

# ENERGY EFFICIENCY STRATEGY PAPER

2012- 2023

## 1. PREFACE

Energy efficiency is a concept which completes and horizontally cuts the national strategical targets like providing supply security in energy, decreasing the risks due to the import dependence, making the energy costs sustainable, increasing efficacy of climate change combat and protecting environment. Nowadays, in which the importance of sustainable development increasingly understood, the value of the efforts directed to energy efficiency increases at the same rate. In this framework; enhancing energy efficiency, preventing unconscious usage and dissipation, decreasing energy density either in sectoral base or in macro level are preferential and important components of our national energy policy in all the stages from energy production and transmission to the final consumption.

In the light of extracted lessons concluded from the evaluated activities executed in the context of energy efficiency, difficulties encountered in different application points and global affinities in the energy sector it has been imminent to prepare the road map of Turkish energy efficiency area with a strategical and dynamical point of view. This strategical document has been prepared for activating with a collaboration and a participatory approach of public sector and private sector entities and NGOs and defining a political set supported with result oriented and concrete targets and determining necessary actions to be made for reaching these targets and also describing the responsibilities of the entities undertaken during this process. It is proposed to have close collaboration between the public entities and NGOs which are responsible from the realizations of the activities described in this document and application of the measures and evaluation of the results, the subjected coordination will be provided by General Directorate of Renewable Energy in the name of Ministry of Energy and Natural Resources.

General Directorate of Renewable Energy shall form commissions, committees and/or working groups with the collaboration of public, private sector and NGOs for the monitoring and evaluation studies related to application of this strategy. The strategical purposes, targets and actions defined in this document will be examined according to the deeply sectoral analyses by Energy Efficiency Coordination Board at least one time in a year, in the framework of realization rates and new tendencies, changes will be able to be made in available actions and also new actions will be able to be defined. The document will be examined and updated quadrennially.

## 2. SITUATION ANALYSES

Turkey's primary energy density, which means consumed amount of energy to create one unit of Gross Domestic Product (GDP), have been decreased in the rate %0,24 in the year 2008 according to the value in the year 1998 according to the year 1998 GDP series with US Dollar costs in the year

2000 and it is greeted that this decrease tendency increased much more in last years with the effect of radical conversion movement experienced in energy efficiency area after 2007. On the other hand it is seen an increase of %1,83 in yearly basis in our country's electrical energy density in 1998-2008 term according to year 1998 GDP series with US Dollar costs in the year 2000. This situation introduces that in a means big part of electrical energy consumption have resulted from expense out of production and the necessary studies directed to decreasing electrical energy request have to be minded in development of measures related to energy efficiency.

In the term 1998-2008 yearly average increase rate in Turkey's total final energy consumption is %3,81. It has seen that yearly average increases are about %3,56 for industry sector; %3,49 for building sector; %4,07 for transport sector and %7,44 for service sector for the same term. Due to the increase in personel car usage and investments in service sector, it is draw attention that the highest increases recorded in last decade in these two sectors.

In Turkey the sharp increase in demand, observed years and years, by reasons of development and population growth have been continue also in last years. It has seen that the share of total capacities of facilities operating with natural gas in total installed capacity of Turkey increases quickly but the share of renewable energy sources including hydraulic in total installed capacity of our country decreases in last years. Even though the number of power stations of geothermal, wind and biomass, known as new renewables, have been increased, their shares in Turkey's total installed capacity have already been very limited. Out of the final consumption there is also important losses in electricity production and transmission.

In conjunction with our country's electricity consumption structure in dwellings have shown great changes according to dwellings to dwellings, income level of family and equipment infrastructure, the biggest part of the electricity used in the dwellings have been consumed by electrical and electronic goods and the highest share in indoor electricity consumption has belonged to the refrigerators. Serious decreases has been experienced in the electrical appliances energy consumption so today's the best refrigerator has saved %75 according to year 1990 and today's best washing machine has saved %44 in energy, %62 in water according to the models of 1985. As in the same way while a dish washer has spent 2 kWh energy at 60 °C cycle in 1980, today energy consumption decrease under 1 kWh and water consumption decrease one-third. In last years Turkish market in electrical appliances have been started to turn into equipments with labels in A class or higher. Nonetheless it should be necessary to concentrate especially on changing available old equipment stock, which have been in use, into new efficient equipment for decreasing energy consumption due to the electrical appliances.

The other important energy consumption sources appear lastly in Turkey are big screen liquid cristal LCD and plasma TV sets and split air conditioners. The big increase in the sales of windows type split air conditioner especially in south regions with the increase in summer temperature in last years causes big increases in electricity demand and makes the demand peak in day times in summer months. Solving this problem, which is negative and high costly for our energy system, depends on the

taken steps directed to energy efficiency and especially demand side.

Pay back time of investment, which is a key element in changing inefficient equipments with the efficient ones, is defined by electricity costs. Also the efficient equipments are around %10-20 more expensive than inefficient ones and if their preference does not promoted, their competition is difficult with cheap equipments having low efficiency.

Since it has a cheap and effective solution, demand to energy efficient lamps have shown a rapid increase. The sales of compact fluorescent lamps have been reached from 4 million Dollar level in the year 2004 to 20 million Dollar level in the year 2007 and to 32 million Dollar level in the year 2008.

The electrical motors have the highest share in the equipments using electricity in the industry. Consequently improving the efficiency in motor systems especially used in the industry has the great importance in terms of using electricity efficiently. It is estimated that heat isolation internal market indorsement already is around 1,25 billion Dollar and this is made an isolation of 50 million square meter annually. At least in average 400.000 dwellings could be isolated annually with this capacity of the sector. It is evaluated that the existing buildings should be isolated by progressive stages for bring in our country's economy the savings potential in energy usage for the purpose of heating and cooling due to the inadequate isolation of the buildings.

