

CHAPTER V: The Ten Year Framework of Programmes on Sustainable Consumption and Production Patterns

I Introduction

Changing unsustainable patterns of production and consumption was identified as one of the three overarching objectives of, and essential requirements for, sustainable development, in the Johannesburg Plan of Implementation and stated as such in its Introduction. Individual states, regions, local authorities, private sector actors and non-governmental organizations have mobilized in this direction, but we are still a long way from seeing this objective fulfilled or even ensuring a certain path towards making it a reality. However, a significant shift in attitudes can already be seen and plans, actions and initiatives are slowly aligning towards forming a sound and effective 10 Year Framework Plan led by UNEP and equally supported by other UN agencies. The chapter below highlights some of these plans, actions and initiatives that are taking place in Greece, as well as future steps that are being planned to give further impetus to the process and to ensure that the progress achieved leads to a paradigm change in the dominant patterns of consumption and production.

Combating Climate Change by moving towards a competitive economy of low carbon consumption is one of the four pillars of the mission of the Ministry of Environment, Energy and Climate Change (YPEKA) wherein the strategic objective to promote green products and sustainable production and consumption patterns is embedded.

Greece has achieved some success in relative decoupling of environmental pressures from economic growth: e.g. NO_x and CO₂ emissions have been growing at a rate slower than GDP. Strong decoupling has been achieved in the use of nitrates and pesticides. The intensity of water use for irrigation has continued to increase. While the agriculture and industry sectors are declining or remain stable in production, international tourism and both passenger and freight transport have grown and are likely to continue to grow rapidly. Energy intensity has improved.

I Decision-Making, Legal and Regulatory Framework, Policy Instruments

Greek environmental policy is largely based on EU environmental regulations, and EU directives. As a consequence, Greece has passed important environmental legislation and transposed EU directives into national law on a wide range of issues, affecting –directly or indirectly– almost every aspect of sustainable consumption and production. Further positive developments in the last decade or so include the creation of The Greek Ombudsman with, inter alia, environmental responsibilities, the creation and operation of an environmental inspectorate (see below), as well as positive results of surveillance and enforcement concerning marine pollution. Significant progress has been made in constructing urban wastewater treatment infrastructure (with large financial transfers from the EU funds); all major wastewater infrastructure projects are scheduled to be completed by 2013. Water pricing has been adjusted so as to reach 95% recovery rates in large cities like Athens. This development was largely driven by the EU Water Framework Directive, which required the implementation of water-pricing policies towards the recovery of water service costs by 2010. However, the implementation of proper pricing schemes for agricultural water uses still remains a challenge.

The principle of *Green Growth*, in which the environment is treated as a growth resource, is central to the mission of the recently created Ministry of Environment, Energy and Climate Change. The main pillars of the growth intervention programme are as follows: 1) Combating climate change by moving to a competitive economy with low carbon consumption, including a series of policies which focus on improving energy efficiency, 2) Sustainable management and protection of natural resources, 3) Enhancement of the quality of life, with respect for the environment, 4) Strengthening of environmental governance mechanisms and institutions.

Environmental Impact Assessment – Strategic Environmental Assessment

Environmental Impact Assessments (EIA) have been in place since 1990. Greece has transposed all relevant EU legislation concerning EIAs and Strategic Environmental Assessments (SEAs) to the point that they have now become a most important operational tool for projects of all sizes (from smaller businesses to large infrastructure projects (e.g. transport, energy, water)).

EIAs for smaller projects and medium-sized projects or businesses are being considered by Local Authorities and Regions while the Ministry of Environment, Energy and Climate Change oversees larger projects. The majority of environmental impact assessments submitted to authorities fall under the following sectors and types of projects:

- Road works
- Water Works
- Port works
- Infrastructure systems
- Mining and related activities
- Tourism facilities – planning / urbanization projects
- Stock-breeding and aviculture installations
- Aquaculture
- Industrial and Manufacturing installations and Industrial Zone redesign works
- Special projects

Decrees permitting the operation of such facilities and projects, by setting specific environmental conditions to be met during their operation, are issued following an EIA and/or an Environmental Impacts Pre-Assessment (EIPA) which is prepared by a private scientist or technical expert at the request of the facility's owner. The great majority of facilities require an EIPA, first, and then an EIA. Some categories / sizes of businesses require just an EIA. There is also no EIPA required for existing facilities. During the permitting process, copies of the EIA have to be sent to various other agencies which have to give their consent on parts of the study that fall within their operational jurisdiction. Additional or complementary information is often asked as well as requests (on behalf of public authorities) for changing parts of the EIA study.

