of 7 cooling towers and 2 steam turbines as well as installation of informative systems for the on-line monitoring of the efficiency and operational control of the units), which have been incorporated in the OPCOM 2000-2006, under the 3rd CSF, are already under execution.

PPC S.A. has also initiated the implementation of a combined heat and power programme, by converting its lignite-fired power plants for supplying hot water to several district heating networks in Western Macedonia (northern Greece). Presently, 5 district heating systems with a total capacity of 285 MW thermal, are in operation in 3 large cities of northern Greece, neighboring to existing power plants. An additional heating system is under evaluation for supplying further 70 MW thermal in Western Macedonia. The heating system in the area of Megalopolis in Peloponnese (southern Greece) is in operation with a capacity of 20 MW thermal. PPC S.A has also installed 8 hydroelectric power units with a total capacity of 534 MW during 1997-2002, while is planning the construction of 14 hydroelectric power units with a total capacity of 603 MW for the period 2002-2007. The completion of the abovementioned projects are expected to contribute substantially to further reduction of air emissions and, thus, reaching national targets under the Kyoto Protocol.

The National Action Plan for Energy Conservation in the Built Environment, namely "Energy 2001", is the main action taken to comply with Directive 76/93/EC (SAVE Directive). It was prepared under the auspices of YPEHODE and with the cooperation of the Ministry of Development, by a joint scientific committee co-ordinated by CRES. It constituted an integrated plan intending to change existing production and consumption patterns through the promotion of innovative building construction techniques and services and aims at energy conservation and the integration of renewable energy technologies.

Several pilot projects are underway by YPEHODE, in urban areas and buildings, to promote energy efficiency, use of RES and sustainable materials (ecological planning and design), in partnership with local authorities and NGOs. Moreover, pilot environmental education programmes are promoted, such as the implementation of photovoltaic (P/V) systems in 50 school buildings so as to raise awareness on positive environmental impacts of the use of Solar Technologies, in partnership with the Ministry of Education and Greenpeace.

Bioclimatic-energy design of buildings and settlements, as well as the use of RES, are being systematically promoted. Other complementary activities include the training of energy managers in matters of sustainable use and conservation of energy, education of engineers as well as environmental education in schools. Training objectives are met through the voluntary employment of young people in projects using traditional construction materials and techniques, in various regions of Greece.

Transportation: The main policies to reduce energy use in the transport sector include:

- Renewal of the fleet of private and public cars, buses, coaches and trucks
- Use of alternative fuels in vehicles
- Technical inspection of vehicles
- Improvement of infrastructure for means of public transportation (buses, railways, trolley buses, metro etc).

In the early 1990s reduced consumer taxes and vehicle circulation fees were used to encourage replacement of old vehicles with new, cleaner, vehicles; some 380000 were collected and scrapped through a “scrapping programme”. To reduce emissions from road vehicles, a wide range of actions has been taken. Since 1990, exhaust emission regulations have, de facto, required new gasoline-fuelled cars to be equipped with three way catalytic converters. Since 1995, exhaust gas emission inspection programmes for in-use vehicles have been instituted in 30 Prefectures and air pollution fines are imposed on the cars owners not conforming to emission standards. Furthermore, the implementation of the recent Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transport is expected to reduce more emissions from road vehicles.

Road congestion in urban areas has been addressed by a range of policy measures.

- In Athens, infrastructure improvements aiming to alleviate congestion include expansion of the urban ring road, construction of a number of flyovers, improvement of the traffic light system and creation of restricted access areas in the city centre. The odd and even plate numbers’ system for the restriction of the circulation of cars in the Athens city center, on odd and even days alternately, the renewal of the bus and taxi fleet, the economic incentives for the replacement of old cars with new catalytic ones and the operation of the Athens metro, have curbed traffic-related emissions. Reductions in fuel sulfur content, programmes on domestic heating regulation and maintenance as well as the refurbishment of industrial plants with filters have reduced sulfur dioxide concentration in ambient air.
- In Piraeus, computerised systems facilitate management of road traffic generated by seaport activities.
- In Thessaloniki, a new coastal road diverts transit traffic from the centre.
- Other cities have established ring roads to alleviate central congestion. Traffic management planning has been carried out in certain areas, especially those near major tourist attractions.