It has been a big increase in load and passenger transport in Turkey with a growth in income level; even this increase in transport have been realized approximately twice the growth in income level. Thus the emission level due to the transport has been low relatively but the increase rate in emissions has been excessively high. Consequently the CO<sub>2</sub> emission amount in Turkey due to the transportation have been under the level of emission amount in developed countries; if the existing growth tendency does not be changed due to becoming growth rate excessively high, the greenhouse gas emission in Turkey will increase seriously and it will be clear that the transport sector would play the primary role in this process. Highways as being the class, where most heavily business of transportation have been realized, have the highest share in CO<sub>2</sub> emissions due to the transport sector.

### **3. RELATIONSHIP WITH OTHER DOCUMENTS AND PROGRAMS**

#### **3.1. Ninth Development Plan**

Following statements have been placed in the articles (405) and (407) of 'Energy' sub-head placed under the title of 'Development of Energy and Transport Infrastructure' with the number (7.1.5) of the Ninth Development Plan related to the term 2007-2013 and published in the Official Gazette of July 1, 2006 with the number Repeated 26215: 'While energy demand has met, it has been the basis that the environmental damages would have to incur at the minimum level and the energy usage would have to be in a most efficiently and economical way in each level from the production to the final

consumption’, ‘It will be targeted that share of the domestic and renewable energy sources in the manufacturing system would be raised to maximum amount’.

In this context concerning the intent and the targets placed in this Document involves the measures related to using the energy and energy sources efficiently in each level from the production to the consumption, this Document is a document having supportive attribute to the Ninth Development Plan.

### **3.2. Medium Term Program**

This Document has the supportive attribute to the statements like ‘Politics like decreasing losses/leakages to the minimum level in the production, transmission and distribution of electricity, increasing supporting facilities in the framework of Energy Efficiency Law, promoting applications like high efficient cogeneration and isolation will be followed ‘ placed in the item (vi) under the sub head ‘Energy’ placed under the title ‘Development of the Infrastructure of Energy and Transport’ numbered as (4) of ‘Medium Term Program’ related to 2011-2013 term published in the Official Gazette of October 10, 2010 with the number 27725.

### **3.3. Industrial Strateical Document of Turkey**

This Document involves and supports the subjects compatible with the following statements placed in the ‘Industrial Strateical Document of Turkey’ published for the term 2011-2014.

a) Written in the subparagraph (k) under the sub head of ‘Infrastructure Sectors’ placed under the title ‘Fields of Horizontal Industrial Politics’ numbered as (4); ‘Energy supply safety will be provided and energy market will be made competitive and energy efficiency will be increased for decreasing input costs of industry. Also it will be provided that the share of renewable energy sources in the energy production in Turkey would be increased.

b) Written in the item numbered (231) under the subhead ‘Existing Situation’ under the title ‘Electrical Energy Sector’ numbered as (5.6.2); ‘Increasing energy efficiency is important for either providing more manufacturing with less energy and decreasing industrial costs or decreasing harmful gas emission’.

c) Written in the subparagraph (b) under the item (235) under the subhead ‘Politics’ placed under the title ‘Electrical Energy Sector’ numbered as (5.6.2); “It is foreseen with the received measures about energy efficiency that less energy usage would be provided in industry, building and transport sectors until the year 2020. In this context in a short term it has been planned to be carried on energy efficiency studies enforced on lightening, isolation, transport and electrical appliances; to be increased efficiency in the existing power stations by using new technologies and to be completed rehabilitation works made for increasing production capacity; to be provided promoting high efficiency cogeneration applications”.

ç) Written in the subparagraph (c) under the item (235) under the subhead “Politics” placed under the title “Electrical Energy Sector” numbered as (5.6.2); “The secondary legislation for energy efficiency has been completed and effective mechanisms directed to increasing energy efficiency and

energy savings will be established. In this context training, audit and consultancy services of the SME's in the energy efficiency area will be supported”.

d) Written in the item (254) under the subhead ‘Existing Situation’ placed under the title ‘Environment’ numbered as (5.7); ‘The concepts of Low Carbon Economy (LCE) or Low Fossil Fuel Economy (LFFE) are used to define the economies providing minimum level of greenhouse gas emissions (especially carbon dioxide) to the biosphere. According to the concept LCE which is evaluated as an important tool in the process decreasing greenhouse gas emissions pioneering climate change, the countries, densely populated and display activity in heavy industry, are considered as carbon-dense countries and in these countries it is foreseen to pass as possible as to ‘zero carbon community’ and to effectuate the economic models based on energy efficiency and renewable energy. In this context the purpose of LCE's is to produce energy and crude materials by using low emission technologies in lots of sectors from manufacturing to agriculture and transport to generation of electricity and so, by providing efficiency in the areas where these mentioned energy and crude materials are consumed, it will be able to be realized to recycling or disposal of also the waste of these areas with a minimum level greenhouse gas emissions. In conjunction with Nuclear Energy and Carbon Capturing and Storage (NECCS) have been seen the primary tools of passing LCEs, it is necessary to care the continuation of using unrenovable sources in either methodology and especially the ambiguity determined in the confidential application of NECCS technologies and also the cost problems. In the context of using renewable energy sources, it will be suitable to care high cost and inefficiency concerns’.

e) Written in the item numbered as (255) under the subhead of “Existing Situation” placed under the title “Environment” numbered as (5.7); “On the other hand it is foreseen that LCEs, which are expected to create new employment and market opportunities, will be the economies to be enlarged most fastly. In this direction it is expected to be supported the enterprises developing product and new services and displaying activities in the areas of low carbon economy (renewable energy, energy efficiency, low carbon technologies, industrial forestry, making greenary, methods of efficient soil working etc.) and to be introduced new business models, to be created new markets and to be provided new employment and “green job” facilities.

In this context The Energy Efficiency Strategical Document is a document supporting also the Turkey Industry Strategical Document.

