REPUBLIC OF TÜRKİYE
MINISTRY OF ENERGY AND
NATURAL RESOURCES

Energy Efficiency 2030 Strategy and 2nd National Energy Efficiency Action Plan

(2024 - 2030)

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Preamble

For a long time, the energy sector has been dealing with a difficult situation at which the threat of climate change, pandemics, geopolitical developments arisen particularly in our region, and supply chain disruptions have occurred simultaneously and evoked a perfect storm. These developments have led to a period of peaks in commodity and energy prices. The era of high energy costs is still ongoing despite the global economic slowdown.

This situation with high energy costs and supply problems poses a threat to the energy supply security of the nations dependent on foreign energy sources. As a result, many countries are developing new strategies to ensure energy supply security. Economic programs with clean energy transition at their core, such as the Green Deal in Europe and the Inflation Reduction Act in the US, are being implemented within the scope of these strategies.

One of the common areas of all these new policies and programs is energy efficiency. Energy efficiency generates more than 600 billion USD in yearly expenditures, creates one million new employment each year, and is seen as a critical component in managing energy issues and meeting net-zero emission targets. In our own country, we have identified energy efficiency as a top priority across our short, medium, and long-term energy planning efforts.

With the growing population, developing economy and rising prosperity of our country, there is also an increase in energy consumption which is directly affected by industrialization, urbanization, technological developments and changes in consumption habits. Nevertheless, the increase in energy demand has lagged behind economic growth and the rise in emissions is slower than the growth in energy use. This picture shows us two facts. First, we use energy more efficiently through energy efficiency practices and thus limit the increase in demand. Second, we meet our energy needs with cleaner energy sources, thereby reducing our emissions and ensuring our energy transition.

As part of the Green Development Revolution, our President announced our country's goal of achieving net-zero emissions by 2053. To achieve a greener and more sustainable Turkish Century and meet our 2053 target, as the Ministry of Energy and Natural Resources we have announced the National Energy Plan of Türkiye, which sets the long-term strategy for the energy sector, available to the public. Accordingly, our priorities for achieving the necessary energy transition and achieving our goals include increasing the use of renewable energy, using nuclear energy and the natural gas as a transitional fuel, exploring hydrocarbon resources and incorporating them into economic activity, strengthening energy infrastructure to meet transition needs, investing in hydrogen, critical minerals, storage, and digitalization technologies, and developing and promoting domestic production in all areas of energy sector.

Undoubtedly, the complementary action of the shift to net-zero emissions is the energy efficiency practices. The actions and measures taken for energy efficiency allow to reduce energy use without compromising production, services, comfort, and social well-being.

In the past 21 years, we have brought our country to the forefront with our investments in clean energy resources, and we have taken important steps in energy efficiency, which we call “first fuel”. We have effectively met the goals outlined in our country’s 1st National Energy Efficiency Action Plan for the period 2017-2023. Thanks to efforts across all sectors, from production to final consumption, our primary energy consumption has decreased by 14%. During the initial phase of our Action Plan, we invested 8.5 billion USD. We saved approximately 70 million tons of emission. And for all those measures we created 45 thousand new employment. In 2021 and 2022, we achieved the distinction of being one of only two countries worldwide to improve energy intensity for two consecutive years. While global energy intensity improved by an average of 2% in 2022, our country’s energy intensity saw a remarkable decrease of 6.2%.

In accordance with our country’s 2053 net-zero climate targets and as part of the sustainable and environmentally friendly energy policy, we are launching a new energy efficiency movement to strengthen energy supply security and minimize foreign dependency. In this regard, to keep gains moving forward in the Turkish Century, we are now launching Türkiye’s Energy Efficiency 2030 Strategy and the 2nd National Energy Efficiency Action Plan, which will be implemented between 2024 and 2030.

In the Energy Efficiency 2030 Strategy Document, which was developed with the participation of a diverse range of stakeholders, including the public, private sector, non-governmental organizations, universities, and new entrepreneurs, we have outlined 10 strategic goals and 23 objectives. Our Action Plan, which aims to achieve these goals, includes 61 actions and 266 activities divided into seven categories: industry and technology, buildings and services, energy, transportation, agriculture, horizontal topics, start-ups, and digitization.

Through the implementation of our Action Plan, we aim to reduce our energy consumption by 16% by 2030, thereby contributing to a reduction of 100 million tons of emissions. To reach these targets, we will invest 20.2 billion USD in energy efficiency projects alongside both the public and private sectors by 2030. This will not only create new employment opportunities by supporting companies engaged in energy efficiency but will also result in 46 billion USD in energy savings by 2040.

In order to alleviate the burden of energy costs on our economy, protect the environment, and combat climate change, it is imperative for all segments of our society to embrace energy efficiency.

I urge all citizens to use energy efficiently as we strive to achieve the goals set forth for the Turkish Century, and I hope that our documents outlining our energy efficiency targets for 2030 will prove beneficial for our nation.

Alparslan BAYRAKTAR

Minister of Energy and Natural Resources

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Definitions and Abbreviations

BEM: Building Energy Modelling
BIM: Building Information Modelling
BMS: Building Management System
CBAM: EU Carbon Border Adjustment Mechanism
CCSD: Climate Change Strategy Document
CO_2 eq: Carbon Dioxide Equivalent
EE: Energy Efficiency
EEC: Energy Efficiency Consultancy
EGD: European Green Deal
EIC: Energy Identity Certificate
EMRA : Energy Market Regulatory Authority
ENVER Portal: Energy Efficiency Portal
EPC: Energy Performance Contracts
EPİAŞ: Energy Markets Management Joint Stock Company
ESCO: Energy Service Company
ESFIT: Energy Saving Feed-In Tariff
ETS: Emission Trading System
EU: European Union
EÜAŞ: Electricity Production Joint Stock Company
GDP: Gross Domestic Product
GIS: Geographic Information System
IBD: Integrated Building Design
IEA: International Energy Agency
ILBANK: Iller Bank Joint Stock Company
ISO: International Standards Organization
ITS : Intelligent Transportation Systems
KENTGES: Integrated Urban Development Strategy and Action Plan
KGF: Credit Guarantee Fund
KOSGEB: Small and Medium Scale Industry Development and Support Administration
MoAF: Ministry of Agriculture and Forestry
MENR: Ministry of Energy and Natural Resources
MoEUCC: Ministry of Environment, Urbanization and Climate Change
MoIA: Ministry of Internal Affairs
MoIT: Ministry of Industry and Technology
MoNE: Ministry of National Education
MoT : Ministry of Trade
MoTF: Ministry of Treasury and Finance
MoTI: Ministry of Transport and Infrastructure
MTOE: Million Tons of Oil Equivalent
MTV: Motor Vehicle Tax
MW: Megawatt
MWe: Megawatt-electricity
NEEAP: National Energy Efficiency Action Plan
nZEB: Nearly Zero-Energy Building
OECD: Organization for Economic Co-operation and Development
OIZ: Organized Industrial Zone
PPA: Public Procurement Authority
PTT: Postal and Telegraph Organization
R&D: Research and Development
SCC: Capacitor Centre in Series
SCT: Special Consumption Tax
SEDDK: Insurance and Private Pension Regulation and Supervision Agency
SG: Strategic Goal
SHW: State Hydraulic Works
SME: Small and Medium Enterprise
SO: Strategic Objective
SPP: Solar Power Plant
TAB: Testing, Adjustment and Balancing
TAGEM: General Directorate of Agricultural Research and Policies
TBMM: Grand National Assembly of Türkiye
TCDD: Republic of Türkiye State Railways
TEDAŞ: Turkish Electricity Distribution Joint Stock Company
TEİAŞ: Turkish Electricity Transmission Joint Stock Company
TENMAK: Turkish Energy, Nuclear and Mining Research Corporation
TKDK: Agriculture and Rural Development Support Institution
TOE: Tons of Oil Equivalent
TSE: Turkish Standards Institution
TURKSTAT: Turkish Statistical Institute
TÜBİTAK: Turkish Scientific and Technological Research Council
TWh: Terawatt-hour
VAP: Efficiency Enhancing Project
VOC: Volatile Organic Compound
WPP: Wind Power Plant
YEKDEM: Renewable Energy Resources Support Mechanism
YeS-TR: National Green Building Certification System
YÖK: Higher Education Institution
YPK: High Planning Council

Executive Summary

Placing the vision of "a safe future in energy and natural resources" at the centre of its energy policies, Türkiye aims to increase efficiency in all processes from energy production to final consumption, within the framework of its mission of "providing the highest contribution to the country's welfare by utilising energy and natural resources in an efficient and environmentally friendly manner".

A new transition process was initiated with the Energy Efficiency Law, which formed the basis for energy efficiency studies and came into force in 2007. The Energy Efficiency Strategy Document (2012-2023) was published in 2012 and 2023 energy efficiency targets were identified. In order to achieve these targets, the 1st National Energy Efficiency Action Plan (NEEAP) covering the period 2017-2023 has been prepared. In order to effectively implement the 1st NEEAP, which aims a cumulative energy saving of 23.9 million tons of oil equivalent (MTOE) and reduction of emissions by 66.6 million tons of CO_2 eq. between 2017 and 2023 with an investment of 10.9 billion USD, and to monitor the implementation period in a robust manner, progress reports were prepared every 6 months and shared with the public. In the period between 2017 and 2023, 8.47 billion USD were invested in energy efficiency, resulting in 24.6 MTOE energy savings. With the investments made and savings achieved, 68.62 million tons of CO_2eq. reduction (cumulative) was achieved, and 44,880 new jobs were created. With the expectation that the investments made during the 1st NEEAP period will provide similar savings in the future, the total monetary savings until 2033 are expected to be 30.2 billion USD cumulatively. In addition to monetary savings, energy efficiency has incalculable benefits on health and well-being, and it is calculated that each investment in energy efficiency has a 4-fold return.

One of the goals set out in the Energy Efficiency Strategy Document (2012-2023) is to reduce energy intensity. A remarkable progress has been made as a result of the energy efficiency studies carried out within the framework of the target of reducing Türkiye's energy intensity by 20% in 2023 compared to 2011. While Türkiye's gross domestic product (GDP) increased by 5.5% in 2022 compared to the previous year, primary energy supply decreased by 1.0%, primary energy intensity improved by 6.2% and final energy intensity improved by 7.9%, in other words, the amount of energy used to produce one unit of added value has decreased. Thus, as of 2022, Türkiye's energy intensity has been reduced by 20.4% compared to 2011, and the 20% reduction target envisaged in the Strategy Document has been achieved before 2023.