Concerning SEAs, whose form is for the most part dictated by EU Directive 2001/42/EC, Greece introduced the necessary provisions for the environmental assessment of the effects of certain sectoral plans and programmes, on a national, regional and local level. SEA procedures for national and regional plans and programmes are managed and coordinated at the central level: all the relevant sectoral ministerial services are involved in these procedures. YPEKA retains general supervision responsibilities. The SEA procedures for prefectural and local plans, policies and programmes are managed and coordinated by regional environmental services. Public participation is part of the process.

Even before SEA became mandatory, it was carried out in some form for the Athens Olympic Games Master Plan, and for Specific Framework Plans (e.g. coastal zones and islands; mountain areas). It is now required specifically for Areas for Integrated Tourism Development and for 2007 -2013 EU funded investment programmes. The SEA procedure requires a qualitative and quantitative assessment of the environmental impacts of plans and programmes, including cumulative impacts, as well as the examination of alternatives.

Environmental Inspectorate

Law 2947/2001 (Official Journal of Government - OJG A / 228 / 2001) provided for the setting up of an Environmental Inspectorate agency, as part of an effort to strengthen inspection mechanisms and to deal more effectively with serious infringements of environmental legislation. The organizational details for the setting up of this agency were specified in Presidential Decree 165/2003 (OJG A / 137 / 2003), with the Hellenic Environmental Inspectorate (HEI) coming under the direct authority of the Minister of Environment. The agency became operational in January 2004. Its main responsibility lies in carrying out inspections for monitoring whether state, public and private projects and facilities meet the environmental conditions imposed upon them by the legislation and, more specifically, the environmental conditions described in their environmental permit. Law 3818/2010 established a Special Secretariat for the Environment and Energy Inspectorate and HEI became part of this Special Secretariat. HEI also has the authority to coordinate local, regional and central inspection services, prepares and provides reports on the agency's work and informs the European Commission on the progress achieved in relation to EU environmental legislation (as required by Recommendation

2001/331/EC of the Council and the European Parliament, which deals with the minimum criteria on environmental inspections). Some examples of works and facilities whose environmental conditions are inspected by HEI are the creation and operation of landfills, the operation of tourist facilities, industries, mining facilities, animal-farming, aquaculture etc. Its authority also extends to inspecting the proper implementation of land use legislation, raising and operating illegal constructions as well as illegal interventions in protected habitats, rivers and the coastal zone. During the first 3 years of its operation the HEI has forwarded more than 300 cases of environmental legislation infringements to judicial authorities with a recommendation of imposing administrative sanctions as provided by law. On average, there are about 3 infringements per case, and the problems uncovered range from a complete lack of environmental permitting, to lack of monitoring systems or specific permits (e.g. for solid waste disposal) or improper / inadequate operation of pollution control systems. The HEI has recommended the imposition of fines amounting to a total of more than EUR 10 million within these three years. It should be noted that the numbers mentioned above deal only with the operation of the HEI and do not include the cases reviewed by local or regional authorities.

Priority is given to cases involving industrial facilities that fall under the scope of EU Directive 96/61/EC (IPPC Directive) for the Integrated Pollution Prevention and Control, as well as facilities and activities constructed or operating in areas with fragile ecosystems (rivers, lakes, Natura 2000 areas). HEI's goal has been to increase the number of inspections carried out, covering the whole country (currently it is divided in two main sections: southern and northern Greece) and to secure that it operates according to the highest international standards. The Minister of Environment, Energy and Climate Change recently announced that the imposition of fines from now on will follow an established methodology for determining the height of the sum to be assessed. This methodology will take into account factors such as the gravity of the infringement, frequency, relapse, the extent to which emission limits were exceeded and the type of activity. This will ensure equality before the law, so that all inspections are carried out with the same criteria and all cases judged according to the same methodology.

Renewable Energy Sources (RES)

The *General Framework Plan for Spatial Planning and Sustainable Development* (OJG 128 / A / 03.07.2008) together with the *Special Framework Plan for Spatial Planning and Sustainable Development for Renewable Energy Sources* (OJG 2464 / B / 03.12.2008) provide guidelines and identify criteria for the site allocation of RES projects, per RES category and type of geographic area, with emphasis on wind energy projects. It facilitates permitting authorities as well as interested investors by settling conflicts between different land uses so as to ensure sustainability of RES investments as well as their harmonious incorporation within the natural and human environment. It determines the key prerequisites for the harmonisation and coherence between all other spatial and urban plans subject to the Special Framework for RES, contributing at the same time to the achievement of the targets set under national and EU policies. Recent changes in the relevant legal framework, introduced with Law 3851/2010 (OJG 85 / A / 2010) aim to simplify and streamline the permitting process, to update the targets set for RES and to make special provisions for the establishment of marine, off-shore wind installations.

