

SUSTAINABLE CONSUMPTION AND PRODUCTION

INTRODUCTION

The production and consumption which is becoming increasingly unsustainable with the accelerated globalization and raised living standards are leading to consequences such as climate change, degradation of natural resources, extinction risk of species and environmental damages stemming from emissions/wastes.

One of the most important elements of sustainable development approach which balances economic, social and environmental factors and which is among the key development priorities of our country is sustainable consumption and production (SCP). The SCP approach aims at adopting policies and measures such as using and promoting clean technologies, increasing environmental awareness in production and consumption and increasing efficiency in the use of resources, and ensuring a balanced economic and social development as well as mitigating environmental damages by changing the patterns of production and consumption of goods and services.

This report discusses the current state regarding SCP in Turkey, national policy priorities and legal arrangements, measures taken and progress in implementation.

SUSTAINABLE CONSUMPTION AND PRODUCTION IN NATIONAL POLICIES, PLANS AND STRATEGIES

Principles relating to SCP are addressed in many policy documents at different levels and forms.

SCP in the Ninth Development Plan (2007-2013)

Development Plans, which are normative for the public sector and guiding for the private sector have a strategic structure that lays down a macro framework, increases predictability, emphasizes the institutional and structural arrangements that will enable more efficient functioning of the system and focuses more on basic objectives and priorities. The multi-sectoral and integral structure of Ninth Development Plan, which has been prepared through a wide participation of public agencies and organizations as well as various sectors of the society including the NGOs, constitutes the main basis for the planning and programming work on many topics in the country.

The Plan is a key policy document that lays down the transformations Turkey will undertake in economic, social and cultural areas with an integrated approach. In this respect, the Development Plan has a guiding function in the policy development and implementation process. In this context, the key objectives included in the development plan regarding SCP are outlined below:

- i. The conditions for protection and utilization of natural resources will be determined by taking the needs of future generations into consideration. Environment management systems will be established in order to ensure equitable utilization of natural resources by everyone.
- ii. Fulfillment of international obligations will be realized in the framework of the principle of sustainable development and the principle of common but differentiated responsibility.
- iii. In the sectors sensitive to environment, especially agriculture and tourism, ecological potential will be utilized and protection-utilization balance will be considered.
- iv. More efficient production and less waste will be achieved by increasing the effectiveness in raw material use with the implementation of environment friendly techniques in industry.
- v. Efficient use of water resources of the country will be ensured by reducing losses and illegal uses in existing water supply facilities.
- vi. The works, which were started to make regulations and establish an administrative structure in Turkey related to the allocation, use and improvement of water resources as well as protection against pollution will be completed.

- vii. Protection of ground and surface water resources from pollution will be ensured and use of treated wastewater in agriculture and industry will be encouraged.
- viii. The technical and financial assessment of separation at the source, collection, transportation, recycling and disposal stages will be done as a whole in domestic solid waste management. Landfills, which are solid waste disposal technology that have low investment and operation costs and is most suitable for the conditions of the country, will be preferred.
- ix. Production of non-domestic wastes will be reduced and collection, transportation, recycling and disposal systems that are suitable for the type of the waste and conditions of the country will be established.
- x. Achieving food security and safety and sustainable use of natural resources will be taken into account in creating an agricultural structure that is highly organized and competitive.
- xi. The main principles to be adhered in fisheries policies include determination of fisheries policies on the basis of establishing resource utilization balance in fishery production by conducting stock assessment studies in line with the EU acquis, ensuring environmental sustainability in agriculture activities in parallel with the increasing demand and the recently provided supports, and establishing the required administrative structure in compliance with these goals.
- xii. Sustainability of growth will be ensured by considering the consistency of the industrial and environmental policies. In industry, production will be in compliance with human health and environmental rules and importance will be given to social responsibility standards.
- xiii. Poverty and inequality in income distribution will be reduced permanently through sustainable growth and policies regarding employment, education, health and working life. Individuals and groups, who are under the risk of poverty and social exclusion, will be included in the economic and social life and their life quality will be improved.
- xiv. It will be ensured that the operation and management of irrigation infrastructure is realized with participatory mechanisms, programs targeting producers will be implemented for efficient and sustainable utilization of soil and water resources.

National Program of Turkey for the Adoption of the EU Acquis (2008)

The most important project that will help Turkey attain the level of modern civilization is full membership to the European Union (EU). Turkey's aspiration of integration with the EU is a social transformation project. It is a reform movement that requires radical changes in all parts of life from production to consumption, health to education, agriculture to industry, energy to environment and justice to security and will elevate the country to universal standards and practices.

The accession process that has been started within the framework of integration with the EU involves efforts to harmonize Turkey's national legislation with the EU acquis in 33 chapters.