## 4. DEFINITIONS and ABBREVIATIONS

Unless otherwise specified or defined obviously in this Document; the meanings defined in the legislation related to the energy efficiency have taken as the bases of the meanings of the terms, concepts and abbreviations placed in this Document.

On top of this, following abbreviations means are written on the right sides of the abbreviations.

- 1) BB: (MM) Metropolitan Municipalities,
- 2) BESD: (TWGMA) Turkish White Good Manufacturer Association,
- 3) BSTB: (MSIT) Ministry of Science, Industry and Technology,
- 4) ÇŞB: (MEU) Ministry of Environment and Urbanization,
- 5) E: (A) Action,
- 6) EB: Ministry of Economy,
- 7) EİGM: General Directorate of Energy Affairs,
- 8) EPDK: (EMRA) Energy Market Regulatory Authority,
- 9) ETKB: (MENS) Ministry of Energy and Natural Resources,
- 10) EVD: (ESCO) Energy Efficiency Consultancy Company,
- 11) EVKK: (EECB) Energy Efficiency Coordination Board,
- 12) EÜAŞ: Electricity Generation Corporation,
- 13) GSYH: (GDP) Gross Domestic Product,
- 14) HM: (TT) Turkish Treasury,
- 15) İAB: İstanbul Gold Exchange,
- 16) İDKK: (CCCB) Climate Change Coordination Board,
- 17) İİB: (MI) Ministry of Interior,
- 18) İkincil mevzuat: (Secondary Legislation) Arrangements like bylaws, regulation, directive, communiqué, circular letter, instruction,
- 19) İndirgenmiş enerji yoğunluğu: (Reduced energy intensity) The last three year average of the value, prior to processing year, found dividing the annual energy consumption in industry subsectors to annual production index which is purified from the seasonal and calendar effects of the sector,
- 20) İMKB: İstanbul Stock Exchange,
- 21) İşletme: (Business enterprise) Business premises where production of goods and services of any kind is realized in the industry, transport, agriculture and services sectors,
- 22) KB: (PPA) Ministry of Development,
- 23) KİK: Public Procurement Authority
- 24) Kamu kesimi: (Public Sector) Public organizations and institutions, public qualified professional institutions, universities and local authorities,
- 25) KOSGEB: Small and Medium Enterprises Development Organization,
- 26) MB: (MF) Ministry of Finance,
- 27) OECD: Organization for Economic Cooperation and Development
- 28) OSB: (IZ) Industrial Zones,

- 29) ÖİB: (TPA) Turkish Privatization Administration,
- 30) ÖTV: Excise Tax ,
- 31) SA: (SP) Strategical Purpose,
- 32) Sanayi alt sektörleri: (Industry sub sectors) Sectors that production indexes calculated by Turkish Statistical Institute (TÜİK),
- 33) Sanayi alt sektörü yıllık enerji tüketimi: (Annual energy consumption of industry sub sector) Annual total energy consumption in the sector business enterprises used to find the industry production index by TÜİK,
- 34) SH: (ST) Strategical Target,
- 35) SPK: Capital Markets Board
- 36) Strateji: (Strategy) Energy Efficiency Strategy,
- 37) Sürdürülebilir bina: (Sustainable building) Buildings providing secure and efficient ambient space medium with minimum effect to the environment in the use of energy and source in the way of using energy, water and other natural resources effectively,
- 38) TBMM: Grand National Assembly of Turkey,
- 39) TEİAŞ: Turkish Electricity Transmission Company,
- 40) TEP: (TOE) Tone Oil Equivalent,
- 41) TOBB: Turkish Union of Chambers and Commodity Exchanges,
- 42) TOKİ: Housing Development Administration of Turkey,
- 43) TSE: Turkish Standard Institute,
- 44) TTGV: Technology Development Foundation of Turkey,
- 45) TÜBİTAK: Turkish Scientific and Technical Research Council,
- 46) UDHB: Ministry of Transportation, Maritime Affairs and Communication
- 47) Proje: (Project) Efficiency Improvement Projects,
- 48) VGM: General Directorate of Efficiency
- 49) VOB: Derivatives Exchange,
- 50) Yapı stoğu: (Building stock) Number of buildings that construction is completed and have been in use,
- 51) YEGM: General Directorate of Renewable Energy
- 52) Yıllık enerji tüketimi: (Annual energy consumption) The average of primary energy consumption of the last three years prior to the processing year,
- 53) Yönetici: (Manager) Owner or if any, beneficiary owner or the person responsible from the management in the name of them,
- 54) YY: Local authorities, (Governorships and Municipalities)

## 5. PURPOSE AND MAIN TARGET

It is proposed with this document to determine a political set supported with result focused and concrete targets and to define the to be made activities necessary for reaching targets together with the enterprises responsible for making these activities; to act in the framework of a collaboration and participatory approach of public and private sector and NGOs.

It is targeted with this document to decrease at least 20% of amount of energy consumed per GDP of Turkey in the year 2023 (energy intensity).

## 6. STRATEGICAL PURPOSES

**SP-01:** To reduce energy intensity and energy losses in industry and services sectors

**SP-02:** To decrease energy demand and carbon emissions of the buildings; to promote sustainable environment friendly buildings using renewable energy sources

**SP-03:** To provide market transformation of energy efficient products

**SP-04:** To increase efficiency in production, transmission and distribution of electricity, to decrease energy losses and harmful environment emissions

**SP-05:** To reduce unit fossil fuel consumption of motorized vehicles, to increase share of public transportation in highway, sea road and railroad and to prevent unnecessary fuel consumption in urban transportation

**SP-06:** To use energy effectively and efficiently in public sector

**SP-07:** To strengthen institutional capacities and collaborations, to increase use of state of the art technology and awareness activities, to develop financial mechanisms except public financial institutions



## 7. STRATEGICAL PURPOSES, TARGETS AND ACTIVITIES

**SP-01: To reduce energy intensity and energy losses in industry and services sectors**

**SP-01/ST-01 :** The reduced energy intensities in each industry sub sector shall be decreased in the rates determined with the sector collaborations without being at least 10% for each sub sector within the 10 years after the publication of the Document.