Energy Efficiency 2030 Strategy and 2nd NEEAP has been prepared, which will cover the period 2024-2030, in order to continue energy efficiency studies without slowing down and to follow an energy policy compatible with national climate targets. With 2nd NEEAP, which includes a total of 61 actions in 7 sectors, including buildings and services, energy, transportation, industry, agriculture, start-up and digitalization, and horizontal topics that include actions that concern more than one sector, it is aimed to make an energy efficiency investment of 20.2 billion USD between 2024-2030 and to achieve a cumulative final energy saving of 37.1 MTOE. With the realisation of this target, which corresponds to a 16% reduction in Türkiye's primary energy consumption between 2024-2030, 100 million tons of CO_2 eq. greenhouse gas reduction will be achieved. In order to achieve these targets, public financial resources will be directed to energy efficiency-oriented investments, improvement programs and incentive practices, taking into account the cost-benefit balance. It is also important that non-public financial institutions play a more active role in energy efficiency financing and mobilise foreign/international financial resources.

The emphasis was placed on 2nd NEEAP, which was prepared in the light of the principles and guidelines specified in national policy documents, including the 12th Development Plan, Medium Term Program (2024-2026), Energy Efficiency Law, Türkiye National Energy Plan and National Energy and Mining Policy, so that it complies with the European Union (EU) acquis to the maximum extent, and the energy efficiency targets included in the regulations within the scope of the European Green Deal (EGD) and the Climate Law were also taken into account when determining the targets.

1

Introduction

Factors such as acceleration of industrialization, population growth, expansion of overseas trade, change in consumption habits and development of technology constantly increase energy demand. Growing energy demand creates more pressure on the environment and natural resources and sometimes increases concerns about supply security. As energy demand grows in this way, the dissemination of energy efficiency practices becomes the top priority option to ensure both environmental sustainability and social peace and welfare. Energy efficiency, which expresses the use of energy resources at the highest efficiency at all stages from production to consumption, ensures the reduction of energy consumption without negatively affecting production, service delivery, comfort standards or social welfare through the use of new and innovative technologies. In this respect, energy efficiency is one of the most important components of sustainable development; it is an area that complements other national objectives in the energy sector, supports the transition to a low-carbon economy and contributes to sustainability. Studies are carried out to support energy efficiency practices, which have an important role in the sustainable development of our country, and to disseminate them by integrating them into policies, and these studies are supported and guided by various policy documents.

1.1.

LEGAL BASIS OF THE ENERGY EFFICIENCY 2030 STRATEGY

Energy Efficiency Law No. 5627, published in the Official Gazette No.26510 dated April 18, 2007, aims to increase the efficiency in the use of energy resources and energy through energy efficiency practices. Following the publication of the said Law, coordinated and comprehensive activities were carried out in order to widely popularize energy efficiency, secondary legislation arrangements were made in this context, and various strategy and policy documents were announced to the public.

Following the entry into force of the Energy Efficiency Law, a number of regulations and communiqués were issued to make the practices operational and to disseminate and implement energy efficiency studies in national coordination. Among the mentioned regulations are the Regulation on Increasing Efficiency in the Use of Energy Resources and Energy, the Regulation on Energy Performance in Buildings, the Regulation on Energy Efficiency Audit and the Regulation on Procedures and Principles for Increasing Energy Efficiency in Transportation.

Included within the scope of the Regulation on Increasing Efficiency in the Use of Energy Resources and Energy, which was first published in the Official Gazette No. 27035 dated October 25, 2008 and later amended in the Official Gazette No. 28097 dated October 27, 2011, are energy management and efficiency increasing measures are implemented within a certain range of measures. Procedures and principles regarding the appointment of energy managers in buildings with surface areas larger than a specific area and in industrial enterprises with a certain energy consumption, the establishment of energy management units in organized industrial zones (OIZ) and industrial facilities, supporting Efficiency Enhancing Projects (VAP) in industrial enterprises and voluntary agreements. The aforementioned regulation was amended in the Official Gazette dated July 6, 2022 and numbered 31888, and various changes have been made regarding the implementation in line with the developing needs and sectoral demands.

On the other hand, the Regulation on Increasing Energy Efficiency in Transportation, which came into force by being published in the Official Gazette No. 26901 dated June 9, 2008 and updated with the Official Gazette No. 30762 dated May 2, 2019, determines the measures to be taken to increase energy efficiency in the transportation sector. The Regulation, which addresses many issues from urban transportation infrastructures to zoning plans, from parking lots to monitoring fuel consumption, from public transportation to signaling systems, provides a framework for good practices.

The Regulation on Energy Performance in Buildings came into force after being published in the Official Gazette No. 27075 dated December 5, 2008. The aim of the Regulation, which addresses many topics from architectural design to thermal insulation applications, from efficiency measures for mechanical systems to air conditioning activities, is to regulate the procedures and principles regarding the effective and efficient use of energy and energy resources in buildings, prevention of energy waste and protection of the environment.

The Regulation on Energy Efficiency Audit, published in the Official Gazette dated July 6, 2018 and numbered 30470, aims to prevent waste by using energy effectively, to alleviate the burden of energy costs on the economy, and to audit the obligations of real and/or legal entities within the scope of increasing the efficiency in the consumption of energy resources and energy to ensure environmental sustainability.

In order to implement energy efficiency activities carried out within the scope of national development and energy policies, Law No. 5627 and secondary regulations within a program, Energy Efficiency Strategy (2012-2023) and 1st NEEAP (2017-2023) have been published. The fact that 2023 was designated as the expiration year in the time horizon of both documents has created the need to renew the documents in question.

Energy Efficiency Strategy (2012-2023) is based on the target of reducing Türkiye's energy intensity in 2023 by 20% compared to 2011. According to the energy balance table for 2022 announced, energy supply decreased by 1.0%, primary energy intensity decreased by 6.2% and final energy intensity decreased by 7.9% compared to the previous year. Conformable to these results, before the end of the implementation period of the Energy Efficiency Strategy, Türkiye's energy intensity has been reduced by 20.4% compared to 2011 by 2022, and the 20% reduction target envisaged in the Strategy Document has been achieved.

With NEEAP (2017-2023), it is envisaged to achieve cumulative savings of 23.9 MTOE by 2023 and to invest 10.9 billion USD for this savings. With the activities carried out and the projects implemented in the 2017-2023 period, a total of 24.6 MTOE was saved, and an investment of 8.5 billion USD was made for these savings. The fact that technology costs have decreased by approximately 25% today compared to the period when the 1st NEEAP was prepared, has enabled the savings targeted in the 1st NEEAP to be realised at a lower cost.

The fact that the targets set in both the Energy Efficiency Strategy and NEEAP have been achieved reveals the progress Türkiye has made on the subject. However, in these circumstances where the issue of energy supply security remains important, green growth steps are accelerating within the scope of the fight against climate change, and globally variable energy prices strongly affect economic parameters such as the current account deficit and inflation, the need to carry energy efficiency studies to a further point is still on agenda.

1.2.

RELATIONSHIP OF THE DOCUMENT WITH OTHER PUBLIC POLICY DOCUMENTS

1.2.1. Twelfth Development Plan (2024-2028)

In the Twelfth Development Plan, which was published in the Official Gazette dated November 1, 2023 and numbered 32356 (repeated), was approved on the session of the Turkish Grand National Assembly on October 31, 2023 and covers the period 2024-2028, energy efficiency is emphasized under headings such as green transition, studies to ensure energy supply security, reflection of global developments on Türkiye. It is stated that energy efficiency will play a major role in achieving the 2053 net zero emission goal by contributing to reducing energy demand and ensuring supply security through effective cost management. The Plan states that investments are expected to accelerate in areas such as green transition in industry, sustainable agriculture and transportation, circular economy and green infrastructure and city planning, which are directly related to energy efficiency.

With the prediction that the dissemination of the best available technologies and practices, especially energy efficiency and industrial symbiosis, in small and medium-sized enterprises (SMEs), industrial facilities and OIZs, and that there will be significant advances in energy saving through energy management mechanisms and grid interaction systems in buildings, smart buildings and it is emphasized that the development of certification systems that encourage these will contribute to energy efficiency and security of supply, and that carrying out activities such as raising public awareness in the process of integration of technological progress and innovations and increasing demand side participation in this context will have a positive effect on the dissemination of energy efficiency policies to society. In addition, it was stated that one of the most important elements in ensuring supply security is increasing energy efficiency studies and diversifying financing sources, and increasing access to finance, accelerating R&D studies and developing qualified human resources were included as priority issues during the implementation period of the Plan.

1.2.2. National Energy Plan of Türkiye

Türkiye's National Energy Plan, which was created based on Türkiye's 2053 net zero emission goal and shared with the public on January 19, 2023, includes estimates and projections for the period until 2035. The Plan in question covers the energy demand in the industry, agriculture, transportation sectors, buildings and service sectors, and the supply scenarios created to meet this demand, taking into account the development trends in basic indicators such as population growth, economic growth and fuel prices. In the Turkish National Energy Plan, where energy efficiency is evaluated with the use of advanced technology equipment at different levels, the improvement in energy intensity is predicted to be 51% in the 2000-2035 period.

1.2.3. Medium-Term Program (2024-2026)

In the Medium-Term Program (2024-2026) published in the Official Gazette dated September 6, 2023 and numbered 32301, it is emphasized that investments that expand energy efficiency will be supported within the framework of reconstruction in order to increase the resilience of the infrastructure of the regions exposed to the earthquake disaster that deeply affected Türkiye against disasters. In addition, attention is drawn to the importance of energy efficiency and circular economy in all areas, primarily in the energy, industry, transportation and agriculture sectors, in order to reduce the destructive effects of climate change on a global and regional scale, to ensure energy supply-demand balance, and to disseminate sustainability-oriented policies and practices. Within the scope of the European Green Deal, sectoral road maps will be prepared for companies on issues such as energy efficiency and digitalization and awareness-raising activities will be carried out among the issues included in the document. It is stated in the document that the necessary technical and administrative infrastructure will be developed for the dissemination of Energy Performance Contracts (EPC) in public buildings and public services, and that the Nearly Zero Energy Buildings (nZEB) approach will be disseminated to ensure high energy performance in public buildings, commercial and residential buildings.

1.2.4. Nationally Determined Contribution Within the Scope of Paris Agreement

In November 2022, Türkiye's goals to combat climate change were updated and a new Nationally Determined Contribution was announced. The Nationally Determined Contribution, developed with a sectoral approach (energy, industry, building, transportation, waste, agriculture, land use and change on land use, and forestry) to evaluate the emission reduction potential, includes the reduction policies to be implemented until 2030. The ones related to energy efficiency of these policies are briefly mentioned below:

- To ensure energy efficiency in the energy sector, taking into account feasibility, market conditions and energy security.
- To reduce the carbon footprint of industrial products and increase energy efficiency in the industry sector, to prepare the National Cooling Action Plan, which includes sustainable and natural cooling technologies, innovative financing solutions and higher energy efficiency options.
- To reduce the share of road transportation in the transportation sector, to increase the share of maritime and railway transportation, to encourage electric vehicles by establishing a national fast charging station network, and to develop sustainable transportation approaches in urban areas.
- Implementing practices that consider energy efficiency in existing and new buildings, using district heating solutions in densely populated areas, integrated building design, Building Information Modelling (BIM) and modular construction technologies using the best available techniques throughout the entire planning, construction and life cycle of buildings. To develop and encourage, to increase the use of energy-saving white goods and electrical appliances.