Promotion of recycling

Major pieces of legislation concerning recycling were introduced during the last decade, forming a coherent framework for the alternative treatment of waste. The pivotal piece of legislation for this transformation was Law 2939/2001 regarding "Packaging and Alternative Management of Packaging and Other Products - Establishment of a National Organization for the Alternative Management of Packaging and Other Waste" (OJG 179 / A / 2001). This law transposed the EU "Packaging and Packaging Waste Directive" 94/62/EC, and also set the guidelines and the general framework of alternative management of waste for a series of other products such as ELVs, used car tyres, used oils, batteries, accumulators, WEEEs and waste from demolition and construction. For these waste streams respective Presidential Decrees (PD) have been already published, with the exception of demolition and construction waste which is covered by a Joint Ministerial Decision (JMD), in order to define the necessary procedures for their management. The legal documents in question, setting the details for the alternative management of each waste stream, are as follows:

- Tyres: PD 109/2004 (OJG 75 / A / 05.03.2004);
- Oils and waste oils: PD 82/2004 (OJG 64 / A / 02.03.2004);
- End of Life Vehicles (ELVs): PD 116/2004 (OJG 81 / A / 05.03.2004) incorporating EU Directive 2000/53 in national legislation.

- *Batteries and accumulators*: PD 115/2004 (OJG 80 / A / 05.03.2004) and JMD 41624/2057/?103 / 28.9.2010 (OJG 1625 / ? / 11.10.2010) incorporating EU Directives 2006/66 & 2008/103.
- *Waste of Electrical and Electronic Equipment (WEEE)*: PD 117/2004 (OJG 82 / A / 05.03.2004) incorporating EU Directives 2002/96 and 2002/95 in national legislation .
- *Demolition and construction waste*: JMD 36259/1757/?103/23.8.2010 (OJG 1312 / B/ 24.8.2010).

Green Public Procurement

A number of strategic steps have recently been undertaken to promote Green Public Procurement (GPP), recognizing its importance in achieving sustainable consumption and production patterns and moving towards a competitive economy of low carbon consumption. Indicatively, in June 2010 Law 3855/2010 was passed, containing a number of relevant provisions: the law set out the framework for the establishment of a National Action Plan (NAP) for the promotion of GPP, defined the Ministry of Environment, Energy and Climate Change as the coordinating ministry for actions and measures regarding GPP, and finally made provisions for the establishment of an inter-ministerial committee for the promotion of GPP. In September 2010 a Ministerial Decision (MD) was published, establishing the above mentioned inter-ministerial committee, with membership from all the relevant ministries regarding public procurement in Greece. Representatives from the academic sector, non-governmental organizations (NGOs) and the private sector can also be invited in the meetings of the committee, thus ensuring commitment on the collaborative design and implementation of the GPP NAP from both the public and private sector as well as NGOs and academic networks. The Committee aims to fulfill several objectives including, among others, the following :

- To develop a NAP on GPP within a deadline of 18 months and update it when necessary
- To investigate the areas where necessary legal reforms are required and suggest necessary legal acts and measures to the competent ministries.
- To raise stakeholder awareness regarding the intentions of the government to develop a GPP NAP and programmed activities.
- To investigate and select products, services and works as well as necessary environmental criteria
- To obtain feedback from stakeholders regarding market readiness, necessary measures, and priority products and services
- To obtain relevant projects and studies and organise seminars, conferences and awareness-raising events, for promoting GPP and to invite experts to assist its works when necessary

The above-mentioned NAP aims to:

- Design environmental criteria for the procurement of those categories of products chosen as pilot green procurement
- Investigate the existence of green products in Greece
- Evaluate the environmental benefits which will result from the procurement of green products from the Greek public sector
- Design a strategy for informing and training public sector employees as well as for informing procurers
- Create a Guide / Manual for incorporating environmental specifications during the various stages of concluding a public contract.
- Design indicators for evaluating the achievement of goals set and actions prescribed in the NAP.

Prior to recent developments, one of the first steps for the promotion and establishment of Green Public Procurement in Greece was taken through the formulation of JMD 14826/2008 (OJG 1122 / B / 2008) on "energy efficiency and energy saving measures at the public and the wider public sector". This JMD tackled for the first time the issue of energy saving measures at the public sector in relation to the acquisition of energy consuming products and maintenance/management of the building stock. Within the JMD, energy standards for a series of electrical & office equipment are placed, towards the direction of a minimum set of energy requirements aiming to formulate, in the future, a new procurement law for the public sector that will incorporate energy award criteria.