**Code of the Activity :** SP-01/ST-01/A-01  
**Subject of the Activity :** To define applicable measures in energy efficiency with the savings potential in industry sub sectors.

**To be Made Procedure and Explanation :** The energy audits shall be made in four (4) year periods with the YEGM funding at least in the five (5) business enterprises defined by YEGM as such that able to be representing each sector and the results of the studies shall be published in electronic media by compiling as Industry Energy Efficiency Inventory with the audits in the activity in SA-01/SH-01/E-03 which shall be applied in sequential periods. The first of the energy audits shall be resulted between the twelfth (12) months and the twenty-fourth (24) month after the publication of the document. It shall be provided by legislative arrangements if necessary that the business enterprises, chosen in the framework of the criteria determined by the YEGM, shall be enable to the audits to be made by EIE or to be made by third parties to YEGM.

**Responsible :** ETKB

**To be Collaborated Enterprise :** EVD, BSTB, TOBB

**Completion Period of the Procedure:** The preparations of the bill in parliament related to making changes in Energy Efficiency Law and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twelve (12) months as of the date of the publication of the document.

**Code of the Activity :** SP-01/ST-01/A-02  
**Subject of the Activity :** To require the business enterprises, obliged to establish an energy management unit or nominate energy manager in the industry and services sectors, and the industrial zones to have ISO 50001 Energy Management Systems Standard paper in the relations of them with the public enterprises.

**To be Made Procedure and Explanation :** The business enterprises having relation with the public sector shall be provided to have ISO 50001 Energy Management Systems Standard document with the revision of the Law and its secondary legislation and the applications shall be checked. The revision of the Law shall be made by ETKB, however the revisions of secondary legislation shall be made by public sector. .

**Responsible :** Public Sector

**To be Collaborated Enterprise :** TSE

**Completion Period of the Procedure:** The preparations of the bill in parliament related to making changes in Energy Efficiency Law and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twelve (12) months as of the date of the publication of the document.

**Code of the Activity :** SP-01/ST-01/A-03  
**Subject of the Activity :** To prepare the action plans related to the application by determining the necessary measures, energy savings potential and their cost by making energy audits periodically in the business enterprises consuming fivethousand (5.000) TOE annually and in the buildings having a usage area more than twenty thousand (20.000 m<sup>2</sup>) used for commercial or service purposes.

**To be Made Procedure and Explanation:** It would be required to make or to be made by third parties the energy audits once a four (4) year, to send the audit reports and the application plans related to determined measures to YEGM and to permit the YEGM to inspect in place with the revision of the Law and the secondary legislation. The first of the audits shall be made between the forty eighth (48) and sixtieth (60) months as of the date of publication of this document. The revisions of the Law and its secondary legislation shall be made by ETKB.

**Responsible :** Managers of Building and Industrial Enterprises

**To be Collaborated Enterprise :** EVD

**Completion Period of the Procedure:** The preparations of the bill in parliament related to making changes in Energy Efficiency Law and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twelve (12) months as of the date of the publication of the document.

**Code of the Activity** : SP-01/ST-01/A-04  
**Subject of the Activity** : The investments providing increase in energy efficiency shall be encouraged.

**To be Made Procedure and Explanation** : Some studies, in the direction of developing additional support mechanisms, shall be made for the projects of the corporate bodies which were approved by the Energy Efficiency Coordination Board (EVKK).

**Responsible** : ETKB

**To be Collaborated Enterprise** : HM, MB, KB, BSTB

**Completion Period of the Procedure:** The preparations of the bill in parliament related to making changes in Energy Efficiency Law and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twenty-four (24) months as of the date of the publication of the document.

**SP-02: To decrease energy demand and carbon emissions of the buildings; to promote sustainable environment friendly buildings using renewable energy sources**

**SP-02/ST-01** : In year 2023 the heat insulation and energy efficient heating systems providing current standards shall be existed in all commercial and service buildings having total usage area of more than 10.000 m<sup>2</sup> with the dwellings having building group class 3 or more from the defined building groups in the Communiqué About Approximate Unit Costs of the Buildings, which put into force annually, in metropolis contiguous areas from the buildings having usable attribute in the scope of Urban Transformation Law and Earthquake Regulation.

**Code of the Activity** : SP-02/ST-01/A-01  
**Subject of the Activity** : To bring the buildings maximum energy requirement and maximum emission limitations.

**To be Made Procedure and Explanation** : With the revision of the legislation in force in parallel to the EU applications, the minimum annual energy demand covering the subjects of heating, cooling and lightening etc shall be determined according to the conditions of suitable construction of the building by function (hotel, hospital, dwelling, school, shopping center etc), by climate conditions of the region it has been (temperature, wind effect etc), by its architectural design (orientation etc) and by mandatory standards in force (TS 825 Heat Isolation Standard etc) and the maximum CO<sub>2</sub> emission amount to be permitted shall be determined by taken as the bases to provide the mentioned energy demand from energy efficient and /or clean energy sources and technologies and no permission shall be given to the new building constructions exceeding these limit values. Approximating to these limit values shall be encouraged by rehabilitation of the existing buildings.

**Responsible** : ÇŞB

**To be Collaborated Enterprise** : ETKB, TSE

**Completion Period of the Procedure** : The Building Energy Performance Specification shall be revised with all of its sub arrangements within the thirty six (36) months as of the date of publication of the document and the necessary standards shall be developed.

**Code of the Activity** : SP-02/ST-01/A-02  
**Subject of the Activity** : Administrative sanction shall be applied to the ones having amount of carbon dioxide emissions exceeding the minimum amount defined in the related legislation by the year 2017.