1.2.5. Climate Change Strategy Document (IDES) (2010-2020), Climate Change Adaptation Strategy and Action Plan (2011-2023)

IDES (2010-2020), which defines the studies that should be done as a priority in the relevant sectors within the scope of combating climate change and the measures for adaptation to climate change, was adopted by the decision of the High Planning Council (YPK) dated May 3, 2010 and numbered 2010/8. The document includes evaluating the energy efficiency potential in buildings to the maximum extent, prioritizing building materials and technologies that will ensure energy efficiency, preparing the infrastructure for the Energy Identity Certificate (EIC) application in existing buildings, encouraging thermal insulation and other efficiency-enhancing applications, working with certified energy managers in industry and buildings. Goals such as implementing energy management in accordance with standards, heat recovery options in industry, speed control in engines and encouraging industrial cogeneration systems are also included.

The Climate Change Adaptation Strategy and Action Plan, which includes various goals for Türkiye to adapt to and reduce the effects of climate change, was published in 2012. Since energy efficiency and the fight against climate change are mutually supportive issues, many goals stated in the Plan indirectly include energy efficiency. The Integrated Urban Development Strategy and Action Plan (KENTGES), mentioned in the Plan and carried out under the coordination of the Ministry of Environment, Urbanization and Climate Change, is a comprehensive initiative that aims to increase the livability levels of cities. With this strategy, it is aimed to create environmentally friendly living spaces, encourage sustainable spatial development, support diversified land and housing production, establish sustainable transportation systems, increase energy efficiency, promote environmental awareness and reduce disaster risks.

1.2.6. Energy Efficiency Strategy Document (2012-2023)

With the Energy Efficiency Strategy Document published by YPK in the Official Gazette dated February 25, 2012 and numbered 28215 and covering the years 2012-2023, it is aimed to prevent energy losses and to reduce energy intensity by at least 20% in 2023 compared to 2011 values. Within the scope of the Energy Efficiency Strategy Document, strategic objectives, responsible institutions, actions to be taken and completion times have been designated on a sub-sectorial basis. Türkiye's Energy Efficiency Strategy Document aims to reduce energy intensity and energy losses in the industry and services sectors, reduce the energy demands of buildings and popularize sustainable buildings. On the other hand, it is aimed to find more space for energy efficient products in the market, to increase efficiency in electricity production, transmission and distribution processes, to reduce unit fossil fuel consumption of motor vehicles and to increase the share of public transportation in transportation modes. In the Strategy Document, emphasis is placed on the effective and efficient use of energy in the public sector, as well as strengthening institutional structures, capacities and collaborations, and increasing the use of advanced technology and awareness-raising activities.

1.2.7. National Energy Efficiency Action Plan (2017-2023) (1st NEEAP)

Within the scope of the 1st NEEAP, which was published as YPK Decision No. 2017/50 in the Official Gazette No. 30289 dated January 2, 2018, and covers the period 2017-2023, 55 actions were taken under the headings of buildings and services, energy, transportation, industry and technology, agriculture and horizontal topics. It is aimed to reduce primary energy consumption by 14% in 2023 (savings of 23.9 million MTOE). In order to achieve these savings, a total investment of 10.9 billion USD is envisaged until 2023.

One of the important features of 1st NEEAP is that it is monitored at regular intervals through the NEEAP Data Collection Software, an online platform, and the results are shared on an action basis. The coordination of all public institutions and other relevant stakeholders is provided by the NEEAP Monitoring and Steering Board to carry out energy efficiency-related studies efficiently throughout the country, to follow up and effectively implement the actions specified in the Plan. The realization rate of the actions according to the annual work program, the completion rate and the ongoing work on the action are evaluated in the annual NEEAP Development Reports and shared with the public.

1.2.8. Republic of Türkiye Ministry of Energy and Natural Resources Strategic Plan (2019-2023)

The Ministry of Energy and Natural Resources aims to increase efficiency in all processes from the production of energy to its final consumption, in line with its mission of "providing the highest contribution to the country's welfare by utilizing energy resources and natural resources in an efficient and environmentally friendly manner" and its vision of "a safe future in energy and natural resources". The Strategic Plan (2019-2023) published by the Ministry of Energy and Natural Resources is a document that draws attention to the fact that energy efficiency has gained importance at national and international levels. In the Plan, prioritizing and increasing energy efficiency has been designated as one of the strategic objectives, and within this scope, efforts to increase energy efficiency will be continued, market infrastructure for demand side participation in electricity and natural gas will be established, studies will be carried out to increase public awareness of energy efficiency, and the energy system for electric vehicles will be continued. Four strategic objectives have been designated for planning.

In this context, the successful completion of the 1st NEEAP, increasing the use of LEDs in newly built general lighting facilities, improving their efficiency with the rehabilitation of public electricity generation facilities, preparing the district heating-cooling potential map, creating the electricity and natural gas legislative infrastructure for demand side participation and pilot applications, creating and monitoring the energy efficiency awareness index, carrying out studies on the dissemination of heat pumps in buildings, and carrying out activities regarding the impact of electric vehicles on the electrical system and planning the system infrastructure have been designated as the works to be carried out during the Strategic Plan period.

1.3.

PREPARATION PROCESS OF THE DOCUMENT

1.3.1. Lessons Learned from the 1st Energy Efficiency Strategy Document and 1st NEEAP

During the preparation process of the 1st Energy Efficiency Strategy Document, it was envisaged to set long-term targets and a general framework was designated to achieve these targets. However, it has not been calculated in detail how much savings will be required through the measures to be taken, the activities to be carried out and the policy arrangements to be made. In order to eliminate this deficiency, the amount of investment that will be needed to achieve the targets during the 1st NEEAP studies, the savings that will be provided by these investments and the monetary equivalents of the savings have been calculated separately. However, since improvements in energy efficiency depend on many factors such as the country's general economic performance, growth in energy and electricity consumption, fluctuations in global energy prices, population, and welfare dynamics, it was realised during the implementation period that it is important to conduct forecasting studies to include different scenarios.

Another critical issue observed during the 1st NEEAP period is that legislative changes are needed to implement some actions and activities at the desired level. It may not be enough for the relevant public institutions to have a positive attitude towards the necessary regulations, and energy efficiency may not yet be considered among the top priority issues in the regulations to be made in many areas and headings. Taking this into consideration in 2nd NEEAP studies, a more effective working style that involves public institutions more in the process has been adopted.

Directing limited resources to priority areas and needs arising from extraordinary developments, especially disasters, was a condition that occurred during the 2nd NEEAP period. In this context, it was comprehended during this process that it would be beneficial to consider energy efficiency as an independent policy heading by the institutions that implement them in order to be among the priority issues in resource allocation. It has been evaluated that prioritising energy efficiency, especially by large-budget investor organizations and institutions that have the power to direct energy use through provincial organizations, plays a key role in using existing resources effectively and with a high multiplier effect. In addition, it has been observed that solutions based only on incentives and tax exemptions and approaches that mobilise public resources alone will not be sufficient to provide the financing required for a major transition. It has been concluded that administrative, human and financial capacities need to be strengthened in order to combine private sector financing and foreign credit resources with energy efficiency investments and well-designed energy efficiency programs.

One of the issues whose importance was comprehended more in the years when the 1st Energy Efficiency Strategy Document was put into practice and relatively less in the implementation period of the 1st NEEAP is that non-public actors play a critical role in the dissemination of energy efficiency measures and their response in different layers of the economy. In order to achieve the targets foreseen, especially in the industry and service sectors, determining the difficulties experienced by end users and the obstacles encountered in practice from the very beginning is a prerequisite for the successful implementation of the measures.

A process is being experienced in which the concepts of "green transition" and "digital transition" are discussed together, and advanced technological solutions are used more in all sectors, from industry to agriculture, to increase optimization and use resources efficiently. Although 1st NEEAP actions refer to R&D investments and innovative technologies, it is observed that digital technological solutions support energy efficiency improvements in many areas and topics. It became more evident during the implementation period of the 1st NEEAP that developments in this context should be examined under a separate heading and integrated into energy efficiency policies.

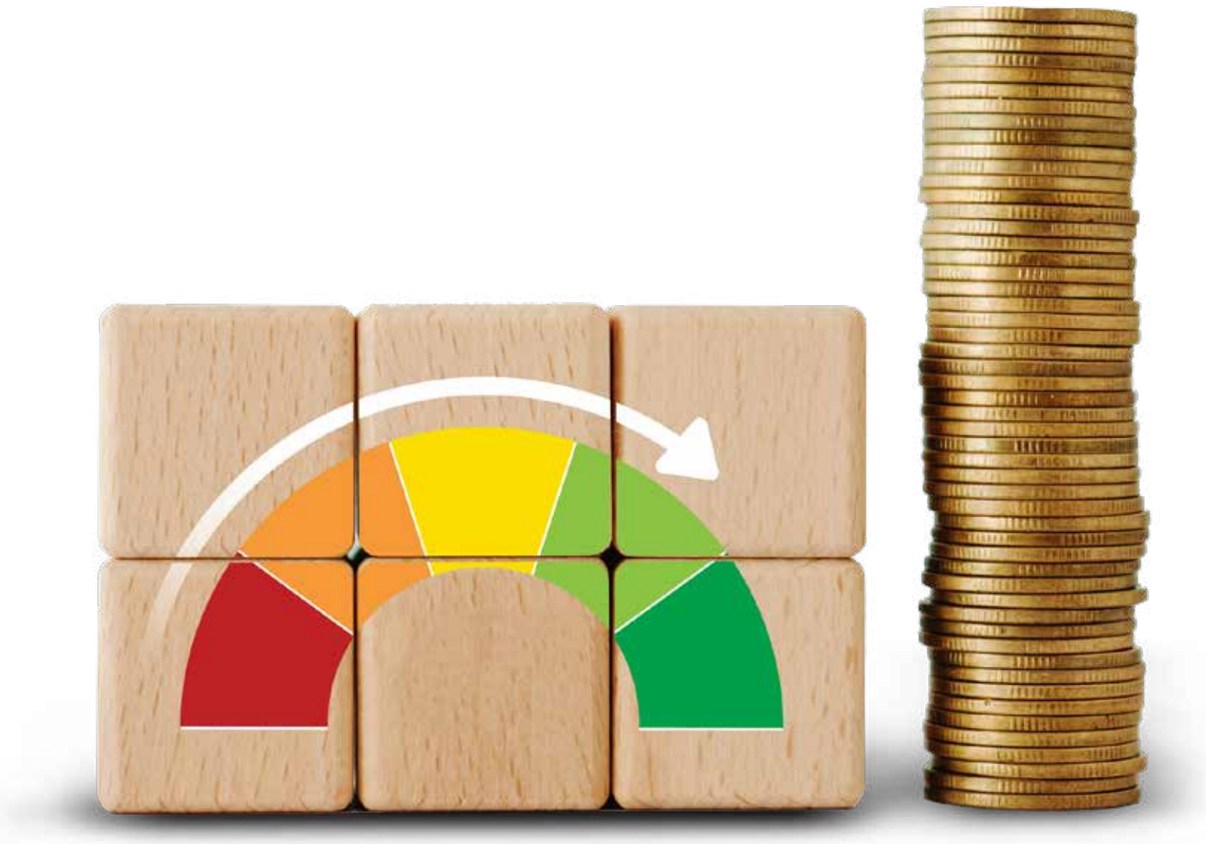
1.3.2. Principles Paid Regard to During Preparation Period of Energy Efficiency 2030 Strategy and 2nd NEEAP

Energy Efficiency 2030 Strategy and Preparatory work for 2nd NEEAP (2024-2030) started in 2022 in the light of the lessons learned and experiences gained during 1st NEEAP period. From the point of view of the determination that a successful energy efficiency policy requires collective actions and coordinated attitudes, 2nd NEEAP studies spanned a long period of time, and workshops were organized and written opinions were compiled in several different rounds in order to align public institutions towards common goals. As a result of bilateral and multiple meetings, more reasonable targets have been designated for actions and activities that are difficult to achieve by public institutions or that are expected to be spread over a long period of time.