YPEKA has recently enacted Law 3855/2010 ("Measures to improve energy efficiency in end-use, energy services and other provisions"). This Law foresees, among other, the identification of the minimum requirements on energy efficiency for the procurement procedures of the public and wider public sector, as well as the implementation of methodologies for a life-cycle cost minimization of purchased products or respective methodologies that ensure their economic sustainability. In

November 2010, a new unit was created inside YPEKA, dealing exclusively with Green Public Procurement, EMAS and Ecolabel issues, entitled "Office of Green Public Procurement and Environmental Standards" (MD 45414/21-10-10, OJG 1732/ B / 04-11-10). The new unit will work for the promotion and implementation of green public procurement, the integration of environmental criteria in public contracts and support work groups and committees established under the National Action Plan for GPP.

Tourism development

The integration of nature conservation issues in tourism development is strictly linked to coastal zone management and land use planning. The *Special Framework Plan for Coastal Zones and Islands* and the *Special Framework Plan for Tourism* (in preparation) set specific restrictions on construction of tourist facilities, especially along the coastline. Tourism infrastructure development may be limited or subject to stricter control in specially identified areas, the "Areas of Controlled Tourism Development". The "Areas of Integrated Tourism Development" aim to control tourism development and improve the whole range of tourism services. The mandatory EIA studies for new tourism facilities and special tourism infrastructure have contributed to the integration of environmental concerns into tourism development projects.

Strategies, Plans, Programmes and Projects

National Energy Efficiency Action Plan

The National Energy Efficiency Action Plan foresees a number of measures to be applied to the public sector, as a contribution to the overall EU targets for Energy Efficiency. Specifically, Measure DM2 "Compulsory procurement procedures with respect to public buildings (green procurement – energy-efficient and RES technologies)" includes the following:

- recording and determination of procurement needs in materials and equipment;
- specification of products (materials and equipment) which contribute, directly or indirectly, to energy savings;
- action programme to replace existing energy-intensive products;
- implementation of procurement which is considered acceptable in financial and energy terms and based on mature technologies and RES.

On a related note, the Prime Minister of Greece recently announced the creation of a 200MW photovoltaic park by the PPC in the northern area of Ptolemaida. PPC is to hold an international tender to find a strategic partner for its future renewable energy investments, including the above mentioned park which is expected to be the largest one in the world when completed.

Strategic Plan for the Development of Research, Technology and Innovation

The General Secretariat for Research and Technology (GSRT), which belongs to the Ministry of Education, Lifelong Learning & Religious Affairs is the main authority responsible for the development and implementation of *R&D policy* in Greece. In view of the National Strategic Reference Framework (NSRF) for the years 2007–2013, which constitutes the reference document for the programming of European Union Funds at national level for the years 2007–2013, GSRT has elaborated a strategic plan which presents the *strategy for the development of research, technology and innovation* during the above mentioned years. Along with economic priorities, 11 thematic priorities were introduced into the strategic plan after public consultation and identification of the economic and social sectors that hold a strong position in the country's economy. *One of the plan's thematic priorities deals specifically with environmental issues.* The objective of the thematic priority on Environment is the funding of research in order to a) allow a better understanding of the environmental processes, problems and risks, b) promote the sustainable management of the environment by examining the human impact on country's environment, c) seek out "cleaner" technologies and production processes and d) attain national goals concerning the improvement of environmental indicators supporting competitiveness.

One of the programme's calls, launched in 2009 dealt with the creation of new knowledge-intensive enterprises (spin-off and spin-out) and aiming at encouraging the creation and further development of innovation activities of enterprises, the exploitation of patents having a commercial potential, the implementation of innovative business plans and the exploitation of new knowledge produced by researchers or enterprises in Greece or abroad, with a view to producing new products, processes

and procedures of high added value and knowledge intensity, contributing thus to the development of the country in the mid-long term. Nine projects were selected for funding after evaluation, with a total, combined budget of EUR 5 million.

Several research groups from Greek universities and research institutes are active in fields related to sustainable consumption & production, such as renewable energy sources, and participate in R&D projects funded by the European Union and by the GSRT. For example, the *Group of Energy Conservation (GREC)* within the Institute for Environmental Research & Sustainable Development (IERSD) of the National Observatory of Athens (NOA), is active in energy conservation, solar applications in buildings, analysis and numerical modelling of thermal energy systems, building energy audits, thermal simulations, indoor environmental quality assessment, and energy efficient Heating, Ventilation and Air-Conditioning (HVAC) systems. Over the years, GREC has concluded over 36 European and national projects, collaborated with international and national organisations, the European Commission and industry. Given the expertise developed over the years in the field of energy conservation in buildings and energy audits, GREC participated in the preparation of the national "Regulation on the Energy Assessment of Buildings – KENAK" (MD D6/B/5825/2010) and prepared the official software for performing all building energy audits and issuing an energy performance certificate.