National Program of Turkey for the Adoption of EU Acquis (National Program) covers the steps planned to be taken in the process of Turkey's accession to the EU in the short and medium terms. The National Program has been prepared to establish the key principles and elements of works to be carried out in this field.

The National Program includes a timetable for harmonization with the legislation outlined below with regard to SCP:

- ***By-Law on Control of The Waste Electric and Electronic Equipment***
Ensuring recycling, recovery and disposal of the waste electric and electronic equipment.
- ***By-Law Amending the By-Law on Control of Used Batteries and Accumulators***
Establishing the principles, policies and programs; to ensure the production of batteries and accumulators having properties which do not harm the environment and human health, to prevent the discharge of these products directly or indirectly to any receiving media, to establish collection systems for the disposal or recovery of waste batteries and accumulators and to prepare the respective management plans. Introducing provisions on the marking and labeling of batteries and accumulators, restriction and prohibition on their production and export, separate collection, transport, recycling and disposal of waste batteries and accumulators from household wastes.
- ***By-Law on the Control of Pollution from the Volatile Organic Compounds***

Determination of principles and procedures for the control of pollution from the Volatile Organic Compounds.

- ***Legislations regarding Voluntary Participation of Organizations in Community Eco-Management and Audit Scheme (EMAS)***

Establishment and implementation of Environmental Management Systems by organizations.

Evaluation and improvement of the environmental performances of the organizations.

- ***By-Law on the Classification, Packaging and Labeling of Dangerous Substances and Preparations***

The scope of this By-law is to regulate the detailed rules and principles for classification, labeling and packaging of dangerous substances and preparations placed on the market for effective control and efficient surveillance in order to protect the man and the environment against their negative effects.

- ***Legislation on Import and Export of Dangerous Chemicals***

Development of detailed rules and principles on import and export of dangerous chemicals.

- ***By-Law on Biocidal Products***

Before placing on the market, assessment of risks of biocidal products on human, animal and environment, determination of implementation procedures and principles on production of biocidal products, custom manufacturing, import, classification, placing on the market, private usage methods and inspection of biocidal products, determination of procedures relating to authorized products.

- ***Legislation on Persistent Organic Pollutants***

Raising public awareness on persistent organic pollutants and elimination and disposal of persistent organic pollutants and contaminated equipments.

- ***By-Law on Integrated Pollution Prevention and Control (Integrated Environmental Permit)***

Control of the pollution from major industrial plants with an integrated approach at the source.

- ***By-Law on Eco-label***

To promote environmentally friendly products to contribute to the efficient use of resources, and by giving guidance to provide accurate, non-deceptive and scientific information to consumers on such products.

- ***Framework Water Law***

Fulfillment of legislative gaps and correction of complications occurred during implementation.

- ***By-Law Amending the Implementing Regulation on the Protection of Waters Against Pollution Caused by Nitrates from Agricultural Sources***

Determination and reduction of the pollution in surface and ground waters caused by Nitrates from Agricultural Sources and preventing probable future pollution risk.

- ***Law on Nature and Biodiversity Protection***

Conservation of natural values, biodiversity and genetic resources of Turkey and ensuring their sustainable use on a plan basis considering the balance between the conservation and use ; contributing to sustainable development of Turkey for present and future generations; providing a system of protected areas network, with designation criteria and management responsibilities for the protection of Turkey's biological diversity; ensuring continuity of ecosystems, species and their habitats and biological functionality; ensuring protection of the characteristics and beauty of nature and biodiversity and recreational resources; ensuring protection of non-living natural assets and assets along with cultural values and landscape of the Country.

- ***Bio-safety Law***

Establishing, developing, implementing and managing the bio-safety system as an entire system to address bio-safety issues to ensure the advance determination, inhibition and/or minimizing, and controlling unforeseen possible adverse effects of GMOs and products thereof that are developed by using modern biotechnology, consistent with the Cartagena Protocol on Bio-safety and EU legislation.

- ***By-Law on Strategic Environmental Assessment (SEA)***

In order to provide protection and sustainable use of environment, sustainable development principles have to be integrated at the preparation phase of plans and programs which may have possible important effects on environment.

- ***Law on Environmental Liability***

According to polluter pays principle, the facilities whose activities cause environmental damage, to be liable for preventing and remedying this damage financially, related with this subject, bringing together various articles already existing in our legislation and setting new articles.

- ***Legislation on the Eco-design Requirements for Energy-Using Products***

Integration of certain criteria which contribute to the protection of the environment at the design stage of products within the scope of the related EU Directive.