In order to ensure that the subject is adopted by a wider audience and to evaluate all possible perspectives, the opinions of representatives from the public sector as well as private sector companies, non-governmental organizations and universities were consulted, considering that the implementation of its applications is the responsibility of many stakeholders. In this context, workshops for 10 different topics (start-up, agriculture, transportation, buildings, energy, municipal services and heating-cooling, industry, energy management and financing) were organized for different sectors/fields and in which a very wide stakeholder participation (approximately 1400 people) were held. In these workshops, the opinions and suggestions of the participants were listened to, action and activity suggestions were received specific to sectoral perspectives, and all these suggestions were grouped, classified, and consolidated under certain headings.

In the final workshop held in the following period, the consolidated action and activity suggestions were discussed again in focused groups with high technical competence, and the findings were organised to form the basis of the Action Plan. Finally, the objectives, goals, actions to be taken for these goals and activities under these actions were identified by taking into account Türkiye's development priorities, economic and energy policies, technological capabilities, socio-cultural dynamics and international developments.

Scenarios were created that are compatible with Türkiye's other policy documents, taking into account national income and energy growth estimates, but not limited to these, and also evaluating net zero targets, and modelling was carried out within three separate scenarios. During the modelling studies, sectoral projections were made using the top-down method, based on the last 20 years of energy consumption figures and energy efficiency performance improvements of the sectors. On the other hand, considering the possible effects of the actions, both sectoral and inter-sectoral productivity development potentials were evaluated with the bottom-up method. The savings to be achieved within the scope of the envisaged investments and programs, the financial resources to be mobilised for these savings, the financial provisions of the savings, the annual and cumulative values of these provisions over the years, and the amounts to be spent to achieve one unit of energy savings were calculated separately.



2

Assessment of the Current Situation

2.1. GENERAL SITUATION / ENERGY EFFICIENCY DEVELOPMENT

2.2. SECTORAL SITUATION

2.1.

GENERAL SITUATION / ENERGY EFFICIENCY DEVELOPMENT

During the 2000-2022 period, Türkiye's GDP exhibited a continuous increase, except for 2001 and 2009, and grew by 188.6% compared to 2000. The average growth rate on an annual basis was 4.9%. Primary energy consumption, which is very sensitive to economic growth dynamics, increased by 98.6% in the said period and showed a lower increasing trend compared to GDP (Figure 1). Therefore, the amount of energy used to produce one unit of added value decreased at the beginning and end of the mentioned period.

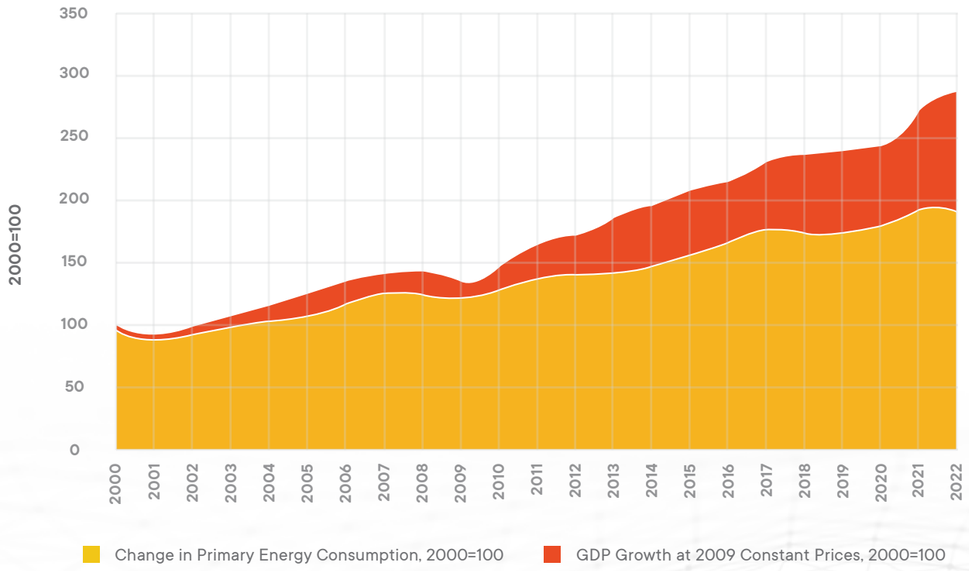


Figure 1. Change in GDP and Primary Energy Consumption by Years

The primary energy intensity index, which is one of the indicators that allow robust comparison in monitoring energy efficiency developments, decreased by 6.2% in total in 2022 compared to previous year, with the measures implemented, thus providing an average improvement of 1.7% on an annual basis (Figure 2).

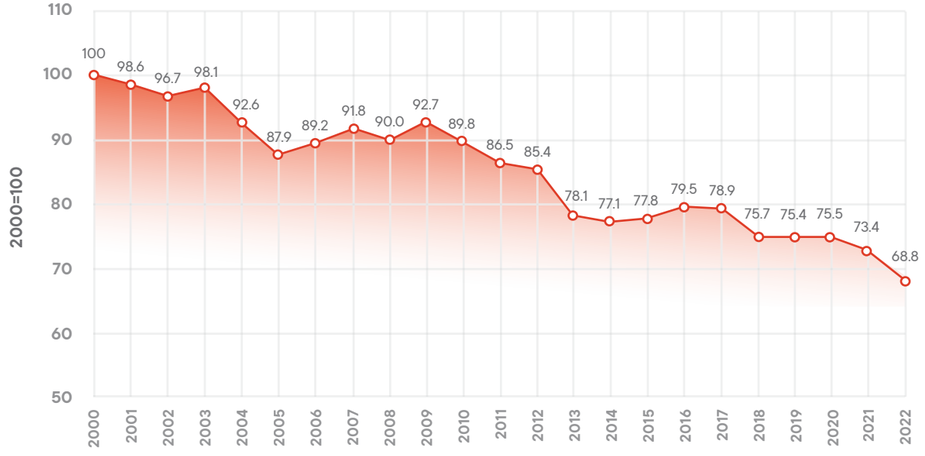


Figure 2. Change in Primary Energy Intensity Index

In the final energy intensity index, however, there has been an improvement of 7.9% in 2022 compared to the previous year and an average improvement of 1.8% in the last 22 years (Figure 3).

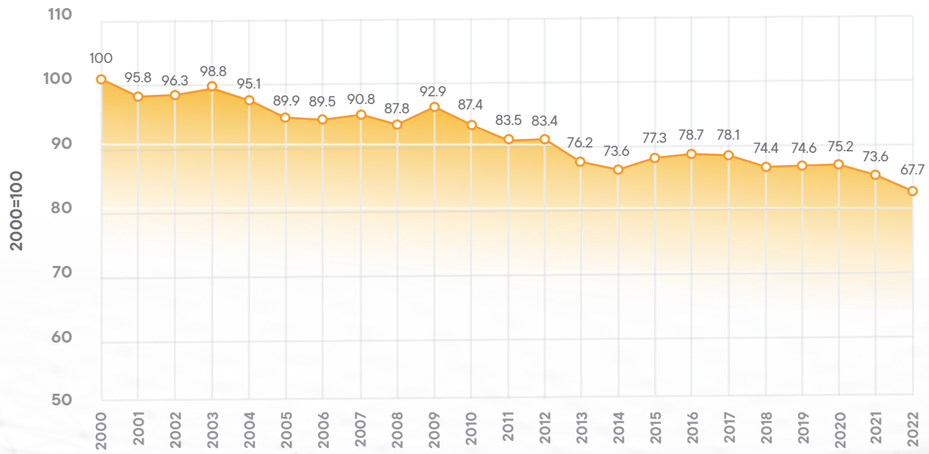


Figure 3. Change in Final Energy Intensity Index

Türkiye's total final energy consumption in 2022 increased by 96% compared to 2000 and reached 120.4 MTOE. The buildings and services sector had the highest share in total final energy consumption with 32.6%. The share of energy consumed in the industry sector was 31.6%, and the share of the transportation sector was 25.5%. In the 2000-2022 period, the final energy consumption of the industry sector increased by an average of 2.3% on an annual basis, the final energy consumption of buildings and services sector increased by 3.2%, and the final energy consumption of the transportation sector increased by 4.4%. The average annual increase rate of total final energy consumption was 3.1% (Figure 4).