Priority Axis 4 of OEP 2000-2006 aims at improving air quality in the urban area of Athens. It consists of Measures 4.1 and 4.2 that provide for actions for the improvement of urban traffic management, development of infrastructure for fuel control and reduction of urban noise.

Moreover, during recent years, the following measures have been applied for the improvement of means of public transportation which include both new measures and follow-up of existing activities:

- Creation of two new metro lines in Athens (lines 2 and 3) with 18 stations. 80 million passengers were transported in the first year of operation of the new lines, which resulted in gaining of significant quantities of fuels, due to the reduction in the use of private cars. Development of Athens Suburban Railways up to Korinthos, Chalkis and Athens International Airport at Spata, with double line, electrified, modern signaling and telecommanding systems, of a total cost of more than 190 million €;
- 750 new anti-pollutant buses have been put into circulation in Athens (of a total cost of more than 1.76 million €), 224 hybrid trolley buses (of a total cost of more than 88 million €), 295 Compressed Natural Gas (CNG) buses (of a total cost of more than 73 million €) and 6 new coaches in the old metro line (line 1). A corresponding number of new means of public transportation were put into circulation in Thessaloniki and other Greek cities.
- Development of 2 tramway lines in Athens of a total cost of more than 300 million € ;

In the railways, a double line has been constructed in the greatest part of the line Athens - Thessaloniki, with electrification in some sections, modern signaling systems, telecommanding and purchase of new rolling stock. This project was co-financed by national funds, the 2nd CSF and the Cohesion Fund.

Status: Land–use: The land territory of Greece totals 130800 km². The mainland accounts for 80% of the land area, with the remaining 20% divided among nearly 3000 islands. Two thirds of the land is hilly or mountainous, with the typical landscape being rugged. Approximately 30% of the land is cultivated, 40% has permanent grassland, 20% is covered by forests or woodlands and 4% is urbanized. Greece's extensive coastline (around 13700 km) is equally distributed between the mainland and the islands. Ten of the 15 largest urban centers are coastal, most of them having important harbours, while almost the entire tourist infrastructure is divided among islands and the coastal mainland. Greece is relatively urbanised, with 60% of the population living in settlements with more than 10000 inhabitants. Over 30% of the national population (approximately 11 million) lives in Athens and 10% in Thessaloniki.

The rate of urban growth has slowed significantly in recent years, compared to its impressive boost in the 1970s. Due to the large number of villages and small towns in Greece, the control of urban expansion is of great priority. The systematic implementation of the regional and urban planning policies started in the early '60s, in order to counteract city sprawling, unplanned urbanization, illegal construction and landscape degradation. In the period 1950-1980, almost the totality of the areas that were being incorporated in city plans were areas of illegal and unplanned development and urban sprawl. The relevant percentage in the period 1980-1993 was 81.6%. Since the beginning of the '90s, however, some new trends became apparent. Major elements of these changes include the significant increase in public environmental investment and the creation of a whole new legal framework for planning (see also Chapter "Decision Making"). Among the recent positive developments is the inclusion of the improvement of the urban environment among the priorities of YPEHODE, in line with the EU priorities in this domain.

Energy: Greece's geography and climate provide a large potential for the exploitation of all types of RES. According to the two Greek National Action Plans for the Abatement of Carbon Dioxide (CO₂) and other Greenhouse Gas Emissions (in 1995 and 2002), the largest future contributions are likely to come from wind energy, solar, biomass for district heating and electricity generation and hydro installations.

The electricity generation system in Greece consists of the interconnected mainland system, the systems of the islands of Crete and Rhodes and the independent power stations of smaller islands. PPC S.A., with its integrated existing and planned energy infrastructure (mines, generation, transmission and distribution)

can cover effectively the electric ity needs of Greek citizens by responding continuously to the increase of demand.