The Centre for Renewable Energy Sources and Saving (CRES) is the Greek national entity for the promotion of renewable energy sources, rational use of energy and energy conservation. Working in the state of the art of technology development, CRES implements innovative projects and significant activities for the promotion and market penetration of new energy technologies. The project GROUNDHIT "Ground Coupled Heat Pumps of High Technology", coordinated by the CRES, received the Energy Globe Award - one of the most prestigious international environmental awards as the best environmental project in Greece in 2008. The project Groundhit aims at improving the cost-effectiveness, competitiveness, and market penetration of ground coupled heat pumps, which are a reliable and environmentally friendly technology that utilises the soil temperature, and provides buildings with efficient heating, cooling and warm water.

The Public Power Corporation (PPC) is studying new combustion techniques for lignite, with the objective of enhancing its energy efficiency, leading to further reduction of greenhouse gas emissions and pollutants. It is also undertaking an upgrade of existing lignite-fired power plants with the technological upgrading of boilers, turbines, cooling systems, lignite grinders and other equipment. PPC keeps up with developments in CO₂ capture and storage (CCS) in Europe, participating in relevant research programs and projects and commissioning studies on assessing the possibility and cost of CSS from solid fuel in Western Macedonia and Evia.

The Aerosol and Particle Technology Laboratory (APTL) of the Chemical Process Engineering Research Institute (CPERI) / Centre for Research and Technology-Hellas (CERTH), is carrying out research in the field of energy conservation, environmental processes and renewable energy sources, amongst other areas. In 2006, the European Commission's Descartes Prize for Collaborative Scientific Research European was awarded to the HYDROSOL project on "Advanced Monolithic Reactors for Solar Hydrogen Production via Water Splitting", which was co-ordinated by APTL. The HYDROSOL research team has developed an innovative, solar reactor, for the production of hydrogen from water vapor, resembling the familiar monolithic catalytic converter of automobiles. Furthermore, in 2010 APTL received the European Research Council's Advanced Grant for its ARMOS proposal on "Advanced multifunctional reactors for green mobility and solar fuels".

Project funding and environmental parameters

Environmental objectives have been largely integrated into EU funded programmes, aside from the programmes specifically linked with the achievement of environmental goals. In the 2000-06 programming period, about 25% of EU support (excluding agriculture-related support) was allocated to environment-related investments at large (averaging 0.8% of GDP). Progress has been made in reducing some emission and resource intensities (e.g. NO_x and nitrogen fertilisers), showing a relative (although still limited) decoupling of environmental pressures from economic growth. The energy intensity of the economy has been considerably reduced, and steps have been taken to promote reliance on natural gas.

Recycling

The "National Organization for the Alternative Management of Packaging and Other Waste", provisioned in OJG 179 / A / 2001, as amended by OJG 94 / ? / 23.06.2010, became operational fairly recently, while its duties, until then, had been carried out by a Department within the former Ministry of Environment, Physical Planning and Public Works. A number of "systems of alternative management of waste" have been set up and certified by the Ministry of Environment, Energy and Climate Change, as competent organizations for handling different types of waste. These entities provide a safe route for disposing various streams of waste, coming from either industry or household consumption, co-operating with local authorities and the private sector. At the end of 2010 the certified systems of alternative waste management were:

- Three certified collective systems for the alternative management of packaging wastes: HERRCO (www.herrco.gr) and REWARDING RECYCLING S.A. (www.antapodotiki.gr) that cover a wide spectrum of packaging materials and KEPED (www.eltepe.gr) only for the packaging of lubricants.
- One individual system that covers the packaging waste of a country-wide chain of super-markets (www.ab.gr).
- One certified collective system for the alternative management of batteries, AFIS (www.afis.gr) and two certified collective systems for the alternative management of accumulators. These are SYDESYS S.A (www.sydesys.gr) and SEDIS-K, with the later operating in the Region of Crete.
- One certified collective system for the alternative management of used oils, ELTEPE SA (www.eltepe.gr).
- One certified collective system for the alternative management of used car tyres, ECO-ELASTICA (www.ecoelastica.gr).
- One certified collective system for the alternative management of ELVs, AMVH (www.edoe.gr).
- Two certified collective systems for the alternative management of WEEEs: RECYCLING OF APPLIANCES S.A (www.electrocycle.gr) responsible for all categories of WEEEs and FOTOKYKLOSI S.A. (www.fotokiklosi.gr) that is responsible for category 5, i.e. lighting equipment.

Ecolabel

The "Ecolabel" is an EU-wide voluntary scheme, established in 1992, to encourage businesses to market products and services that are more environmentally friendly. Products and services awarded the Ecolabel certification carry the flower logo, allowing consumers to identify them easily. The criteria are agreed at the European level, following wide consultation with experts, and the label itself is only awarded after verification that the product meets these high environmental and performance standards. At last count, active registrations in Greece amounted to 37 companies and 278 products. The Ecolabel in Greece has been awarded to products in the following categories: 1) paints and varnishes for interior and exterior spaces, 2) detergents, 3) mattresses, 4) textile products. The logo has also been awarded to 9 hotels (tourist accommodation services).