**To be Made Procedure and Explanation** : Administrative sanction shall be applied to the buildings having amount of carbon dioxide on the Energy Identification Certificate, arranged according to the procedures defined in SA-02/SH-01/E-01, exceeding the defined minimum value with the revision of related legislation .

**Responsible** : ÇŞB

**To be Collaborated Enterprise** : ETKB

**Completion Period of the Procedure:** The preparations of the bill in parliament related to making changes in the related laws and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twenty four (24) months as of the date of the publication of the document.

**SP-02/ST-02 :** At least one fourth of (1/4) building stock in the year 2010 shall be made as sustainable building by the year 2023.

**Code of the Activity :** SP-02/ST-02/A-01  
**Subject of the Activity :** In holding the licenses of commercial buildings and luxury dwellings and residences having usable area more than ten thousand meter square (10.000 m<sup>2</sup>) to request attribute of sustainability as of the date of eighteenth (18) months following the issue of license, to promote this application as covering the buildings defined in SA-02/SH-01 by the year 2017.

**To be Made Procedure and Explanation :** The related legislation shall be revised. In this context the newly constructed buildings, by taking care of the developing levels of the attached municipality, building development schemes, land values and natural energy facilities around the environment, shall be requested to have certificate having comperable characteristic in the framework of the applied criteria in the national or international level showing that they shall be sustainable.

**Responsible :** ETKB, ÇŞB

**To be Collaborated Enterprise :** YY

**Completion Period of the Procedure :** The secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twelve (12) months as of the date of publication of the document.

**Code of the Activity :** SP-02/ ST-02/A-02  
**Subject of the Activity :** To promote local production applications in the public housing projects.

**To be Made Procedure and Explanation :** The utilizing facilities of renewable energy sources and cogeneration or microgeneration, central and regional heating and cooling and heat pump systems shall be analysed in the public housing projects, the applications corresponding to at least 10% of the dwelling cost shall be encouraged in the framework of the criteria defined by the ministry and until the legislation in the context of the activity SA-02/SH-01/E-01 shall be in force.

**Responsible :** ETKB

**To be Collaborated Enterprise :** ÇŞB

**Completion Period of the Procedure :** The preparations of the bill in parliament related to making changes in the Energy Efficiency Law and in the related laws and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twelve (12) months as of the date of the publication of the document.

**SP-03: To provide market transformation of energy efficient products**

**SP-03/ST-01 :** The market transformation of lamps, refrigerators and electrical motors over the minimal energy efficiency class shall be completed until at the end of 2012 and however market transformation of heating/cooling systems and other energy efficient products shall be accomplished in parallel to the EU implementations.

**Code of the Activity :** SP-03/ST-03/A-01  
**Subject of the Activity :** To limit the sales of goods using energy inefficiently and to activate market inspection

**To be Made Procedure and Explanation :** The “Energy Labelling of the Energy Related Products” Directive of EU numbered 2010/30/EU shall be harmonized and be published in the Official Gazette as a framework regulation and under this to be published framework regulation (2010/30/EU) and the regulation Environmentally-Conscious Design of Energy Related Products (2009/125/EC) published in Official Gazette of October 7, 2010; the application arrangements (refrigerator, lamp, television, external power supply and electrical motors included with priority) in the basis of product groups shall be made in parallel to the EU applications and the corporate capacity, giving possibility to monitor the development in the product sales and to make market inspection efficiently, shall be developed.

**Responsible :** BSTB

**To be Collaborated Enterprise :** ETKB, BESD

**Completion Period of the Procedure:** The arrangements enforced by EU shall be made in three (3) months as of the date of publication of the document and others shall be made simultaneously.

**SP-04: To increase efficiency in production, transmission and distribution of electricity; to decrease energy losses and harmful environment emissions**

**SP-04/ST-01 :** The total average cycle efficiency of the coal thermal power plants around the country including waste heat recovery shall be increased over forty-five percent (45%) by the year 2023.

**Code of the Activity :** SP-04/ST-01/A-01  
**Subject of the Activity :** To be respected with priority of the subjects of total cycle efficiency, harmful environment emissions and waste heat recovery in the process of rehabilitation, modernization, privatization, license granting of coal thermal power plants and their legislation arrangements.  
**To be Made Procedure and Explanation :** This action shall be considered with priority in the to be made bids, in the preparation of privatization specifications and in the legislation of granting license; some legislation arrangements shall be made to encourage the efficient and clean applications using domestic coal.  
**Responsible :** ETKB, EÜAŞ, EPDK, ÖİB  
**To be Collaborated Enterprise :** KB, ÇŞB  
**Completion Period of the Procedure :** The arrangements of secondary legislation shall be made within the twelve (12) months as of the date of publication of the document.

**SP-04/ST-02 :** Some measures about the subject of demand side management shall be developed for decreasing the electrical energy intensity at least 20% until the year 2023.

**Code of the Activity :** SP-04/ST-02/A-01  
**Subject of the Activity :** To make applications of progressive stage tariff, multiple term counter and smart network according to the amount of energy and power.  
**To be Made Procedure and Explanation :** These applications shall be commenced by taking care of the electricity distribution privatizations.  
**Responsible :** EPDK  
**To be Collaborated Enterprise :** Electricity Distribution Companies  
**Commencement Period of the Procedure :** It shall be commenced in twenty four (24) months as of the date of publication of the document.

**Code of the Activity :** SP-04/ST-02/A-02  
**Subject of the Activity :** To provide the free market entry of load decrease of demand side.  
**To be Made Procedure and Explanation :** The secondary legislations shall be enforced and the technical infrastructures shall be prepared.  
**Responsible :** EPDK, TEİAŞ  
**To be Collaborated Enterprise :** ETKB  
**Commencement Period of the Procedure :** It shall be commenced within the twelve (12) months as of the date of publication of the document.