Greece's abundant sunshine has the potential to provide a greater contribution to energy supply, mainly through water heating. There are positive developments in solar energy for water heating, where Greece rates first in the EU, with a total installation area of over 2.7 million m². Greece also has a strong industry of solar systems. Furthermore, there is a rapid increase in the domain of wind energy as there are many windy sites suitable for wind generators, especially on the islands in the Aegean Sea. The total capacity of the existent wind-energy parks is 350 MW and is expected to rise up to 1700 MW. P/V systems can also be implemented to provide cost-effective electricity in distant areas, while grid-connected central stations could support the weak grids of the islands in the Aegean Sea. The market potential for PVs in Greece is mainly related to stand-alone systems in remote areas for electrification and agricultural use. New geothermal energy investments, of 350 MW, in Aegean and Trace, are underway. Interest for biomass power is also progressively raising. Over 35 projects of overall 350 MW are related to the exploitation of forest and agricultural biomass. As for geothermal energy, PPC S.A plans to exploit the most important geothermal energy sources in the country.

Air quality and Transportation: The major modes of passenger transport in Greece are road (64%) and air (19%). Public transportation accounts for 13% of passenger-kilometers traveled. The use of private cars for passenger transport has tripled since the early 1990s. The road vehicle fleet consists of some 3.5 million vehicles with four or more wheels and 550000 motorcycles. Public transport in Athens consists of buses and three subway (metro) lines. Some 1600 diesel buses serve about 420 million passengers per year. An additional 400 electric trolley-buses serve about 62 million passengers per year. The recently expanded subway system totals 44 km. The expansion project has been coordinated with the bus and trolley-bus systems and with car parking areas.

Greek motor vehicle fuels comply with EU standars, as leaded fuel is being progressively phased out and special restrictions have been set regarding the content of aromatic compounds in gasoline. However, further reduction of the sulphur content in diesel fuel is required. In 1997, road transport was estimated to contribute 19% of total CO₂ emissions from fuel combustion in Greece. Also road transport accounts for the majority of NO_x, CO and NMVOC emissions, signalling the need to control two-stroke engines and to eliminate old vehicles without adequate control systems.

Capacity Building, Education, Training and Awareness raising: The Government supports the involvement of local groups and organizations in the sector of social and cultural services and welfare at the local community level. This includes encouragement of local authorities' initiatives for the improvement of social infrastructure and transport systems, support of relevant local initiatives by non-governmental bodies for the implementation of the National Action Plan, training of local government officials and awareness raising of the interest of the local population for the promotion of the National Action Plan.

YPEHODE supports awareness raising efforts, giving priority to information, education and training programmes, which are primarily directed towards younger generation and aimed at enriching their education on environmental issues. It also conducts formal public education campaigns to raise public awareness of development-related environmental issues. To present the programme "Energy 2001" and educate both the general public and experts on energy issues, YPEHODE has organised a series of seminars and conferences and has sponsored a number of important and succesful pilot projects, in cooperation with various institutions.

For the preparation of the National Report submitted to "Habitat II", capacity-building and technology issues were supported by an open dialogue between agencies and the public as well as information

dissemination through professional journals, the press and informative leaflets. A nationwide competition “for models of policy and programme implementation for improving the quality of the local urban environment and housing through specific projects” was used as a method of publicizing the activity of the National Committee and prepare the country for its participation in the Habitat II Conference. Additionally, the pilot programme “Local Habitat Agendas”, launched by YPEHODE in 2002, for the local implementation of Habitat II Agenda, is based on cooperation with and participation of the local authorities.

Under the auspices of Ministry of Development, CRES plays an important role in implementing Government programmes in energy efficiency and renewable energy sources, as well as in collecting and processing data relating to energy efficiency. CRES has laboratories for certification of RES technologies, carries out studies for the determination of the physical, technical and economical potential of RES and participates effectively in the evaluation and monitoring of investments implemented in the energy sector.

PPC S.A also places great emphasis on communication and information dissemination; it launches media campaigns (mainly TV spots) for promotion of energy saving, energy conservation and rational use of energy, establishment of specialized customer service offices, introduction of a multi-zonal tariffs' structure in the industry sector as well as distribution of advertising leaflets.