- ***Law on the Extension of Use of Bio-fuels***

Aims at promotion of the use of bio-fuels produced from domestic agricultural products within the perspective of full membership to the EU.

SUSTAINABLE PRODUCTION AND CONSUMPTION IN SECTORAL STRATEGIES

National Environment Strategy and Action Plan

The vision of National Environment Strategy is defined as “With the development of National Environment Strategy, Turkey will become a country where the basic needs of today’s and future’s generations will be met, the quality of life is raised, bio-diversity is preserved, natural resources are managed rationally through sustainable development approach, and the right to live in a healthy and balanced environment is observed.”

The principles of National Environment Strategy include; a) taking into consideration environmental protection concerns in sectoral policies like industry, agriculture, energy, transportation and energy, b) performing activities in a manner that causes minimum change in the environment, creates minimum risk for human health and environment, pollutes the air to the minimum extent and recycles the used products, c) using natural resources in a sustainable manner.

The strategy’s most important sub-objectives include; achieving an environmental management that ensures equitable and healthy access to natural resources by observing the needs of future generations and establishing the projection/usage conditions of natural resources; ensuring the integration of environmental policies with economic and social policies; utilizing the economic instruments for environmental protection; providing necessary incentives and improving financing facilities; carrying out infrastructure and other investments; and observing environmental protection in all processes from production through consumption.

Turkish Industrial Policy (Towards EU Membership) (2003)

The basic goals of the Turkish Industrial Policy document prepared in 2003 include creating an industrial structure that mobilizes local resources to the extent possible; produces in compliance with environmental norms; observes consumer health and preferences; uses highly qualified labor force; applies the strategic management approach; attaches importance to R&D; produces technology; creates original design and brands and takes its place in international markets.

In the document’s section regarding sustainable development, it is stated that the fundamental objective is to ensure economic and social development by protecting human health, ecological balance, cultural, historical and aesthetic values, and emphasis is put on the goal of prioritizing environment friendly technologies in the formulation of industrial policies and new industrial investments as well as of informing and incentivizing local manufacturers regarding such technologies.

SME Strategy and Action Plan (2007-2009)

The SME Strategy and Action Plan states that the public opinion has become more sensitive regarding the prevention of environmental pollution and protection of natural resources all around the world, leading to the preference of enterprises producing and products produced without harming the environment, and in this direction, SMEs have to integrate an operational culture based on

environment friendly production in order to preserve their competitiveness. Furthermore, the strategy suggests that the ability of enterprises to fulfill their environmental obligations requires the adoption of policies for environmental protection, production activities compliant with environmental standards and legislation and minimization of environmental impacts by using environmental friendly technologies.

LEGAL FRAMEWORK

The list of legislation that includes important provisions regarding SCP in Turkey is presented below:

- Environment Law
- By-Law on Water Pollution Control
- By-Law on the Control of Pollution Caused by Hazardous Substances in Water and Environment
- By-Law on General Principles of Waste Management
- By-Law on Control of Solid Wastes
- By-Law on Control of Hazardous Wastes
- By-Law on Control of Waste Oils
- By-Law on Control of Waste Vegetable Oils
- By-Law on Control of Used Batteries and Accumulators
- By-Law on Control of Package and Packaging Wastes
- By-Law on Hazardous Chemicals
- By-Law on the Restrictions relating to the Production, Supply to the Market and Use of certain Hazardous Materials, Preparations and Goods
- By-Law on the Inventory and Control of Chemicals
- By-Law on Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Devices
- By-Law on the Phase-Out of Ozone Depleting Substances
- By-Law on the Reduction of Sulfur Rate in Certain Fuel Types
- By-Law on Environmental Inspection
- Energy Efficiency Law No. 5627
- By-Law on Increasing Efficiency in the Use of Energy Resources and Energy,
- Law on the Use of Renewable Energy Resources for Electricity Generation Purposes,
- By-Law on the Energy Labeling of Home Appliances,
- By-Law on Energy Performance in Buildings
- By-Law on Heat Isolation in Buildings
- By-Law on the Implementation Principles for the Introductory and User Manuals of Home Type Electrical Refrigerators, Freezers and Their Combinations
- Communiqué regarding the Energy Labeling of Home Type Electrical Refrigerators, Freezers and Their Combinations (94/2/AT)
- By-Law on the Energy Labeling of Home Type Air Conditioners (2002/31/AT)
- Communiqué regarding the Energy Labeling of Home Type Dish Machines (97/17/AT)
- Communiqué regarding the Energy Labeling of Home Type Washing Machines (95/12/AT)
- Communiqué regarding the Energy Labeling of Home Type Laundry Drying Machines (95/13/AT)
- Communiqué regarding the Energy Labeling of Home Type Washing Machines with Drying Function (96/60/AT)
- Communiqué regarding the Energy Labeling of Home Type Electrical Ovens (2002/40/AT)
- Communiqué regarding the Energy Labeling of Home Type Bubs (98/11/AT)
- Communiqué regarding the Ambient Noise Caused by Home Appliances (86/594/AT)
- By-Law on the Energy Efficiency of Fluorescent Lighting Ballasts
- By-Law on the Information of Consumers regarding the Fuel Economy and CO2 Emissions of New Passenger Cars
- By-Law on the Control of Tires that have Completed their Lifetime
- By-Law on the Principles and Procedures for Increasing Energy Efficiency in Transportation