**SP-05: To reduce unit fossil fuel consumption of motorized vehicles, to increase share of public transportation in highway, sea road and railroad and to prevent unnecessary fuel consumption in urban transportation**

**SP-05/ST-01 :** The small vehicles carrying passenger and load (M1/N1 category) shall meet the provisions of secondary legislation which would be produced in the direction of the EU legislation related to CO<sub>2</sub> emissions, the transport master plans in big cities shall be prepared and put into force.

**Code of the Activity** : SP-05/ST-01/A-01  
**Subject of the Activity** : **To encourage environment friendly vehicles having small size motor with low emission (suitable to the legislation of enforced type approval), having fuel cell or hybrid vehicle with electricity and to withdraw from traffic the vehicles filled their economic life by progressive stages.**

**To be Made Procedure and Explanation** : Depending on the results of the to be made regulatory effect analysis with the collaboration of Ministry and Ministry of Finance with the revision of legislation and in the framework of the criteria determined by the Ministry of Finance, some works, directed to passing environmental taxation regime in the vehicles, shall be made by taking care of the applications in the countries which are member of European Union and OECD.

**Responsible** : MB

**To be Collaborated Enterprise** : BSTB, UDHB, ETKB

**Completion Period of the Procedure** : Preparations of the bill in parliament related to making changes in the related laws and the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty-four (24) months as of the date of publication of the document.

**Code of the Activity** : SP-05/ST-01/A-02  
**Subject of the Activity** : **To enforce transport master plans at metropolis interested in public transportation and fuel wastage with priority and supporting transport systems one another by establishing bicycle and car parking areas in the public transportation stations.**

**To be Made Procedure and Explanation** : The transport master plans shall be prepared and enforced in the cities having metropolitan municipalities.

**Responsible** : BB, İİB

**To be Collaborated Enterprise** : UDHB

**Completion Period of the Procedure** : The transport master plans shall be prepared and enforced in twenty four (24) months as of the date of publication of the document.

**Code of the Activity** : SP-05/ST-01/A-03  
**Subject of the Activity** : **To decrease the share of road transportation in the total transportation, to develop sufficiently the infrastructure of the types of transportation alternative to the road transportation, to increase the share of sea roads and railways in load and passenger transportation.**

**To be Made Procedure and Explanation** : The share of railways in the load and passenger transportation shall be increased by enlarging railways network, the high speed train projects shall be given weight and promoted, the existing railways infrastructure shall be modernized, the railways network shall be planned and enlarged by taking care of industrial zones; short distance maritime and lake transportation shall be promoted, the infrastructure of maritime transport shall be developed and small maritime transport vehicles like sea-taxi shall be promoted in the coastal regions.

**Responsible** : UDHB

**To be Collaborated Enterprise** : KB

**Completion Period of the Procedure** : Preparations of the bill in parliament related to making changes in the related laws or the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty four (24) months as of the date of publication of the document.

**Code of the Activity** : SP-05/ST-01/A-04  
**Subject of the Activity** : **To promote smart transportation systems and smart traffic management applications, where information and communication technologies was used, for providing network efficiency and increasing energy efficiency in transportation.**

**To be Made Procedure and Explanation** : By forming the necessary source for establishing smart transportation systems, the system technical infrastructure shall be strengthened and necessary research and development studies shall be made.

**Responsible** : UDHB

**To be Collaborated Enterprise** : KB

**Completion Period of the Procedure** : Preparations of the bill in parliament related to making changes in the related laws or the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty four (24) months as of the date of publication of the document.

<b>Code of the Activity</b>	: SP-05/ST-01/A-05
<b>Subject of the Activity</b>	: To shift road transport load to railway or sea road in the case of long distance mass transportation by making arrangements especially in load transportation in the direction of “Combined Transportation Strategy” being predicated on using transportation types in the places most effective in the technical and economical respect; to use road transportation effectively in the transportation of starting and final points being essential of door to door transportation; to promote multiple mode transportation especially in load and passenger transport
<b>To be Made Procedure and Explanation</b>	: The connection of ports and railways and road transport shall strengthened, the number of logistic centers and transfer areas shall be increased, the application of private (lanes in a road) bus roads/lanes shall be effectuated, type diversity in the public transportation shall be provided by using the facilities of cities like sea road, railway and providing transport with light railway systems from the fastly developing suburban areas to the city centers in big cities shall be supported.
<b>Responsible</b>	: UDHB
<b>To be Collaborated Enterprise</b>	: KB
<b>Completion Period of the Procedure</b>	: Preparations of the bill in parliament related to making changes in the related laws or the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty-four (24) months as of the date of publication of the document.

**SP-05/ST-02** : The use of bio-fuels obtained from biomass sources or synthetic fuels in transportation shall be promoted.

<b>Code of the Activity</b>	: SP-05/ST-02/A-01
<b>Subject of the Activity</b>	: To encourage increase of collating rate of bio fuel and synthetic fuel in fossil sourced fuel.
<b>To be Made Procedure and Explanation</b>	: An arrangement in the direction of making excise tax reduction depending on collating rate of biofuel, produced from native agricultural products, or synthetic fuel shall be made as such that not affecting food sector.
<b>Responsible</b>	: MB
<b>To be Collaborated Enterprise</b>	: UDHB, ETKB
<b>Completion Period of the Procedure</b>	: Preparations of the bill in parliament related to making changes in the related laws or the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty-four (24) months as of the date of publication of the document.

**SP-06**: To use energy effectively and efficiently in the public sector

**SP-06/ST-01** : Annual energy consumption in the public enterprises buildings and facilities shall be decreased as ten percent (10%) by the year 2015 and as twenty percent (20%) by the year 2023.