Environmental Management Schemes

The EMAS Regulation has been revised and modified for the second time, as Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS) entered into force on 11 January 2010. The scheme has been amended and modified to include measures for reducing administrative burdens for EMAS registered organisations and creating incentives for raising the attractiveness of the scheme, particularly for smaller organisations. In addition, the scope of the scheme has been extended to allow organisations outside of the European Community to gain EMAS registration with EMAS verifiers who are inside the European Community.

Greece participated actively in the revision process of the new Regulation and, in June 2010, the Hellenic EMAS Committee (the EMAS Competent Body in Greece) was re-established via MD 21355/1130/25-5-2010 (OJG 200 / YODD / 07.06.2010) as amended by MD 42347 / 2086/1.10.2010 (OJG 323 / YODD / 06.10.2010). The new EMAS Committee is currently in the process of adapting its rules and procedures according to the new EMAS Regulation (EMAS III), with close cooperation with the National Accreditation Council (ESYD S.A.) for issues regarding priority actions, timetables, and seminars for the implementation of EMAS III. For this purpose, information on the new EMAS Regulation and guidelines for the transition to EMAS III have been disseminated during this year to EMAS interested parties, and made available on the website. Also, the website of YPEKA for EMAS has recently been radically re-designed and all EMAS information is being continuously updated.

In November 2010, the administrative structure for EMAS in the Ministry of Environment, Energy and Climate Change was reinforced, through the establishment of a autonomous unit under the General Directorate of Programmes and Works, dealing exclusively with Green Public Procurement, EMAS and Ecolabel issues, titled "Office of Green Public Procurement and Environmental Standards" (MD 45414 / 21-10-10, OJG 1732 / B / 04-11-10). Among its mandates, the new Office will provide the necessary administrative support to the recently re-composed Hellenic EMAS Committee and will ensure that EMAS will be taken into account in public procurement and purchasing procedures.

Currently, the Hellenic EMAS Register has 63 active registered organizations with 844 sites. To further promote the scheme, the following two programmes related to EMAS were launched in June 2010, co-funded by Greece and the European Regional Development Fund, within the framework of the Operational Programme "Competitiveness and Entrepreneurship" (OPCE II) for the period 2007-2013:

- "Green Infrastructures 2010", with a budget of EUR 30 million, aiming to create the conditions for the environmental protection sector to constitute a field of deploying business activity. Eligible for financing are micro-, small- and medium-sized enterprises of the manufacturing sector.
- "Green Enterprise 2010" with a budget of EUR 30 million, and the objective to create the conditions for integrating the environmental dimension into the operation of enterprises, in order to intervene with the procedure of production chain. Eligible for financing are micro- and small-sized enterprises of the manufacturing sector.

Finally, within the OPCE II, a third programme entitled "Green Tourism" is expected to be launched in the next few months (programme prepublished in June 2010).

As regards recent events related to Environmental Management, the 2nd PAN-European Forum was held in June 2010, in the city of Patra, in the framework of the project ECOPORT 8 – "Environmental Management of Transborder Corridor Ports" (EU co-funded programme). ECOPORT 8 aims to improve the quality of ports and carry out studies, tests and provide services, attempting to define the basis for environmental port certification. Key innovative features of this programme are that it supplies port authorities within the ports of the South-East Europe area with the relevant tools for environmental management and it focuses towards an environmental certification for PAN-EU corridors and port networks, through the drawing up of shared and common guidelines according to EN ISO 14000 standards and EMAS.

Several companies in Greece have also received ISO 14000 certification and their number is estimated to be larger than those with an EMAS certification, although no exact number is available due to the nature of the ISO 14000 standard.

Integrated Product Policy

With regard to Integrated Product Policy (IPP), specific collaborative projects between the private sector and Universities have been developed, in sectors such as the ecological design and alternative management of telecommunication devices, adoption and implementation of sustainable construction principles from construction companies. With regard to multinationals' social and environmental performance, a Department has been established within the former Ministry of Economy and Finance, with the remit to implement the Organization for Economic Cooperation & Development (OECD) Guidelines on the environmental and social responsibility of multinational companies.

The Green Fund

A Green Fund was recently established by the Ministry of Environment, Energy and Climate Change, via Law 3889/2010. Its purpose is to provide an integrated funding mechanism for environmental projects aiming to advance development via environmental protection and the effective and transparent management of resources in order to restore the natural environment and to combat climate change. The Fund will draw resources from environment-related fines, participation in EU projects, special taxes, sponsorships, grants and the state budget.