INSTRUMENTS FOR PROMOTING SUSTAINABLE CONSUMPTION AND PRODUCTION

Sustainable Procurement Policies

As part of the EU membership process, work continues for harmonizing the public procurement procedures with the EU Acquis. In this framework, it will be ensured that environmental concerns will be taken into consideration in procurement procedures in tune with the EU Acquis.

Article 6 of Public Procurement Law No. 4734 provides that pursuant to the applicable legislation, Environmental Impact Assessment (EIA)-Positive certificate must be obtained in order to start a public procurement procedure for works requiring EIA, except for the civil works contracts which must be awarded urgently due to natural disasters.

Incentives Provided by the Ministry of Environment and Forestry (MoEF)

Within the framework of the By-Law on the Follow-Up and Collection of Environmental Revenues and the Use of Collected Funds, the MoEF provides loans or financial assistance for the supervision, feasibility, consultancy, design and civil works of wastewater treatment, waste disposal and waste recovery facilities upon request.

Incentives Provided by the Small and Medium Industry Development and Support Administration (KOSGEB)

A subsidy program has been prepared to provide KOSGEB's support for the training, study and consultancy services to be received by SMEs regarding energy efficiency. Pursuant to the Energy Efficiency Law No. 5627 and within the framework of the By-law on KOSGEB Subsidies; a subsidy of maximum 2,000 TL is provided for preliminary energy study service fees, maximum 20,000 TL for detailed energy study service fees, and maximum 10,000 TL for the consultancy services received for Efficiency Increasing Project (EIP) preparation, realization and/or operation for the first two years to SMEs.

Incentives Provided by Turkish Scientific and Technical Research Institute (TÜBİTAK)

The Environment, Atmosphere, Ground and Sea Sciences Research Group (ÇAYDAG) and the Basic Sciences Research Group (TBAG) under TÜBİTAK provide support on sustainable production within the framework of various support programs. These programs include; the Program for Supporting Scientific and Technologic Research Projects, Fast Support Program, Program for Supporting the Research and Development Projects of Public Agencies, Patent Application Incentive and Subsidy Program, Universal Researcher Program, Program for Participation in International Scientific Research Projects, Program for Supporting the Initiatives for Establishing Scientific and Technologic Cooperation Networks and Platforms and the National Young Researcher Career Development Program.

Furthermore, TÜBİTAK's Technology and Innovation Support Programs Department (TEYDEB) is executing support programs for increasing the research-technology development skills and innovation culture as well as competitive power. The rate of support can be increased by 20 percent in case of projects themed environment friendly technologies.

Incentives Provided by Technology Development Foundation of Turkey (TTGV)

TTGV provides repaid financing support for the R&D activities at technology development level, by which products with commercial value are developed. The support covers R&D projects in the fields of environment friendly products, sustainable production technologies, renewable energy, etc.

The Environmental Supports financed by TTGV provide repayable funding support to the “implementation projects” of industrialists in the fields of environmental technologies, energy efficiency and renewable energy.

In addition, TTGV provides support for both the technologic innovation projects in our country and the initiatives for the protection of ecology.

Incentives Provided by the Undersecretariat for Foreign Trade

Within the framework of the Program for Supporting Environmental Costs being executed by the Undersecretariat for Foreign Trade, the costs of companies for ISO 9000 series quality assurance system certificates, ISO 14000 environmental management system certificates, CE mark and other international quality and environmental certificates are covered by the Undersecretariat for Foreign Trade.

Incentives for Sustainable Production and Consumption under Legal Arrangements

Energy Efficiency Law No. 5627

The energy efficiency projects with a budget of maximum 500,000 TL and recovery period of maximum 5 years are subsidized at the rate of 20 percent, with maximum subsidy level of 100,000 TL per project.

Industrial facilities can sign “voluntary agreement” with Electricity Affairs Survey Administration (EIE) by committing to reduce their energy intensities by minimum 10 percent within a period of 3 years. For the entities which fulfill their commitment, 20 percent (maximum 100,000 TL) of their energy expenditures in the year when the agreement is signed is subsidized.