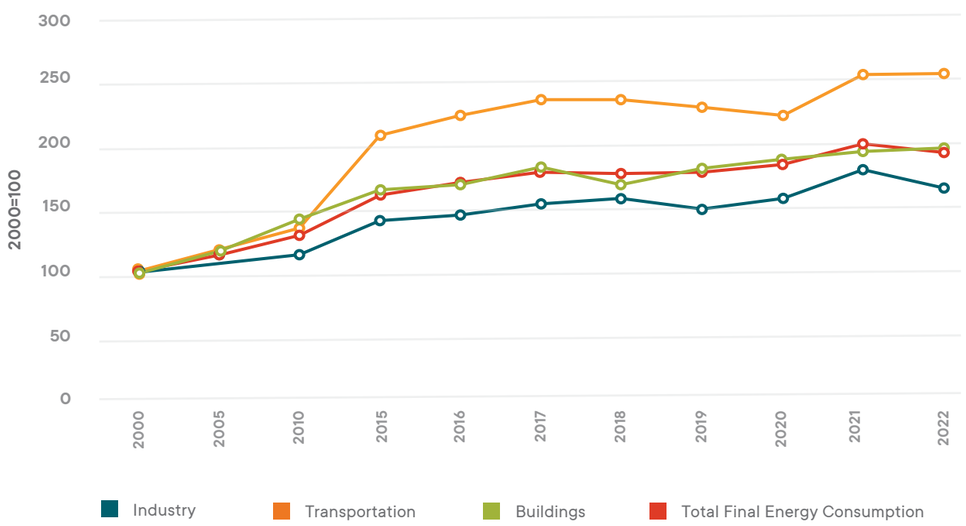


Figure 4. Final Energy Consumption Index on a Sectoral Basis

Thanks to the studies conducted within the scope of 1st NEEAP, the projects and programs carried out in the 2017-2023 period, a total of 5.95 MTOE energy savings were achieved. Since the effect of each of these savings continued in the following years, the total cumulative energy savings amounted to 24.6 MTOE. Cumulatively, 11.4 MTOE energy savings were achieved in the industry sector, 7.5 MTOE in buildings, 0.5 MTOE in the agricultural sector, 0.7 MTOE in the energy sector, 0.2 MTOE in horizontal topics and 4.2 MTOE in the transportation sector (Figure 5)[1]. A total of 8.47 billion USD was invested to realise these savings.

[1] 2023 predictions are estimated data. Final calculations will be made following the publication of the 2023 Energy Balance Table on November 15, 2024.

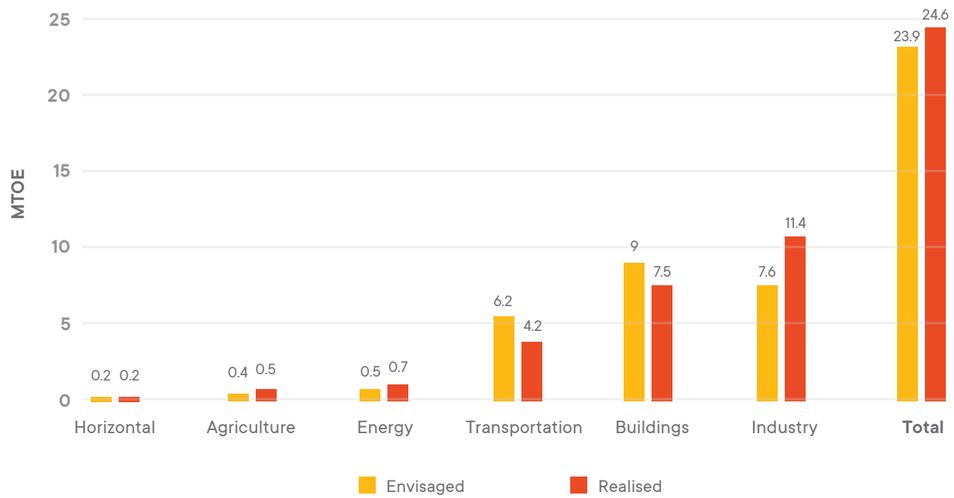


Figure 5. Cumulative Energy Savings Envisaged and Realised for the Period 2017–2023

According to the International Energy Agency (IEA) data, while per capita energy consumption in Türkiye was 1.85 TOE in 2022, energy intensity was 0.132 TOE/thousand 2015$[2]. These values were recorded as 3.75 TOE and 0.097 TOE/thousand 2015$ in the Organization for Economic Development and Cooperation (OECD) countries, and as 3.13 TOE and 0.086 TOE/thousand 2015$ in EU countries. All these figures indicate that Türkiye still has a significant potential in the field of energy efficiency to reach the averages of developed countries (Figure 6).

[2] Based on 2015 USD series.

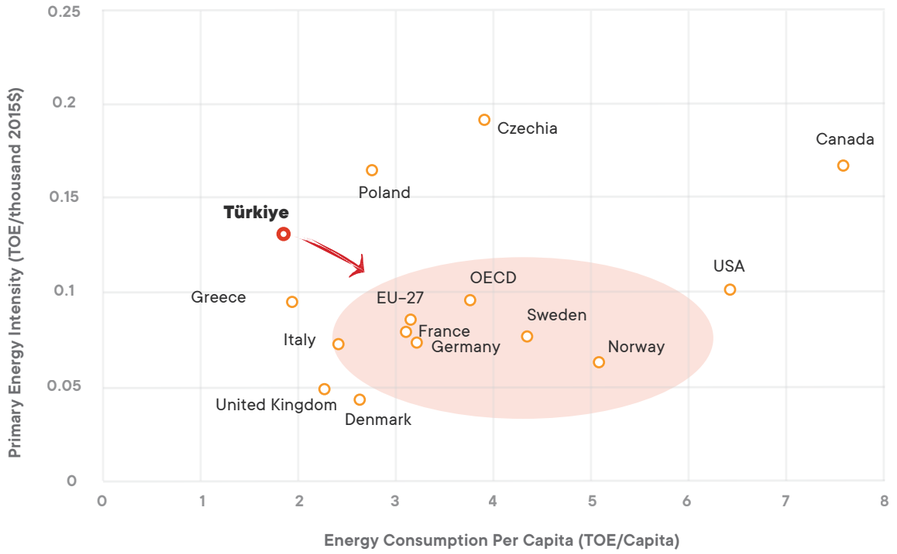


Figure 6. Comparison of Primary Energy Intensity and Energy Consumption Per Capita by Countries

2.2.

SECTORAL SITUATION

Trends in the global economy necessitate some changes in the production and consumption of energy, and energy efficiency activities give weight to energy and economic policies as a powerful policy tool in terms of energy supply security, combating climate change and sustainability issues. It is seen that in developed economies, energy efficiency studies have become a policy component taken into account in all decision-making processes.

Transforming energy efficiency from awareness to consciousness and then into behavior and ultimately evolving into a permanent cultural feature throughout society is a multidisciplinary struggle that requires long-term and joint effort. On the other hand, there is a significant financial need to sustain the gains achieved during the 1st NEEAP period and to ensure the transition in energy. There are support mechanisms such as VAP, Voluntary Agreements and 5th Region Incentives to reduce the financial cost burden of the private sector in line with energy efficiency studies. The support currently provided to

the manufacturing industry have been expanded to include agriculture, service sectors and buildings in line with the Economic Reform Package.

In order to adopt a policy approach in which energy efficiency is prioritized in decision-making processes, to create an energy efficiency culture throughout society and to meet the necessary financing needs in energy transition, the strategic goals "SG-1: To make energy efficiency a policy component taken into account in all decision-making processes, within the framework of the perspective of strengthening energy supply security, achieving the net zero emission goal and increasing total factor efficiency", "SG-2: To increase awareness-raising activities for all segments of society and to strengthen cooperation with external stakeholders in order to ensure that energy efficiency is evaluated within a social mobilization approach" and "SG-3: To support the investments related to green transition and increase in energy efficiency and to accelerate the transition with innovative financing tools" have been designated within the scope of the Energy Efficiency 2030 Strategy.

2.2.1. Building and Services

Final energy consumption in buildings and services sector, which has been developing rapidly in recent years in our country, increased by 30.0% between 2012 and 2022, which is the Energy Efficiency Strategy Document implementation period, from 30.3 MTOE to 39.2 MTOE. This area, where the average annual increase in energy demand was recorded as 2.6%, had a share of 32.6% in final energy consumption in 2022 (Figure 7).

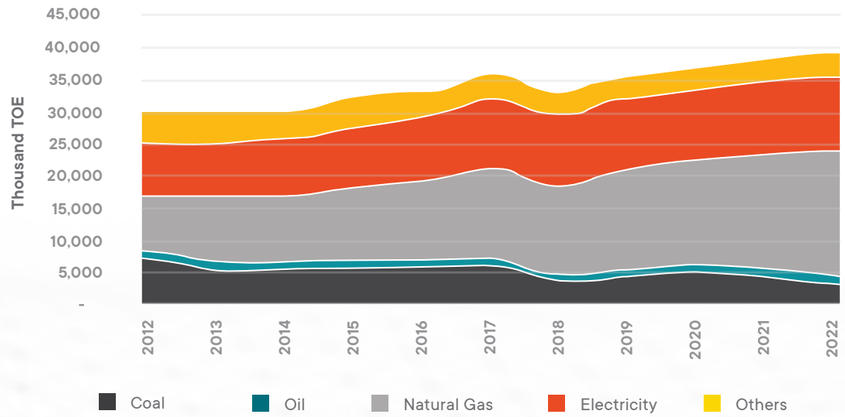


Figure 7. Development of Building and Services Sector Energy Demand on the Basis of Energy Sources in the 2012–2022 Period

The number of households, which was 19.8 million in 2012, increased by 36% and reached 26.9 million by 2022. 87% of the building stock, which will reach approximately 9.6 million by 2022, will be residential buildings. The increase in building demand due to increasing population and decreasing average number of households has resulted in the construction of an average of 106 thousand new buildings annually, according to building use permit statistics. There is a significant potential in the rapidly growing and transforming building stock for the efficient use of energy and the expansion of on-site production.

In order to achieve energy transition in buildings and services sectors, it is important to develop energy efficiency-oriented policies and implement measures in all processes from the preparation of settlement plans to the design of buildings, selection and use of heating, cooling and air conditioning systems.

In recent top policy documents, especially the 11th Development Plan covering the period 2019-2023, efficient use of energy, alleviating the burden of energy costs on the economy and protecting the environment have been prioritized policy areas, and goals have been identified in relation to many other policy documents and regulations transition in buildings and services sectors.

In the 12th Development Plan, the main measures for or related to energy efficiency in buildings are expressed as follows: Continuing the practices to make public buildings more efficient, disseminating energy efficient buildings supported by renewable energy in order to accelerate the energy conversion of buildings, EPC in buildings, dissemination of alternative methods such as the energy service companies (ESCO) model and the use of the Credit Guarantee Fund (KGF), minimizing the possible negative effects of tourism activities on the environment by taking energy efficiency into account, enabling building owners to monitor building performance including energy efficiency, dissemination of smart building designs, dissemination of high energy efficient buildings, improvement and development of nZEB criteria, raising social awareness about nZEB applications, dissemination of the National Green Certificate System for certification of green buildings and green settlements, making National Green Building Certification System (YeS-TR) suitable for international use, supporting investments that will encourage green transition and increase energy efficiency while increasing the resilience of infrastructures in earthquake zones against disasters. With the works carried out under 12 actions in the implementation period of the 1st NEEAP between 2017 and 2023, 1.8 MTOE, cumulatively 7.5 MTOE energy savings have been achieved in the buildings and services sector, and the following developments came to the fore:

- The definition of nZEB was added to the legislation and it became mandatory for new buildings to be designed as nZEB.
- A goal of 15% savings has been set for 2,400 public buildings and campuses, which are obliged to appoint energy managers and whose total energy consumption is 1 MTOE.
- Central energy management units have been established within governorships in order to carry out energy efficiency-related activities more effectively in public institutions and organizations.
- Awareness-raising training courses were organized for personnel in all Ministries.
- EPC has been defined to repay energy efficiency investments in public buildings from savings.
- The Energy Efficiency Project in Public Buildings, supported by the World Bank and with a budget of 200 million dollars, has been initiated and the implementation phase has begun.
- There has been an increase in the amount of loans to be granted for buildings with Class A and B EIC.
- In order to promote energy efficiency in existing buildings, amendments have been made to the Income Tax Law, Stamp Duty Law and Fees Law.
- Thermal Insulation Campaign in Residences was announced and insulation loans with a maturity of 60 months and an interest rate of 0.99 were started to be provided by Ziraat Bank, Vakıfbank, Halkbank and Ziraat Katılım Bank.
- YeS-TR was established, and the Turkish Environment Agency was appointed as the evaluation agency.
- Within the scope of international collaborations, the Technology Atlas containing sector and material information about buildings was published, the heating and cooling demand map was prepared and the district heating potential was designated, and training, survey, feasibility and equipment purchase support was provided to support the energy efficiency and renewable energy investments of municipalities and universities.