Information: Through the General Framework for Spatial Planning and Sustainable Development, an information network system for spatial planning has been established as an integrator of geographical information, digital analysis of telescopic images and data base on planning issues. This information system collects and analyzes information from various sources, in order to measure spatial transformations and changes in the framework of the national goals for national and regional development. Suitable regional indicators are being established, aiming at evaluating the implementation results of regional planning and development towards sustainability and the reduction of the environmental impact from the trends of urbanization within coastal zones and urban system. Moreover, the establishment of a “Spatial Planning Observatory” is in process, so as to serve as a mechanism for information and monitoring of the spatial evolution and changes in Greece.

CRES collects and analyses primary energy data as well as socio-economic and technical data pertaining to energy use. It has a complementary role as the national co-coordinating body for the EU Project on Energy Efficiency Indicators under the SAVE programme. This project aims at harmonizing data collection, development and implementation of a common method for analyzing energy efficiency at the international level, and comparison of results among EU Member countries. In the context of the programmes PHARE, the Division for Renewable Energy Sources and Rational Use of Energy of CRES has also implemented various seminars at EU level, campaigns, market studies, compilation of databases with dispatching information material etc.

Dissemination of information concerning actions and policies of YPEHODE is available through the Ministry's website: www.minenv.gr. Information on recent developments in major environmental programmes, such as OEP and “URBAN Hellas”, is available at the respective websites www.epper.gr and www.urban.gr. Information on energy and energy-related issues is collected by the competent Ministries (YPEHODE and Ministry of Development, with website: www.ypan.gr) and by CRES and is disseminated at both domestic and international levels mainly through government publications.

Furthermore, PPC S.A complies with JMDs 75308/5512/90 and 37111/2021/03, concerning public information in the context of conduction of Environmental Impact Assessment studies of all company's projects and activities.

Research and Technologies: The Information Network System for spatial planning and the Spatial Planning Observatory are expected to provide a solid basis for further research on spatial and regional planning in Greece. Several research projects concerning energy efficiency (e.g. Environmental Energy map of Attica – Household sector, Integration of solar systems into traditional buildings and settlements in North, Central and South Aegean) have been assigned from YPEHODE to academic institutions

Clean and environmentally sound technologies are promoted and applied in production through incentives foreseen under Development Law 2601/1998 and the OPE. Moreover, other legislation related to the promotion of sustainable production patterns addresses several issues such as: the use of natural gas for electricity generation, both in converted oil-fired stations and new combined-cycle gas turbine power plants (PPC S.A. has constructed and operates 5 large natural gas fired units of a total capacity of 1595 MW in the period 1997-2002 and is planning the construction of another combined cycle gas turbine unit at Lavrion with a total capacity of 380MW, which is expected to be in operation in 2006); the use of natural gas for industrial heating processes; district heating from PPC S.A power plants or from independent thermal stations to satisfy heating and cooling needs of local municipalities; energy saving measures in the industrial and building sectors; wind power plants; small hydropower plants; utilization of solar technology (mainly for water heating and cooling); bio-mass use for power production; use of gas-domestic equipment etc.

OPCOM 2000-2006, launched by the Ministry of Development, includes Priority Axis 7 on “Technological Innovation and Research”, which consists of five Measures aimed at supporting, inter alia, public awareness of new technologies, formulation and management of R&T information and co-operatives for research and technological development in sectors of national priority.

The Operational Programme of Research and Technology (OPRT), 2000-2006, of the Ministry of Development, includes measures to promote environmentally friendly technologies and forms of energy, improved materials and new production and manufacturing methods. The Programme also promotes cooperation between research and production institutes as well as transfer and introduction of environmentally friendly technologies.

CRES is a member of the Organization for Promotion of Energy Technologies (OPET). The OPET network created under the framework of the THERMIE programme is aiming at the promotion of innovative energy efficient technologies for environmental protection. In addition, the General Secretariat of Research and Technology (GSRT) of the Ministry of Development has completed a study on "Environmentally Sound Technologies in Greece: Progress of Research and Technology, Economic and Social Impacts".