The energy efficiency projects to be implemented at industrial facilities (with investment size above the amount determined by the Council of Ministers) and cogeneration investments (depending on fuel and technology) are entitled to benefit from the incentives provided by the Undersecretariat of Treasury.

Law No.5346 on Utilization of Renewable Energy Resources for the Purpose of Generating Electrical Energy

The Law guarantees that the electricity generated from renewable energy resources will be purchased by the electricity distribution companies at the price of 5-5,5 Euro Cent/kWh for a period of 10 years and the generation companies are given the right to sell their electricity above the threshold of 5,5 Euro Cent/kWh in the free market. Through Council of Ministers decree, incentives are also provided for energy generation facility investments, procurement of domestically manufactured electromechanical systems, R&D and manufacturing investments to be made within the framework of electricity generation systems using solar cells and focusing units, and R&D and facility investments for electricity or fuel production using biomass resources.

In case of utilization of all sorts of property which is under the possession of Directorate General for Forestry or Treasury or under the rule and disposition of the State for the purpose of generating electrical energy from the renewable energy resources; the Ministry of Environment and Forestry or the Ministry of Finance grant a permit, lease, establish easement right or usage permission in exchange for their fee for the lands to be used for the facility, access roads and energy transmission lines up to network connection point.

An 85 percent discount shall be applied for permission, lease, easement right and usage permission in the first 10 year of investment and operation periods of facilities, access roads and

energy transmission lines up to network connection point, which will be commissioned by the end of 2012.

PRACTICES REGARDING SUSTAINABLE CONSUMPTION AND PRODUCTION IN AREAS OF NATIONAL PRIORITY

Energy Efficiency

Energy Efficiency Law No. 5627 was published on 02 May 2007 for the purpose of increasing efficiency in the use of energy and energy resources in order to efficiently use energy, prevent extravagance, alleviate the burden of energy costs on the economy and protect the environment.

The Law covers the principles and procedures applicable to increasing and supporting energy efficiency, developing a public awareness about energy and to the use of renewable energy resources in the energy generation, transmission, distribution and consumption stages, at industrial facilities, buildings, electricity generation facilities, transmission and distribution grids, and in transportation.

Measures intended to ensure efficient and effective use of energy at public agencies and institutions have been established through the Prime Ministry Circular No. 2008/2. The Circular has started a National Energy Efficiency Movement, declared the year 2008 as Energy Efficiency Year and served a Joint Movement Declaration to signature.

Prime Ministry Circular No. 2008/19 required all public agencies and institutions, municipalities and professional chambers having the status of public legal entity to replace the incandescent light bulbs at the places under the responsibility with energy saving bulbs in a period of one month. Among the measures that may be implemented for rapidly and effectively increasing energy efficiency, priority is given to the replacement of incandescent light bulbs with the energy saving compact fluorescent lamps which are approximately 5 times more energy saving.

Under the “Hand-in-Hand ENVER (Energy Efficiency) Movement”, a step of National Energy Efficiency Movement, energy saving lamps have been distributed and awareness raising activities have been performed at primary schools; 2,800,000 lamps were distributed in 23 provinces between December 2008 and January 2009. Distribution of 2,000,000 million more lamps started in April 2009.

As part of the efforts relating to Energy Efficiency, the Ministry of Energy and Natural Resources and the Ministry of Industry and Trade, Ministry of Justice and Ministry of Education have signed cooperation protocols involving joint action plans for the purpose of ensuring efficient and effective use of energy resources and energy, preventing extravagance, alleviating the burden of energy costs on the economy and protecting the environment. Within the framework of the cooperation plan and the action plan executed with the Ministry of Industry and Trade, efforts have been started for supporting SMEs regarding Energy Efficiency in the industry.

Works Relating to Energy Efficiency in Buildings

The By-law on Energy Efficiency in Buildings, published by the Ministry of Public Works and Settlement, provides that permits shall not be issued for the new buildings which do not satisfy the standards and minimum performance criteria regarding architecture, heat isolation, heating and cooling systems and electrification and that the practice of Energy Identity Certificate shall be introduced for buildings. Furthermore, some banks have started to provide loans with attractive conditions to expand the application of heat isolation in existing buildings.

The TS 825 standard, establishing the rules of heat isolation in buildings, has been revised and made compulsory as from 14 June 2000. Thus, it is possible to reduce the annual heat losses from building envelopes in the newly constructed buildings by one half. In line with the revised TS 825 Standard, the Regulation on Heat Isolation in Buildings has been amended and put into force in June 2000.