In order to carry forward the gains achieved, the strategic goal of " SG-4 To carry out a comprehensive improvement program in which the public will play a leading role in reducing carbon emissions with energy efficient solutions and approaches in buildings" was designated within the scope of the Energy Efficiency 2030 Strategy.

2.2.2. Industry

The fact that the industry sector in Türkiye has an energy-intensive structure compared to many equivalent countries causes energy costs to be a component that directly affects competitiveness, especially in facilities in the manufacturing industry. The search for emission reduction intensified within the scope of combating climate change and new practices brought to the agenda within the scope of the EGD strengthen the sector's efforts to reduce energy consumption and improve energy efficiency. Final energy consumption in the industry sector increased by 27.4% in the 2012-2022 period, from 29.9 MTOE to 38.1 MTOE. The average annual increase in energy demand was recorded as 2.4%, and the sector's share in final energy consumption was 31.6% in 2021 (Figure 8).

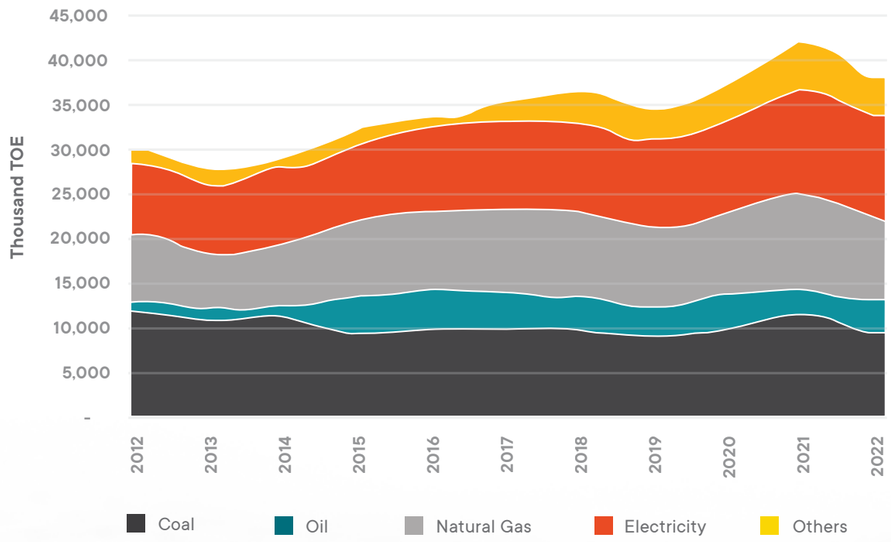


Figure 8. Development of Industry Sector Energy Demand on the Basis of Energy Sources in the 2012–2022 Period

Within the scope of the statement "Energy efficiency will be increased in the manufacturing industry" in 11th Development Plan; establishing a support mechanism to replace inefficient electric motors used in industry with efficient ones, disseminating cogeneration systems in large industrial facilities that use heat, supporting energy efficiency projects with competitions in order to promote and disseminate exemplary energy efficiency applications, and supporting projects with high savings potential by improving VAP application processes are defined as priority areas.

In the 12th Development Plan, the main measures aimed at or related to energy efficiency in industry are expressed as follows: Increasing support for energy efficiency practices of enterprises, supporting technological investments with high energy efficiency and savings potential that contribute to facility and process optimization, supporting green industrial enterprises. certification and support of competent conversion consultants, inclusion in the European Energy Labelling Product Database in the electrical equipment industry.

In the Energy Efficiency Strategy Document covering the period 2012-2023, reducing energy intensity and energy losses in the industry and services sectors was designated as one of the strategic objectives.

With the work carried out under 7 actions in the implementation period of the 1st NEEAP between 2017 and 2023, 2.5 MTOE and a cumulative 11.4 MTOE energy savings were achieved in the industry sector, and the following developments came to the fore:

- With national and international collaborations, studies have been carried out on topics such as process efficiency, energy management, industrial symbiosis, life cycle assessment, and creation of green OIZs.
- The Energy Saving Potential Map in Industry has been prepared and it has been designated that there is an energy efficiency investment potential with an average payback period of 2 years and a monetary value of more than 5 billion TL.
- Türkiye Waste Heat Potential Assessment Project was carried out with the support of the World Bank. According to the project results, it has been designated that there is a waste heat potential of 1,600 kTOE (1,000 TOE) in the industry sector, which requires an investment of approximately 1.37 billion USD, and a cogeneration potential of 2,515 Mwe, which requires an investment of 2 billion USD. It is estimated that by making the necessary investment, a total annual savings of 1.6 billion USD can be achieved in the industry.
- Within the scope of VAP support, a total of 450 applications were made in the 2009-2016 period. The number of applications increased by 96% in the 2017-2022 period, reaching 884. The investment amount of the completed and ongoing projects exceeded 1.1 billion TL (approximately 147 million USD, taking into account the relevant year's exchange rates).

- Physical space, machinery-equipment infrastructure and technical capacity have been established for Ankara, Bursa, Konya, Kayseri, Gaziantep, Mersin and Izmir Model Factories. Within the scope of learn-transform activities, training was provided to more than 500 businesses.
- Cogeneration efficiency certificates were given to 88 industrial facilities within the scope of unlicensed production in the electricity market. Businesses save 25% to 30% from the primary source they use.
- Energy Management Units were established in 85 OIZs in accordance with the ISO 50001 standard and training on energy management was provided to more than 200 OIZ personnel.
- The SME Energy Efficiency Support Program was created, and energy audit expense support of up to 22,500 TL and efficiency-enhancing activity support planned as a result of the survey up to 360,000 TL were provided for the green transition of SMEs.
- Projects on Development of National Life Cycle Assessment Database and Promotion of Energy Efficient Engines in SMEs in Türkiye were carried out. The Industrial Internet of Things Project, which Accelerates the Digital Transformation of SMEs, was launched and digitalization road maps for businesses were prepared through studies carried out with 135 SMEs.

In order to carry forward the gains achieved, within the scope of the Energy Efficiency 2030 Strategy, the strategic goals "SG-5: To increase the use of energy efficient equipment, systems and technologies, especially digital applications and innovative technologies, and to support their development primarily with domestic opportunities", "SG-6: To increase projects and investments for energy efficiency in a way that will encourage the green transition efforts of the industry sector" and "SG-9: To ensure the market transition of environmentally friendly, circular natured and energy efficient products" have been designated.

2.2.3. Transportation

The transportation sector, which has the third largest share in our country's final energy consumption, is the sector with the fastest growing energy demand in the last 20 years, with an average annual growth rate of 4.5%. With the rapid integration process in the world, innovations in technology, concentration of the population in cities and economic development, the demand for quality, safe and comfortable transportation services have increased and as a result, the transportation sector has become a rapidly growing and dynamic sector. These developments in the transportation sector have made it necessary to use energy efficiently.

The final energy consumption of the transportation sector increased by 58% in the 2012-2022 period, from 19.5 MTOE to 30.5 MTOE. The average annual increase in energy demand was recorded as 4.7%, and the sector's share in final energy consumption was 25.3% in 2022. In terms of transportation modes, the highest share in total energy consumption belongs to highways with 94%, and almost all of the consumption consists of oil products. In terms of energy consumption, after highways, airways get in line with 3.6%, maritime with 1.2% and followed by railways with 0.8% (Figure 9).

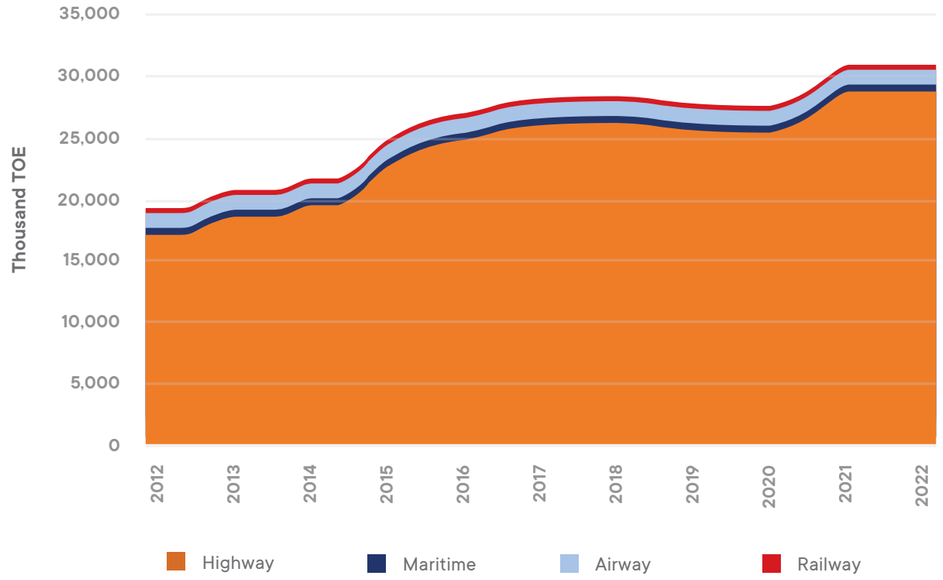


Figure 9. Development of Transportation Sector Energy Demand by Mode in the 2012–2022 Period

In the 11th Development Plan, for the transportation sector, making the most of Türkiye's geographical advantage, developing intermodal and multimodal applications, increasing the share of railway and maritime transportation, providing a fast, flexible, safe, reliable and integrated transportation system. By establishing the transportation system, it is aimed at reducing logistics costs, facilitating trade and increasing the competitiveness of our country.

In the 12th Development Plan, the main objectives are to prioritize railway and maritime transportation in order to minimize environmental impacts and costs in the transportation and logistics sector and to increase energy efficiency, and to create cost-effective, clean and energy-efficient sustainable systems in urban transportation. Increasing the number of green ports on the basis of digitalization and energy efficiency, as well as the further development of highways with new smart roads suitable for electric vehicles, smart transportation systems and autonomous systems, have come to the fore as focused actions.