PPC S.A is actively involved in the research and installation of P/V units. PPC's S.A. policy focuses on the application of the best available techniques to both new and existing generation units, with the least possible emissions. Additionally, the installation of advanced pulverized fuel (PF) technology has been applied in the new Florina power station (Northern-Greece). PPC S.A. is also participating in Research and Development EU Projects (IPs and NOE) that aim at developing and validating all innovative technologies for capturing, transporting and storing of CO₂ as well as for developing other advanced generation technologies.

Financing: The fiscal priorities for the housing policy in Greece aim at reforming of the system of subsidies, supporting of innovative efforts to reduce the cost of new housing, reforming the system of financing (public investment, subsidies, local taxes) for infrastructure works and securing public spaces in newly built-up areas as well as providing financial incentives to promote new technologies and systems of application of soft forms of energy.

Other special financing programmes include: loans to civil servants, local government, and public organizations; special programmes of WHO for the provision of subsidized housing for low and middle-income workers; special housing programmes for immigrants of Greek origin from the former Soviet Union (see Programmes and Projects, A. Providing Adequate Shelter for all) and special assistance for housing of families with more than three children.

Under OEP 2000-2006, an indicative budget of around 118 million € has been allocated to Priority Axis 7, (Measures 7.1 and 7.2) on physical and urban planning and related interventions. At Regional level, financial support is provided by the Regional Operational Programmes, for each Administrative Region of Greece, under the framework of the CSF. Additional activities concerning development of infrastructure in Greece are also partially financed by the EU Cohesion Fund.

Energy: Promotion of energy related activities is supported through incentives such as the grant and interest subsidy and/or leasing subsidy as well as the tax allowance and interest subsidy.

Economic instruments in force in Greece are encompassed within the OPCOM, OPRT II, the Development Law 2601/98, the mechanism of Third Party Financing (TPF) etc. Greece applies a policy of differentiated excise duties on mineral oils, with exemptions on RES and the biofuels. Around 92 million € per year, equal to 5-7 per cent of the total revenue collected from motor fuel taxation (0,015 € per liter) is channeled to YPEHODE for environmental purposes. Moreover, fiscal incentives are applied for the construction of gas co-generation plants, the modifications for the introduction of gas in operating units of the secondary sector, subsidized by national and EU funds. A percentage of 75% of the purchase and installation cost of the domestic natural gas equipment is also deductible from the taxable income of natural and legal persons whereas gas is exempted from any excise tax up to 2010 and bears a decreased V.A.T rate (8%).

Transportation: A revised set of sales' taxes on vehicles which passed into law in 1999 sets increasing sales taxes in proportion to engine capacity as well as higher rates for vehicles lacking pollution control equipment. Rates for passenger cars range from 0 for hybrid and electric vehicles to 346 per cent of the wholesale price for large vehicles without catalytic converters. The ranges within classes of cars incorporating pollution control technology are much smaller. Motorcycles that represent a rapidly increasing portion of the Greek vehicle fleet, are also included under this measure. Tax incentives to replace old vehicles with new ones were introduced in November 1990 but suspended shortly thereafter for budgetary reasons. Consideration is being given to reintroducing this scheme. About 380000 old cars were removed during the two years of operation of this scheme, at an average cost per vehicle of 3000 €. Concerning motor fuels, natural gas for vehicles does not receive a preferential tax treatment but is taxed at the LPG rate, in accordance with EU Directives. The only motor vehicles supplied with natural gas today in Greece are 300 buses used in local public transports and in this case natural gas is exempted from the excise duty, as Greece has a derogation (procedure of article 8.4 of the 92/81/ EC Directive) for vehicles used in local public transports.

Cooperation: Regarding regional and international cooperation, Greece participates in the EU groups and programmes, in the OECD working groups (in particular for the territorial review of the effects of the Olympic Games in the development of Athens) as well as in committees and working groups of the UN, e.g. the Center for Human Settlements and the Committee for Housing, Building and Planning of the Economic Commission for Europe. In cooperation with the UN Committee of Human Settlements, a Colloquium on Urban Management was held in 1995. In the same year, a seminar was held on Sustainable Development of Human Settlements. The Greek National Committee, set up by YPEHODE, prepared the National Report submitted to the Habitat II Conference (June 1996).