Transportation Sector

The By-law on Principles and Procedures Regarding Energy Efficiency in Transportation was published on 9 June 2008. Practices intended for reducing the unit fuel consumption of domestically produced transport vehicles, increasing efficiency standards in vehicles, expanding the use of public transportation vehicles and establishment of advanced traffic signalization systems have been launched under the regulation issued by the Ministry of Transport.

Under the leadership of Ministry of Transport Directorate General of Civil Aviation (SHGM), a new project named “Green Airport” has been started. In case airport operators and service providers satisfy certain requirements, that airport will be qualified as Green Airport and the Directorate General of Civil Aviation will offer discounts in its Service Tariffs for the institutions and entities satisfying these requirements.

In order to ensure that navigation assistants can be operated with cleaner, more reasonable cost and environment friendly systems, steps are being taken to benefit from renewable energy resources to the extent possible. The signalization systems running on old systems (with acetylene-butane gas, etc.) are converted into systems running on solar energy, and wind generators were started to be used for the first time in history in 2003. While the rate of using renewable energy resources was 25% in 1997, it has reached 65% today.

Railway transportation is an environment friendly mode of transportation in that it uses less energy relative to overland and airway transportation and that electrical energy can be used in railway vehicles. Therefore, every improvement and investment made in railways supports SCP.

In order to increase passenger and cargo transportation by railways, efforts are underway for railroad rehabilitation works and signalization and telecommunication systems that will increase line capacities and modernize lines; installation of electrification facilities that will increase line capacities and reduce the expenditures of diesel fuel which hold an important share in fuel costs; construction of high-speed railways and rehabilitation of commuter trains that will increase the capacity of passenger transportation; improvement of combined transportation and establishment of logistic villages that will boost cargo transportation; construction of railway connection roads to centers with high cargo potential, primarily including organized industrial zones; construction of double-line railways on the bottlenecked line sections; manufacturing off new cargo and passenger wagons to respond to the increased capacity and demand; and procurement of more efficient new locomotives.

Directorate General of State Railways Administration supports SCP for energy efficiency through the practices of Block Train by which locomotives and wagons are not changed from the station of loading till the station of unloading; the Boden Lubrication System which reduces corrosion and saves fuel by decreasing the friction between the wheels and rail; improvement of the fuel regulator systems of certain locomotives; enhancement of maintenance quality and replacement of battery groups with more efficient ones in order to reduce the idle running of locomotives; training of operators about efficient operation techniques; the use of APU (Auxiliary Power Unit), which has a smaller engine, to supply the energy need of locomotives during idle running; and production and use of locomotives with generators instead of generator wagons used for heating purposes.

Furthermore, the practice of power supply from solar panels and wind turbines has been introduced in regions where climatic conditions are suitable.

Industry

Under the UNIDO Eco-Efficiency Program which is being executed within the framework of the United Nations Joint Program; capacity improvement for clean production and eco-efficiency in industry is being piloted and efforts are being made to expand these practices at the national level.

The focus of the program is “reducing water consumption in production”. Under the pilot project, the priority industrial sectors have been determined as food and beverage, textile and leather, chemicals and products, metal coating and mechanical parts manufacturing, in line with economic and environmental criteria at the basin level. Under the program, training courses are organized towards related agencies, entities, sector representatives and project stakeholders, on the topics of “clean production” and “eco-efficiency”.

Under the Project for Parallel Improvement of Industrial Efficiency and Environmental Performance at SME Level, which was implemented between 2007 and 2009 for the purposes of spreading eco-efficiency practices, understanding the relationship between environment and efficiency and undertaking model works for enterprises, by bringing the concept of eco-efficiency on the agenda of enterprises and explaining the worldwide practices to the enterprises; an Eco-Efficiency Guide was prepared to help the enterprises minimize the materials, water and energy they use as well as the wastes they generate, through low-investment and easily applicable eco-efficiency practices. As part of this project, low-cost and easily applicable eco-efficiency opportunities that increase environmental performance and efficiency have been identified and implemented at 5 pilot enterprises.

At certain universities, the topics of clean production, pollution prevention and integrated pollution prevention and control have been included in the curricula.

Under the Project for Integration of Eco-Efficiency into Production Industry, the Sustainable Development and Clean Production Application and Research Center was established under Bosphorus University in 2007. The objective of the center is to evaluate the technical, environmental and economic aspects of clean production and products; the natural resources used at the raw material, production and consumption stages of processes and their environmental impacts, within the framework of eco-efficiency in national and international cooperation environment, to perform interdisciplinary applied research and development activities in management, product and process categories, and to develop policies, action plans and recommendations on these matters.