<b>Code of the Activity</b>	: SP-06/ST-01/A-01
<b>Subject of the Activity</b>	: To be activated efficiency improvement applications in the buildings and facilities of public enterprises.
<b>To be Made Procedure and Explanation</b>	: The efficiency improvement projects shall be prepared by making energy audits in the buildings and facilities of the public enterprises and the budget allowances of the maintenance shall be used for these projects with priority. Prime Ministry circular numbered as 2008/2 shall be revised in this direction by ETKB and the public bodies and public institutions shall enforce arrangements like internal regulations, directives, circular, instructions etc which would be prepared by the public bodies and public institutions directed to their employees in the direction of Prime Ministry circular.
<b>Responsible</b>	: Public sector
<b>To be Collaborated Enterprise</b>	: ETKB, KB, EVD, MB
<b>Completion Period of the Procedure</b>	: Prime Ministry circular numbered as 2008/2 shall be revised in twelve (12) months as of the date of publication of the document and internal legislation arrangements suitable to this shall be made in public sector in one (1) month following this revision.

**Code of the Activity** : SP-06/ST-01/A-02  
**Subject of the Activity** : **Not to buy or not to make the ones that not providing minimum efficiency criteria, determined by the Ministry, in commodity and service procurements and construction works having energy use in public procurements.**

**To be Made Procedure and Explanation** : The Ministry shall define the minimum efficiency criteria for the commodity and service procurements and construction works in the public procurements and the necessary changes shall be made in the legislation related to the public procurement or in the specifications for requiring as a mandatory criteria during the procurement or construction of these. After the legislation, defined in the context of SA-02/SH-01/E-01, shall be in force, the buildings, which are not meet the limit value related to emission and defined maximum energy consumption, shall not be rented

**Responsible** : ETKB, MB, KİK

**To be Collaborated Enterprise** : BSTB

**Completion Period of the Procedure** : Preparations of the bill in parliament related to making changes in the Energy Efficiency Law and other related laws or the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twenty-four (24) months as of the date of publication of the document.

**Code of the Activity** : SP-06/ST-01/A-03  
**Subject of the Activity** : **The vehicles fulfilled their economic lives shall be clarified by gradually in the public enterprises.**

**To be Made Procedure and Explanation** : The vehicles belong to the public enterprises and fulfilled their economic lives as of the date of official registration to the traffic shall be clarified with the revision of Vehicle Law.

**Responsible** : MB, Public sector

**To be Collaborated Enterprise** : ETKB, KB

**Completion Period of the Procedure:** Preparations of the bill in parliament related to making changes in the related laws and the secondary legislation arrangements, which shall be made in the framework of legislations in force, shall be made in twenty-four (24) months as of the date of publication of the document.

**Code of the Activity** : SP-06/ST-01/A-04  
**Subject of the Activity** : **To realize efficiency improvement applications in the buildings and facilities belong the public sector with Energy Performance Agreements**

**To be Made Procedure and Explanation** : Arrangements shall be made which would provide to make long term, performance guaranteed Energy Performance Agreements with Energy Efficiency Consultancy Companies for applications related to efficiency improvement projects of public enterprises and establishments. Allowance proposals of public enterprises and establishments related to efficiency improvement projects shall be evaluated with priority.

**Responsible** : ETKB, MB, KİK

**To be Collaborated Enterprise** : KB

**Completion Period of the Procedure** : The preparations of the bill in parliament related to making changes in the Energy Efficiency Law and in the related laws and the secondary legislation arrangements, which shall be made in the framework of the legislation in force, shall be made within the twelve (12) months as of the date of the publication of the document.

**SP-07: To strengthen institutional structures, capacities and collaboration; to increase use of state of the art technology and awareness activities and to develop financial mechanisms except public.**

**SP-07/ST-01** : The institutional structure, capacity and mutual cooperation of implementing organizations shall be strengthened until the end of 2012.

**Code of the Activity** : SP-07/ST-01/A-01

**Subject of the Activity** : To strengthen corporate structures.

**To be Made Procedure and Explanation** : The structure, which is powerful from the administrative and corporate point of view, shall be established for making studies related to energy efficiency, renewable energy resources and energy information and technology.

**Responsible** : ETKB

**To be Collaborated Enterprise** : KB

**Completion Period of the Procedure** : Preparations of the bill in parliament shall be completed in twelve (12) months as of the date of publication of the document and the bill in parliament shall be dispatched to the Turkish Grand National Assembly (TBMM).

**Code of the Activity** : SP-07/ST-01/A-02

**Subject of the Activity** : To strengthen collaborations.

**To be Made Procedure and Explanation** : Collaboration protocols including common activities between the ETKB and other related ministries shall be made, communication network between local authorities shall be established and strategic collaboration shall be established between YEGM, TOBB and VGM in the context of energy audits, trainings and incentive contests in industry. It shall be provided that enterprises or establishments, which were a member of EVKK, would be represented by managerial staff and the Board efficiency shall be increased. The Advisory Board shall be structured in subgroups as to work in thematic areas.

**Responsible** : ETKB,

**To be Collaborated Enterprise** : Public Sector, YY, TOBB, VGM

**Completion Period of the Procedure** : It shall be commenced in twelve (12) months as of the date of publication of the document.

**Code of the Activity** : SP-07/ST-01/A-03

**Subject of the Activity** : In the related authority and private sector to develop the necessary capacity for not licencing to the buildings contrary to the Building Energy Performance Legislation and applying "Energy Identification Certificate" in the buildings

**To be Made Procedure and Explanation** : The authorization process, in increasing the number of Energy Efficiency Consultancy Companies to display activity in the buildings, shall be rearranged and training programs for the staff of construction supervisory companies and local authorities shall be made

**Responsible** : ÇŞB, YEGM, YY

**To be Collaborated Enterprise** : İİB

**Completion Period of the Procedure** : As of the date of the publication of the document; the secondary legislation revision, which would be made in the framework of legislation in force, shall be made in six (6) months and trainings shall be made in twenty-four (24) months .

**Code of the Activity** : SP-07/ST-01/A-04

**Subject of the Activity** : In the areas of energy efficiency and renewable energy resources ; to build capacity for enabling integrated resource plannings and providing future previsions with performance indicators which compared the development in Turkey with the previous years and other countries.