Greece has also participated at: (a) the European Ministerial Conferences for Sustainable Housing (Copenhagen-1996, Amsterdam-1997, Genva-2002), (b) the European Architectural Competition Programme (EUROPAN) which had as a theme the current problems of urban areas and the promotion of sustainable solutions, (c) the International Council for Local Environmental Initiatives (ICLEI) and (d) the two European Conferences for Sustainable Cities and Towns. The Organization for Planning and Environmental Protection of Athens has been an associate member of "Metropolis", the World Association of the Major Metropolises, and is still a member of the European Metropolitan Regions Network (METREX's Interim Management Committee).

In relation to international cooperation, Greece has signed and ratified most major international conventions related to human settlements, including among others the Rio Convention (1992) on Biological Diversity (Law 2204/1994, OJG 59/A/1994) and the Paris Convention (1994) on Combating Desertification (Law 2468/1997, OJG 32/A/1997). Greece has also signed the European Landscape Convention (2000).

Greece has signed and ratified a Memorandum of Understanding (MoU)/collaboration Protocol with Turkey (Law 2902/2001, OJG 77/A/2001) that has already entered into force (30-6-01), covering issues of possible bilateral cooperation related to human settlements, such as desertification and antiseismic code studies. Greece has also signed and ratified an MoU with Cyprus (Law 2424/1996, OJG 147/A/1996) covering issues of possible bilateral cooperation related to human settlements such as coastal zone management. Furthermore Greece has signed (but not yet ratified) MoU's with Georgia, FYROM and Albania and an Agreement of Understanding with Bulgaria, covering issues such as sustainable human settlements and buildings, spatial planning, land use planning, coastal zone management and desertification.

In December of 1999, Greece became an official member of the OECD's Development Assistance Committee (DAC). In this context, and based on the requirements set out by Law 2731/5-7-99, the Bilateral Programme of Development Assistance and Cooperation in the field of Environment and Sustainable Development of YPEHODE was initiated. With regard to human settlements, the Bilateral Programme includes three thematic areas, amongst which is the spatial planning and economic development, divided into three sub-sectors: (a) Strategic spatial planning and priorities of spatial development, (b) Institutions and administration - management of spatial planning development and organization, and (c) Establishment of mechanisms and agencies collecting information and data. Through this Programme several projects were funded, with emphasis on integrated spatial planning policy and capacity building issues in partner countries. Specifically, six projects were funded in 1999, with a total budget of around 516507.7 € and six more in 2000, with a total budget of around 119736 €. These projects were implemented through Universities and Research Institutes in Greece. The recipient countries were countries from South East Europe, the Mediterranean and East Europe, Caucasus and Central Asia (EECCA). In the context of the National Bilateral Programme of DAC "Hellenic Aid" for the year 2002, the total budget allocated to the implementation of housing policy projects in partner countries was around 0.33 million USD. The implementation of these aid projects contribute to the MDGs/WSSD targets for sustainable development and poverty reduction.

Energy: PPC S.A has a long tradition of co-operation with European electricity companies. The main area of co-operation with the Balkan countries has been the study and construction of interconnections among the electricity systems of various countries, followed by the development of commercial relations through the exchange and the buying/selling of electric power. Electricity interconnections exist in the interconnected system with Albania, Bulgaria, FYROM and Italy (under commissioning). Moreover PPC S.A has ratified Agreements of Co-operation with electricity companies in other countries. PPC S.A.'s proactive efforts towards sustainable development and climate change are demonstrated through participation in the "Energy Wisdom Programme", a Programme of co-operation between the association

of EU electricity companies (EURELECTRIC) and the European Commission (DGXVII/DGXVI). Greece cooperates with the other EU Member States in the dissemination and promotion of RES and energy efficiency projects. Furthermore, the Ministry of Development aims at incorporating and promoting EU Programmes such as Intelligent Energy – Europe (2003-2006), ALTENER, SAVE, JOULE-THERMIE, SYNERGY, TACIS, PHARE, R&D Programmes as well as new policies such as MEDA and the Energy Charter.

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