Mass Transport

Increasing the options for movement via *mass transport means* is a prime way of advancing sustainable lifestyle choices. The gradual development of the *Athens Metro system* in time for the 2004 Athens Olympics, and after them, has been a catalyst for advancing such options in the

metropolitan Athens area, not only in terms of rail transit systems but also other transit options (buses, trolley-buses) connected with the Metro system. The development of a Metro system in the city of Thessaloniki, already under way, will be another major development, as well as the operation of tram / suburban rail lines in other towns. The details of the program concerning the *modernization and greening of public transport in the Athens metropolitan area* are given below:

Procurement of new buses: In 2009, the company operating the bus fleet in metropolitan Athens received the final installment of 320 new buses, with Euro V and Euro VI Diesel engines, which replaced older buses (14 years of age on average and with Euro I engines). New buses emit significantly less air pollutants thanks to the engine's advanced technology as well as the new SCR type (Selective Catalytic Reduction) catalytic converters. This allows for a drastic reduction in NOx and particulate matter which are the main pollutants associated with diesel engines. Thus, the use of the above technologies leads to almost completely suppressing the emissions of pollutants contributing to Athens' photochemical smog. The procurement of clean technology buses is partly subsidized through the 3rd Community Support Framework (Operational Programme 'Railways, Airports, Urban Transport') and the National Strategic Reference Framework (Operational Programme 'Accessibility Improvement'). The company also runs a fleet of 414 natural gas powered buses – among the largest ones in Europe – while another 200 natural-gas buses, meeting EEV standards, were to be received by the end of 2010. Overall, the company owns a fleet of 2147 buses, with an approximate average age of 9 years. There are two natural gas filling stations operating at Ano Liosia and Anthoussa, in cooperation with the Public Gas Corporation S.A. (DEPA). Furthermore, *bus-lanes* are being constructed and implemented in the metro Athens area in order to promote the use of means of mass transport. The current total length of bus lanes exceeds 50 kilometres. The scheduling of new routes and the pricing policy implemented in the last few years (monthly cards, integrated ticket for 90-minute travel via all transit means, 24-hour integrated travel ticket) tend to support the coordinated use of various mass transport means.

The company operating Line 1 of the Athens Metro has installed a system for energy recovery in the brake system of its trains, which reaches a recovery level up to 30% of the energy needed to pull trains. This system has had the added benefit of reducing the emission of dust / particulates emitted when trains brake while the wear of brake pads has been greatly reduced.

Several installations of *photovoltaic panels* have been installed on rooftops belonging to metropolitan Athens mass transport companies, in cooperation with Public Power Corporation – Renewables S.A. and the Hellenic Transmission System Operator S.A. (HTSO). One of these installations is located atop the Irini metro station. The panels used are of polycrystalline silicon with a total power of 20kW. Another 20kW system was installed by renting out an area of 350 square meters on the roof of the main building of the depot at P. Ralli St. and another one at a secondary depot. The electricity produced by the installation is discharged to HTSO and the company receives 5% of HTSO's revenues as a rent. There are plans for additional installations of photovoltaic systems in other depots in the near future.

Furthermore, *green roof systems* have been installed in two large transit facilities. The main, direct benefits from these systems are the improvement of the roof's thermal insulation (significantly cutting air-cooling costs during the summer) and the creation of aesthetically pleasing and environmentally helpful small gardens upon rooftops. Metro Line 1 has been completely revamped in recent years (works are still in progress), and, among other improvements, sound barriers have been set up at some points where the tracks are above the ground.

Encouraging bicycle use

In an effort to include bicycles in the country's transport system and promote their use as an alternative means of transportation, the Ministry of Infrastructure, Transport, and Networks is implementing a program to direct EUR 15 million from the relevant Operational Programme of the 3rd Community Support Framework for the "Creation of bike-paths and associated bike service infrastructure". The country's municipalities were invited to submit tenders for the creation of such projects in their jurisdiction. Seventeen (17) such projects were approved, with seven in the Athens metropolitan area and the rest in various towns throughout Greece.