In the Energy Efficiency Strategy Document (2012-2023), reducing the unit fossil fuel consumption of motor vehicles, increasing the share of public transportation in road, sea and railways and preventing unnecessary fuel consumption in urban transportation were designated as one of the strategic objectives.

In the implementation period of the 1st NEEAP between 2017 and 2023, 1.2 MTOE, cumulatively 4.2 MTOE energy savings were achieved in the transportation sector, with the works carried out under 9 actions, and the following developments came to the fore:

- Grant support was provided to local governments for the construction of bicycle paths, green walking paths, environmentally friendly streets and noise barriers. The number of smart stops in 30 metropolitan municipalities exceeds 11 thousand and the length of existing bicycle paths exceeds 2 thousand km.
- Special Consumption Tax and MTV discounts have been applied to popularize electric and hybrid vehicles. In order to understand the effects of electric vehicles on Türkiye's distribution network, four different distribution networks were examined, and it was analyzed that there is sufficient capacity to integrate 10% electric vehicles in the total passenger vehicle stock by 2030.
- Within the scope of strengthening railway transportation, railway construction and renewal, signaling and electrification works continued.
- For the purposes of maximizing the environmental sensitivity of port enterprises operating in Türkiye, standardizing them, and developing the port quality management system, 20 ports have been adapted to the "Green Port" criteria and certified.
- The amount of support to be given for newly built conventional ships to replace the scrapped ship has been increased from 1 to 1.5 times the scrap price per ton, and to 2.5 times for those who will use an alternative environmentally friendly energy source.

In order to carry forward the gains achieved, the strategic goal "SG-7: To ensure that energy efficient solutions and applications are given priority in the transportation sector in order to balance the high energy use caused by increased mobility, and to popularize multi-modal and integrated transportation systems" was designated within the scope of the Energy Efficiency 2030 Strategy.

2.2.4. Agriculture

In recent years, due to the increase in the frequency and severity of natural disasters caused by climate change, drought, sudden rainfall and floods disrupt crop patterns and cause volatility in agricultural yields, as well as disruptions in the food supply chain due to epidemics and unusual developments, negatively affect the agricultural sector on a global scale. Due to its increasing population and strong tourism activities, Türkiye's need for agricultural products and food is constantly increasing. In this context, carrying out agricultural activities in an effective, efficient and sustainable manner is of great importance in ensuring our country's food supply security.

The final energy consumption of the agricultural sector increased by 34% in the 2012-2022 period, from 3.8 MTOE to 5.0 MTOE. The average annual increase in energy demand was recorded as 3.0%, and the sector's share in final energy consumption was 4.2% in 2022 (Figure 10).

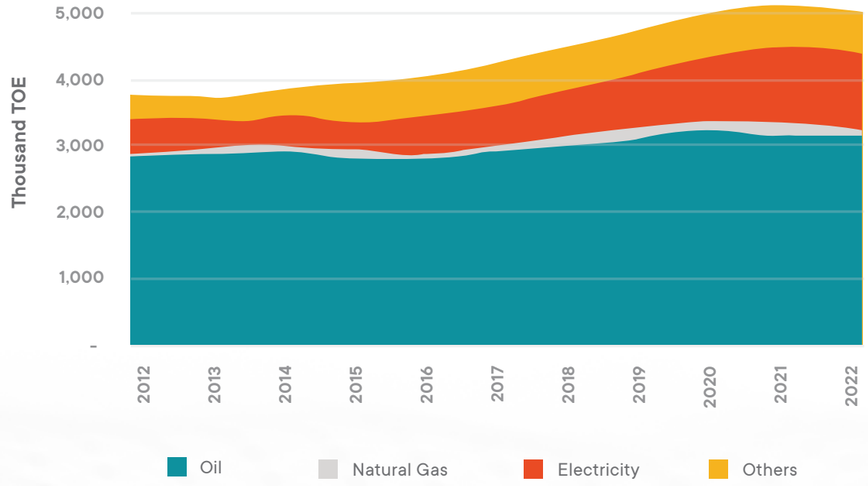


Figure 10. Development of Agricultural Sector Energy Demand on the Basis of Energy Sources in the 2012–2022 Period

In the 11th Development Plan, an effective agricultural sector that is environmentally, socially and economically sustainable, that provides adequate and balanced nutrition for the people of the country, has increased its international competitiveness with a production structure that considers the supply and demand balance, is based on advanced technology, has solved infrastructure problems, is organized and has high efficiency. It has been stated that the aim is to create the agricultural sector and the agricultural sector has been defined as a priority development area.

In the 12th Development Plan, actions related to energy efficiency in the agricultural sector are mainly grouped under the heading of irrigation: Dissemination of modern irrigation systems such as water-saving sprinkler and drip irrigation for the efficient use of water in agriculture, pricing of water according to methods based on the amount of water used, alternatives in agricultural irrigation. Carrying out R&D activities for harvesting rainwater to increase the use of water resources, bringing treated wastewater to irrigation water quality and desalinating seawater for irrigation, R&D for the use of remote sensing technology and Geographic Information System (GIS)-based techniques in creating irrigation programs, activating automation and decision support systems in the existing irrigation facilities in the enterprise in order to carry out the activities and use irrigation water efficiently.

In the implementation period of the 1st NEEAP between 2017 and 2023, energy savings of 112 kTOE and a cumulative 520 kTOE energy savings were achieved in the agricultural sector with the works carried out. The biggest contribution to the energy savings realized was the transition to modern irrigation systems. The following developments have come to the fore in the sector:

- Low-interest loans and grants were provided for the purchase of tractors, combine harvesters, modern pressurized irrigation and equipment.
- Within the scope of the renewal of irrigation facilities, 55 irrigation facilities with a total area of 166 thousand hectares were put into service. Additionally, more than 6 million hectares of land consolidation has been carried out.
- 73 million TL grant support was given to 100 projects for the use of renewable energy resources in agricultural production structures (greenhouses, barns, sheepfolds, coops, etc.). In addition, studies have been carried out to establish Specialized (Greenhouse) Organized Industrial Zones Based on Geothermal Sourced Agriculture.
- Within the scope of the energy consumption inventory study in the aquaculture sector, 164 enterprises with a total production capacity of 9 thousand tons per year were examined. It has been designated that the facilities consume approximately 5 million kWh of electricity annually. It was specified that 160 fishing facilities were located on land and the largest electricity consumption items of the facilities came from pumps.
- More than 10,000 farmers were trained to combat agricultural drought and enable efficient irrigation.
- In order to analyze the performance of State Hydraulic Works (SHW) pump stations by using the best available technologies that provide energy efficiency while delivering water in the process from the source to the agricultural product and encouraging low-pressure drip irrigation methods, 8 stations belonging to SHW in the provinces of Bursa, Konya, Adana, Hatay and Isparta measurement studies were carried out at the pump station.

In order to carry forward the gains achieved, the strategic goal “SG-8: To implement energy efficient agricultural practices compatible with the objectives of increasing the competitiveness of the agricultural sector, improving agricultural irrigation efficiency and making the food supply chain sustainable” was designated within the scope of the Energy Efficiency 2030 Strategy.

2.2.5. Energy

The increase in population along with economic activities has caused Türkiye’s energy consumption to increase rapidly. Primary energy supply, which was 117.3 MTOE in 2012, increased by 40.4% in ten years to 157.8 MTOE. In the 2012-2022 period, electricity consumption increased from 239.4 TWh to 328.3 TWh, and natural gas consumption increased from 45.3 billion m^3 to 52.5 billion m^3.

The loss rate in the electricity distribution network, which was approximately 20% in the early 2000s, was decreased to under 11% in 2022 with the regulatory activities of EMRA and the work carried out by electricity distribution companies. In addition, distributed generation facilities established for self-consumption also reduce network losses. The unlicensed solar energy installed capacity, which was 2,979 MWe in 2017, increased to 7,956 MWe in 2022.

The 11th Development Plan gave an important place to energy policies and designated the provision of continuous, high-quality, sustainable, safe and bearable energy supply as one of the main objectives of the Plan period.

Energy efficiency along with new and innovative technologies are extensively included in the independent title of the 12th Development Plan regarding energy. Prominent actions, different

from those mentioned in the previous subsections, are expressed as follows: Developing legislation to ensure demand side participation and encouraging demand side participation, completing studies on heat market legislation, installing district heating/cooling systems and heat pumps in technically and economically suitable places expanding its use, carrying out studies to increase geothermal sourced heating, increasing our country's capabilities and competitiveness in the field of energy technologies, strengthening its export potential, and developing long-term financing opportunities, especially the credit guarantee mechanism for energy efficiency projects.

In the Energy Efficiency Strategy Document (2012-2023), one of the strategic objectives is designated as "increasing efficiency in electricity production, transmission and distribution, reducing energy losses and harmful environmental emissions".

According to the results of the Türkiye National Energy Plan, electricity consumption is expected to reach 510.5 TWh by 2035. In order to effectively utilize financial resources, the increase in electricity demand must be carefully managed, and an approach that does not only focus on the supply side but also directs the demand side through energy efficiency must prevail.

With the works carried out under 10 actions in the implementation period of the 1st NEEAP between 2017 and 2023, 190 kTOE, cumulatively 748 kTOE energy savings were achieved in the energy sector and the following developments came to the fore:

- Network investments aimed at reducing losses in electricity distribution, combating illegal electricity use, expanding distributed generation, etc. With the efforts, the loss rate, which was 13.42% in 2016, was reduced to under 11% by 2022.
- Applications for the installation of LED fixtures in general lighting facilities have begun and more than 80,000 LED applications have been made by electricity distribution companies.
- The legislative infrastructure for demand side participation has been completed, enabling electricity consumers with flexible or shiftable loads to participate as players in ancillary services and balancing power markets.
- The first field installations within the framework of the National Smart Meter Systems Project were carried out in Samsun.
- With the regulations made to provide consumers with comparable and more detailed billing information on electricity bills, access to past period consumption information such as daily energy consumption average and the current year and the previous calendar year has been provided.

- Thermal power plants with an installed power of 20 MW and above are obliged to conduct surveys to evaluate their waste heat primarily in district heating systems. VAPs were developed by carrying out comprehensive energy audits in thermal and hydraulic power plants affiliated with the Electricity Production Joint Stock Company (EÜAŞ).
- Cost-benefit analyzes and heat mapping studies for the dissemination of efficient heating and cooling systems have been completed.
- Energy audits were carried out at compressor stations in the natural gas transmission system and savings opportunities were analysed.

Within the scope of the New Energy Efficiency Strategy Document, the strategic goal "SG-10: To increase efficiency throughout the entire value chain of energy and reduce losses in production, transmission and distribution" was designated.