Waste Management

The work carried out across the country to ensure that package wastes are collected separately at source are being supported and incentivized by the MoEF. Educational materials, indoor boxes, accumulation bags and boxes, containers and similar equipment are distributed to encourage citizens to participate in the separate collection efforts.

The shops, markets, supermarkets, hypermarket and similar shopping places which engage in the wholesale and/or retail sale of packaged products and have an area of larger than 200 m² are responsible for establishing packaging wastes collection points to ensure the separate collection of packaging wastes and inform the consumers; give the packaging wastes to the licensed collection and separation facility with which they have signed a contract in line with the municipality’s packaging wastes collection plan; and take necessary measures to minimize the use of plastic bags. Incentives are provided in order to ensure that the activities in this framework are carried out efficiently. The efforts for the recycling and recovery of hazardous wastes mainly focus on the wastes which require simple technologies for collection and recovery.

Producers of packages are required to provide annual data about the quantities of packages produced, imported and exported for each type of material as well as the companies to which these packages are sold. The companies which offer products to the market are required to provide annual data about the quantities of packages used during the market offer, import and export of products, for each type of material. Since 2005, all data collected from the producers of packages, those who offered packaged products to the market and licensed enterprises regarding the quantities of production, sales and recovery are recorded in this program.

With the support of MoEF, the Union of Chambers and Commodity Exchanges of Turkey (TOBB) has established waste exchanges under chambers of industry in order to minimize the quantity of industrial wastes to be disposed of and ensure the recycling of wastes. Waste Recycling Exchange is an intermediation system which ensures that the wastes generated as a result of production processes at enterprises are recycled and re-used as secondary raw material more commonly and the quantity of wastes to be finally disposed off is reduced. In the Waste Exchange, the process wastes of the industry, auxiliary products, residues or materials which do not meet the required conditions are announced to other enterprises which can use them as inputs for other processes.

Integrated Waste Management (IWM) has been developed to incentivize the sustainable use of resources and change in the producer-consumer attitudes. IWM can be defined as the election and application of appropriate methodologies, technologies and management programs necessary to achieve a specific waste management goal. IWM also covers the compliance with the requirements in the applicable legislation. These arrangements include waste prevention, waste reduction, waste recycling, waste recovery and disposal principles for IWM.

For the preparation of waste inventory in our country, it has been targeted to identify production-waste relationship for each industrial activity. In line with this goal, the production, waste and hazardous waste data have been evaluated and inventories have been prepared in regions where industry activities and waste generation are intensive. In order to determine the hazardous waste potential from these provinces with heavy industry and production, the existing inventories already prepared in our country have been compiled, and the quantities of hazardous wastes generated in provinces have been identified as against the registered industries. Using the hazardous waste/total waste ratios in these provinces, the statements of industrialists and the data reported by provinces within the framework of the waste management plans, inventory information have been produced. Currently, there is no reliable hazardous waste inventory in our country.

It is now possible to fill in the Hazardous Waste Declaration Form on the internet within the framework of the protocol signed between MoEF and Turkish Statistics Institute (TURKSTAT) in order to establish a sound waste inventory across the country. In 2008, pilot implementation of internet-based waste declaration system was launched across the country and real data are targeted to be collected in 2010.

It is also necessary to establish a strong-based data registry system in order to ensure sustainable management of package wastes. To this end, a web-based computer program is being used. The program users consist of the Ministry, market suppliers, package producers and licensed enterprises. Since 2008, the program has been open to 81 Provincial Environment and Forestry Directorates. Thus, the program will be implemented more efficiently, faster and in a decentralized manner, and the provincial directorates will be actively involved in implementation.

Training courses regarding the reduction at source, recycling and disposal of wastes are being implemented by the MoEF Waste Management Department within the framework of annually prepared training programs. Furthermore, training programs are also executed under the projects being implemented:

The Principle of “Polluter Pays”

The Environment Law updated in 2006 puts particular emphasis on the principle of “polluter pays” in environmental management. According to the Law, the expenditures made for preventing, limiting and elimination of pollution and degradation and the improvement of the environment are paid by the party who leads to pollution or degradation. The costs incurred in cases where the polluter fails to take necessary measures for stopping, eliminating or reducing the pollution or degradation or these measures are directly taken by the authorized bodies, shall be collected from the polluter.

AWARENESS RAISING ACTIVITIES FOR SUSTAINABLE CONSUMPTION AND PRODUCTION

Pursuant to the Energy Efficiency Law, EIE is responsible for carrying out theoretical and applied training and awareness raising activities in order to increase the effectiveness of energy efficiency services as well as energy awareness. The Law provides that in order to provide theoretical and practical information about the basic concepts of energy and energy efficiency, the energy outlook of Turkey, energy resources, energy generation techniques, efficient use of energy in daily life, and the importance of energy efficiency in climate changes and environmental protection, the Ministry of National Defense shall organize course and training programs at military schools and soldier training centers; the Ministry of National Education shall incorporate the necessary arrangements in the curricula of formal and extensive educational institutions; and the related public agencies and enterprises shall incorporate the necessary arrangements in their in-service training programs.