Agriculture and food

Water use efficiency in agriculture (in terms of water diverted from the environment that is taken up by crops) is estimated at 60%. Increasing the efficiency of irrigation water use remains a challenge. Relevant national policy focuses on formulating and implementing an integrated national scheme, encompassing agronomic, water and environmental policy objectives, which promotes the rational use of water, aims to improve irrigation efficiency and practices in both communal and private irrigation networks and ensures that all water abstractions are properly licensed. This scheme focuses at gradually replacing groundwater takes by surface waters. A number of projects in recent years have aimed to promote environmentally friendly farming practices and organic farming. Such projects are currently incorporated in the Sectoral Development Programme "Rural Development in Greece, 2007-2013" and are supported by the European Agricultural Fund for Rural Development. Measure 2.1.1 "Agri-Environment Payments" aims at the promotion of environmentally friendly practices including organic farming and organic livestock farming. The specific objectives of this measure are the protection of natural resources and biodiversity preservation, the production of safe and guaranteed agricultural products and the promotion of sustainable rural development. It will end with the certification of participating farmers for the implementation of organic farming practices and methods. Measure 1.3.3 aims at the "promotion of quality products" while measure 1.3.2 deals with the "participation of farmers in quality food systems". These two measures have a total budget of EUR 43 million. Similar initiatives are to be launched for the promotion of quality aquaculture food products. Furthermore, the Ministry of Rural Development & Food recently announced plans for the creation of a label for Greek, Mediterranean diet products. *A national committee for Greek – Mediterranean diet, involving experts from several ministries, was recently established at the initiative of the Prime Minister.*

! **Education, Information and Awareness-Raising**

The EMAS Regulation has had very positive results so far in raising the awareness of the voluntarily participating organisations on integrated environmental management and particularly on the sound management of waste. Participating organisations from both industry and services sectors (private and public) are obliged to submit to YPEKA an annual Environmental Statement presenting their environmental management system, containing detailed information on the volumes and composition of waste and wastewater generated, their waste management processes, their cooperation with certified bodies for the alternative management of packaging material and other products etc, also setting indicative targets for constant annual improvement. These environmental statements are posted on the YPEKA's website (www.ypeka.gr/Default.aspx?tabid=520&language=el-GR).

Putting special emphasis on awareness-raising both within the public sector and the private sector on issues concerning GPP, a nation-wide conference was organised in June regarding GPP, with over 200 participants. Furthermore, awareness-raising material was distributed widely, including during the International Exhibition in Thessaloniki in September 2010.

Information and access to information is a central element for an effective sustainable development policy. The National Network of Environmental Information (e-PER) was recently upgraded, taking into account the latest changes in EU legislation, such as the provisions in the "INSPIRE" directive. The new system is based on web technologies to facilitate the access of users and to allow for all interested organizations to become part of the Network. An Aarhus convention Clearinghouse Mechanism was also developed together with a site for the communication and data sharing of the European Environment Information and Observation Network (EIONET) members in Greece. The system supports the Ministry's procedures in environmental subjects and takes advantage of the Ministry's telecommunication infrastructure. It includes tools for providing data to international organizations and conventions and serves as the national data tank for environmental information.

! **Cooperation**

Greece is actively engaged in the work of the United Nations Environment Programme's "Mediterranean Action Plan" (UNEP/MAP), whose headquarters are based in Athens, and which has a special programme on Sustainable Consumption and Production, tended by the "Cleaner Production Regional Activity Center" (CP-RAC) based in Barcelona, Spain. Furthermore, the Mediterranean Strategy for Sustainable Development, under UNEP/MAP, adopted in 2005, has four main objectives, one of which is "changing unsustainable production and consumption patterns" and "ensuring the sustainable management of natural resources".

As a member of the Black Sea Economic Cooperation Organization (BSEC), Greece is actively engaged in efforts made by BSEC member states in order to promote cooperation and exchange of best

practices for the protection of the Black Sea marine and coastal environment. To this end, BSEC Member States have elaborated a general cooperation framework, the BSEC Action Plan for Cooperation in the Field of Environmental Protection. In addition to the aforementioned initiatives undertaken by BSEC, Greece will be financing RES and energy efficiency projects and projects in the field of environmental protection through the BSEC Hellenic Development Fund (BSEC-HDF). The BSEC-HDF is a special fund, established in April 2008, as a voluntary contribution from the Hellenic Republic. The BSEC-HDF will be endowed with an initial amount of EUR 2 million for a period of four years, as of 2008. The Fund aims at supporting BSEC efforts to strengthen regional cooperation among its member states and enhance its project-oriented approach, targeting the following specific key areas: transport, RES, environmental protection, business cooperation and trade facilitation, tourism and culture. Grant financing provided by the BSEC-HDF will be considered as BSEC grants.

“Hellenic Aid”, under the Ministry of Foreign Affairs, is the competent national authority, which shapes and coordinates Greek development policy. It finances projects on a bilateral basis, in a number of developing countries, aiming to facilitate the access to or transfer of environmentally sound technologies and to promote RES in developing countries as well as in economies in transition.

Finally, a joint proposal launched in 2010 by Greece, Italy, Morocco and Spain for the designation of the *Mediterranean Diet* by UNESCO, as an Intangible Cultural Heritage was accepted and the Mediterranean diet is now included in UNESCO’s “*world intangible heritage*” list.