**To be Made Procedure and Explanation** : The mentioned capacity shall be established with the infrastructures of information technology and well-qualified manpower.

**Responsible** : ETKB

**To be Collaborated Enterprise** : EİGM, KB

**Completion Period of the Procedure** : The necessary capacity shall be established in twelve (12) months as of the date of publication of the document.



**SP-07/ST-02** : The number of certified energy managers shall be increased up to at least five-thousand (5.000) persons and the number of energy efficiency consultancy companies (EVD) expertized in industry sectors shall be increased up to fifty (50) companies in the country general by the end of the year 2015.

**Code of the Activity** : SP-07/ST-02/A-01

**Subject of the Activity** : **Rearranging authorization criteria: To classify and grade authorization certificates given to the Energy Efficiency Consultancy Companies; to prepare and develop the minimum standards directed to the energy efficiency services of the Energy Efficiency Consultancy Companies.**

**To be Made Procedure and Explanation** : The Energy Efficiency Consultancy Companies shall be specialized in the base of sector and/or sub-sector, the authorization certificates given to the Energy Efficiency Consultancy Companies shall be classified and graded; to reach the upper classes and grades shall be encouraged, the minimum requirements in the subjects of related to the energy efficiency services about training, audit, project and consultancy shall be determined and the studies of training and certification shall be activated and promoted.

**Responsible** : ETKB

**To be Collaborated Enterprise** :

**Completion Period of the Procedure** : The secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in six (6) months as of the date of publication of the document.

**SP-07/ST-03** :The number of original design and/or product, which would be commenced to be manufactured based on domestic R&D results, shall be at least fifty (50) by the year 2023 in the areas of energy efficiency and renewable energy resources.

**Code of the Activity** : SP-07/ST-03/A-01

**Subject of the Activity** : **In the areas of energy efficiency and renewable energy resources; to prepare technology master plans, to provide coordination between the supporting establishments, to form a national technology inventory where investors benefited.**

**To be Made Procedure and Explanation** : The technology master plan shall be prepared in accordance with Energy R&D Strategy to be enforced by the collaboration of The Scientific and Technological Research Council of Turkey (TÜBİTAK) and ETKB, coordination protocols directed to efficient use of resources shall be signed between supporting public enterprises and establishments, the national technology inventory shall be developed in the context of R&D projects executed, terminated successfully and put into practice.

**Responsible** : ETKB, TÜBİTAK

**To be Collaborated Enterprise** : KB, BSTB, TTGV, KOSGEB, Universities

**Completion Period of the Procedure**: It shall be completed in eighteen (18) months as of the date of publication of the document.

**Code of the Activity** : SP-07/ST-03/A-02

**Subject of the Activity** : **In the areas of energy efficiency and renewable energy resources; to arrange legislation for encouraging R&D results application and to be established perfection centers established with the collaboration of public-private sectors in the preferential technologies.**

**To be Made Procedure and Explanation** : Related legislation shall be revised.

**Responsible** : BSTB

**To be Collaborated Enterprise** : HM, TÜBİTAK, ETKB, KB, MB

**Completion Period of the Procedure** : Preparations of the bill in parliament related to making changes in the related laws and the secondary legislation arrangements, which shall be made in the framework of legislation in force, shall be made in twelve (12) months as of the date of publication of the document.

**SP-07/ST-04** : The awareness and encouragement activities carried on as part of the “National Energy Efficiency Movement” shall be promoted with the collaboration of public sector, private sector and NGOs.

**Code of the Activity** : SP-07/ST-04/A-01  
**Subject of the Activity** : **To prepare a communication plan and conduct the awareness activities in the framework of this communication plan.**

**To be Made Procedure and Explanation** : The awareness activities in nationwide shall be conducted within the framework of a communication plan which would be prepared with the public sector, private sector and NGOs under the coordination of ETKB.

The application of the prepared plan shall be realized in the coordination of ETKB with the social responsibility understanding and with the contributions of public enterprises, establishments and other shareholders. The plan shall be renewed in the form of terms. The expenses related to the awareness activities to be enforced in the framework of the plan by the public enterprises and establishments shall be excluded from the scope and the necessary allowance shall be put into the budgets of the public enterprises and establishments for application of EVKK decisions in the subjects of awareness and realization of the activities placed in the plan in the subject of awareness.

**Responsible** : ETKB, Public sector

**To be Collaborated Enterprise** : Private sector and NGOs

**Completion Period of the Procedure** : The plan shall be prepared within the twelve (12) months as of the date of publication and shall be applied in at most three (3) years.

**Code of the Activity** : SP-07/ST-04/A-02  
**Subject of the Activity** : **Development of “Energy efficiency consciousness index”.**

**To be Made Procedure and Explanation** : An index, which shall monitor the development of the energy culture and efficiency consciousness in the community, shall be defined with the measurement methods and an application plan shall be prepared.

**Responsible** : YEGM

**To be Collaborated Enterprise** : Public sector, private sector and NGOs

**Completion Period of the Procedure** : The index shall be developed and the application shall be commenced within the twelve (12) months as of the date of publication of the document.

**SP-07/ST-05** : In the context of sustainable financing mechanisms except the public for the applications related to energy efficiency and renewable energy sources, the works of developing the infrastructure of carbon trading and carbon market shall be completed within the eighteen (18) months as of the date of publication of the document.

**Code of the Activity** : SP-07/ST-05/A-01  
**Subject of the Activity** : **To prepare a road map or a Strategical Document directed to establishing carbon market with a serious of the workshops where the related shareholders shall have been attended.**

**To be Made Procedure and Explanation** : -

**Responsible** : ÇŞB, İDKK

**To be Collaborated Enterprise** : ETKB, MB, KB, HM

**Completion Period of the Procedure**: A road map or a Strategical Document shall be prepared directed to establishing Carbon Market in the eighteen (18) months as of the date of publication of the document.