According to the Energy Efficiency Law, the public awareness raising activities to be performed for expanding the efficient use of energy are as follows:

- national and/or local televisions and radios shall broadcast, between 07:00 and 23:00 hours, educational programs, competitions, short films and/or cartoon films prepared by the EIE or another agency hired by EIE to promote efficient use of energy, with the total broadcast period of such films not being less than thirty minutes per month, within the framework of information and awareness raising training programs.
- Manufacturers and importers shall include, in the instructions of the energy consuming goods which are required to be accompanied by Turkish manuals and instructions as determined and announced by the Ministry of Industry and Trade, a separate section providing information on the efficient use of energy in using respective products. The Ministry of Industry and Trade shall supervise the enforcement of this provision.
- In cooperation with the Ministry of National Education, Turkish Scientific and Technologic Research Institution, professional chambers, and Turkish Union of Chambers and Stock Exchanges, activities in the context of “Energy Efficiency Week” shall be organized in the second week of January every year.

The activities under the National Energy Efficiency Movement launched through the Prime Ministry Circular No. 2008/2 are planned to be continued with the cooperation of public and private sectors and NGOs under the coordination of EIE. In this context, it is envisaged to;

- increase public communication activities via the visual media;
- implement energy efficiency action plans in provinces;
- include the subjects of energy culture, awareness about efficiency and environment in the curricula;
- reduce energy intensity in the industry, and organize prized competitions in cooperation with TOBB, sector players and banks regarding ecological structures and heat isolation.

Within the framework of Energy Efficiency Training Bus Program, factory staff is provided with on-site and comprehensive training on subjects related to energy efficiency (energy management, increasing energy efficiency in boilers, steam systems, isolation, energy and mass equivalences at factories, pressurized air, efficient use of electricity, focal points of energy saving at factories). Factories are visited for 1-2 days with a bus equipped like a classroom with television, video player, projection device, slide machine and data display, to train staff members at all levels without leaving their workplaces.

In the courses organized at the Energy Efficiency Training Factory under EIE; the engineers and energy managers coming from industrial enterprises are given applied energy efficiency training, using equipment that intensively consume energy, which can all be found at industrial enterprises.

Pursuant to the Regulation on the Implementation Principles of Introductory and User Manuals, information about the energy-efficient use of products is included in a separate section of Instructions and User Manuals for energy-consuming goods.

EIE is organizing seminars to raise awareness level among students about energy efficiency and various documents are distributed to students and teachers. Furthermore, energy efficiency seminars are organized at public agencies and organizations within the framework of in-service training.

The Energy Efficiency Coordination Council organizes events within the framework of “Energy Efficiency Week” in the second week of every January. As part of these events, painting and story competitions themed energy efficiency are organized among primary education students and project competitions are organized among secondary education students, in cooperation with the Ministry of National Education and TÜBİTAK.

EIE is preparing various brochures and booklets regarding energy efficiency at buildings and in transportation, and distributing them to public agencies, universities, municipalities, governorates and participants of energy efficiency events.

Sectoral environmental issues, air pollution, water pollution, soil pollution and energy headings are covered in the Environmental Protection Module of Personal Development Course prepared by the MoNE for inclusion in the curriculum of grade 10. Furthermore, competitions, panels, conferences and similar events were organized at schools after the declaration of the year 2008 as “Energy Efficiency Year”

MoNE Circulars no. 2008/32 and 2009/12 require that due care be given to raising the awareness level of students on keeping the seas, lakes, rivers and the environment clean.

In the Southeastern Anatolia Region, GAP Regional Development Administration is executing a training program on the effective and efficient use of water. The objective of the project is to replace the existing water usage methods with more economical methods, encourage compulsory and/or voluntary water saving in order to be able to meet the rising need for water; ensure that water is consciously used in agriculture, hygiene and urban areas, and furnish the future generations with awareness about the efficient and effective use of water.

At the Architecture Faculty of Istanbul Technical University, Eco-Design Meeting was held between 15 and 29 May 2009, as the first wide-scale platform for sharing eco-design approaches and practices in the educational and professional areas in Turkey. Under this event, Student Eco-Project Exhibition and Environment Friendly Art Exhibition were organized. During the sessions, ecological approaches in professional and academic spheres were discussed and the associations, foundations and initiatives working in this area had the opportunity to explain their activities.