3

Global and National Factors Supporting Energy Efficiency

3.1.

CLIMATE CHANGE

Since the mid-18th century, which was the beginning of the industrial revolution, the global average temperature has increased due to the impact of anthropogenic activities such as rapid population growth, industrial production growth, changes in land use, deforestation and intensive use of fossil fuels for energy production. With the rise in global temperature, there has been a dramatic increase in the frequency and severity of climatic events, especially natural disasters such as water scarcity, drought, fire, excessive rainfall and floods, all over the world in recent years. Türkiye is located in the Mediterranean Basin, a region sensitive to the negative effects of climate change, and therefore feels the impact of climate change intensely. In particular, changes in the rainfall regime affect agricultural production, and natural disasters threaten both human and ecosystem health.

Within the scope of combating and adapting to climate change, energy efficiency is one of the most effective ways to reduce greenhouse gas emissions. With optimized energy use, it is possible to reduce final energy consumption and, accordingly, greenhouse gas emissions. On the other hand, energy efficiency and demand management measures also reduce the vulnerability of the energy sector to the effects of climate change. Energy efficient technologies in energy production, distribution and end use facilitate the management of increasing energy demand due to the cooling need created by temperature increases and load optimization that needs to be adapted due to sudden temperature changes. Increasing efficiency and decreasing energy consumption enables the use of resources in a more sustainable way and also increases the security of energy supply.

3.2.

ENERGY SUPPLY SECURITY

Increasing energy demand also brings with it an increase in the consumption of natural resources. The measures taken within the scope of the COVID-19 pandemic in 2021 reduced total fuel consumption all over the world, which caused global commodity prices to decrease. However, with the lifting of the measures implemented as of the second half of 2021, commodity prices started to rise again. Recent regional tensions have brought about an increase in commodity prices, including energy raw materials, which has increased energy supply security concerns in various geographies, especially in Europe. Instability in supply causes energy prices to rise and energy supply to be limited. Providing energy within a continuous, high-quality and safe supply system is both a political and economic necessity.

In order to strengthen and guarantee their energy security, states increase their energy efficiency investments and diversify their supply sources. It is observed that the measures and approaches regarding this issue are also reflected in public documents. For example, the “REPowerEU” Plan prepared by the European Commission to ensure energy supply security is based on the principles of energy saving and diversification of energy sources for clean energy production.

Energy efficiency makes energy supply safer by reducing dependence on imports, slows down the consumption rate of existing resources, and reduces energy demand by contributing to economic growth and development. Energy efficiency, which overlaps with Türkiye’s priority economic policies in all these respects, also serves energy supply security.

3.3.

EUROPEAN GREEN DEAL

The EU Emissions Trading System (ETS) Directive, which was introduced as a part of the Kyoto Protocol to ensure that countries fulfill their commitments, was accepted in 2003 and entered into force in 2005. The Directive is a market mechanism designed to encourage emissions reductions by putting a price on greenhouse gas emissions. Based on the principle of "Cap and Trade", the EU ETS covers approximately 40% of greenhouse gas emissions in Europe. The quest for both transferring the savings gained within the scope of the EU ETS to commercial partners and reconsidering and transforming all areas of the economy with a green perspective has led the EU to develop an economic-social-environmental program. Developed within the framework of this approach and published in 2019, the European Green Deal (EGD) aims to make Europe a carbon neutral continent by 2050 and also envisages the creation of a modern and competitive economy.

Energy efficiency, which is of critical importance for the successful implementation of the actions included in the EGD, also contributes to the EU reaching its climate objectives. Within the scope of the EGD, the "Fit for 55" package was announced in order to achieve the goal of reducing greenhouse gas emissions by at least 55% by 2030 compared to 1990. The package includes goals such as expanding the EU ETS, establishing the EU Carbon Border Adjustment Mechanism (CBAM), expanding energy efficiency, increasing the use of renewable energy and preventing carbon leakage.

With the publication of the "Fit for 55" package and the "REPowerEU" Plan, the EU set more ambitious energy efficiency goals and there was a need to revise the EU Energy Efficiency Directive, which dates back to 2012. With the revised Energy Efficiency Directive published in September 2023, the EU aimed to achieve the goal of reducing energy consumption by 11.7% by 2030 compared to the 2020 reference scenario projections. The Directive in question makes the principle of "energy efficiency first" the fundamental policy of the EU energy policy and emphasizes that energy efficiency should be taken into consideration in all policy regulation, planning and important investment decisions in the energy and non-energy sectors. Since the public sector accounts for 5-10% of the EU's final energy consumption, the goal of reducing the energy consumption of public institutions by 1.9% every year has been designated.

In Türkiye, the Green Deal Action Plan, published in the Official Gazette dated July 16, 2021 and numbered 31543, aimed to support the transition to a resource-efficient economy compatible with the EGD and sustainable development objectives. The implementation of the Plan, which includes a total of 32 goals and 81 actions under 9 main headings, is expected to have a significant impact on the Turkish economy. Preparations are being carried out by various working groups within the framework of the Plan in question, and law and secondary legislation designs are continuing in the areas of need.

With the CBAM, which was developed within the scope of the EGD and whose implementation roadmap is being shaped, it is recommended to first reduce the carbon emissions of energy-intensive sectors and apply a carbon fee for the entry of imported products into the EU market. Importing companies are required to purchase emission certificates corresponding to the carbon footprint of the imported goods. In this context, the importance of efficient use of energy is once again confirmed. Products with reduced carbon loads through energy efficiency measures will be subject to lower carbon taxes or pricing. Financial obligations within the scope of the regulation, which is planned to be implemented in the iron- steel, cement, aluminium, fertilizer, electricity and hydrogen sectors in the first stage, are planned to start as of 2026.

EGD's green and circular economy approach aims to reduce the pressure on the environment and natural resources by encouraging the efficient use of resources, achieving sustainable growth and climate change goals. Transition to a green and circular economy model based on the effective use of resources is only possible by ensuring energy efficiency and clean production practices. The Draft New Eco-Design Regulation, announced by the European Commission within the framework of the Sustainable Product Initiative announced in March 2022, is a regulation for more environmentally sustainable and circular natured products on the European market. The Blueprint establishes a framework for identifying eco-design requirements to significantly improve the circularity, energy performance and other environmental sustainability aspects of certain product lines. Within the scope of green and circular economy in Türkiye, studies are carried out to reduce waste, increase energy efficiency and raise consumer awareness on the use of environmentally friendly products.

For clean, economical and safe energy supply, it is necessary to create an energy strategy compatible with the EGD, ensure coordination with climate goals, and take environmental concerns into account in energy production and consumption. To achieve these objectives, Türkiye carries out studies such as the National Energy Plan and Hydrogen Technologies Strategy and Road Map, and works to increase the welfare of the country. Dissemination of energy efficient and low carbon heating and cooling systems is among the important elements of this strategy.

Sustainable smart transportation policies are increasingly gaining value due to the increasing greenhouse gas emissions of the transportation sector around the world. In line with the

EGD's objectives, the EU published the "EU Sustainable and Smart Mobility Strategy" in December 2020. The strategy includes measures such as encouraging the use of zero-emission transportation vehicles, developing more efficient transportation systems, and making transportation systems more efficient by using digital technologies. Practices such as the use of electric vehicles and micro mobility vehicles, the development of smart transportation systems, the promotion of alternative fuel vehicles and the strengthening of transportation infrastructure are among the applications that directly or indirectly increase energy efficiency.

Renovation of both public and private buildings is an important action within the scope of the EGD and has been selected as a key initiative to achieve the objectives. If buildings comply with the latest standards in energy efficiency and insulation, energy consumption is greatly reduced. In Europe, practices such as equipping new buildings to be constructed with thermal insulation, air conditioning systems, lighting and technologies that optimize energy consumption, improving the insulation of existing buildings, using sustainable materials in renovation and renewing air conditioning systems attract attention.

In order to achieve a climate neutral and circular economy, the industry must be fully mobilized and the EGD's sustainable industry and digitalization approach must be adopted. Europe's industrial strategy is built on leading green and digital transitions. In order for CBAM not to affect Türkiye's competitiveness, it is aimed to expand clean and environmentally friendly production within the framework of green transition and digitalization of the industry. Energy efficient production processes mean less energy and resource use, and digital technologies are also used to make production processes more efficient. This transition creates new business opportunities through the development of new technologies and business models. In Türkiye, technological needs and solution suggestions are designated in energy-intensive sectors within the framework of the "Green Growth Technology Road Map".

4

Strategic Goals and Objectives

With this document, it is aimed to reduce the amount of energy consumed per GDP (energy intensity) of Türkiye by at least 15% and to achieve a total energy saving of 37.1 MTOE in the period of 2024-2030. The table showing the change in savings and investments over the years during this period is given below (Table 1).

Table 1. Change in Savings and Investments by the Years in Period 2024–2030

	2024	2025	2026	2027	2028	2029	2030
Savings [kTOE]	1,197	1,120	1,266	1,403	1,589	1,703	1,884
Invest-ments [Milion USD]	2,452	2,656	2,544	2,513	3,086	3,227	3,574

As seen in Table 1, it is aimed to invest 20.2 billion USD in energy efficiency between 2024 and 2030 and achieve a cumulative primary energy saving of 37.1 MTOE. With the realisation of this target, which corresponds to a 16% reduction in Türkiye's primary energy consumption in the said period, 100 million tons of CO_2 eq. greenhouse gas reduction will be achieved.

Energy efficiency investment and program expenditure amounts and projected energy savings amounts in Table 1, covers the implementation period of 2nd NEEAP between 2024-2030. Furthermore, Türkiye's 2053 net zero target was taken into account when making projection studies. If the targets in Table 1 are achieved at the end of the Action Plan period, significant progress will be made towards the 2053 net zero target.

Of the projected investment of 20.2 billion USD, 5 billion USD will be provided by the public through tax and incentive programs. It is anticipated that the remaining amount will be realized through private sector investments, due to the leverage effect and national and international private financing allocations.

In order to achieve these objectives, strategic goals are defined that concern many fields and sectors and can only be achieved through a collective effort and with the participation of all relevant segments. Each strategic goal in this document represents the basic policy pillars necessary for Türkiye to become a country that uses energy with the highest possible efficiency, in line with an approach compatible with sustainable development priorities.

In order to realize the strategic goals designated in a way that will complement and support each other, with a systematic approach, concretization studies have been carried out on the basis of sectors and fields, and sub-objectives that may be related to the strategic objectives have been defined. For ease of monitoring, these sub-objectives are named "objectives".

To achieve the goals whose main framework is drawn by strategic objectives, various actions must be designated, and activities appropriate to these actions must be carried out. 2nd NEEAP, which covers the actions and activities in question has been prepared as an integral part of this Energy Efficiency 2030 Strategy.

With the goals defined in Türkiye's Energy Efficiency 2030 Strategy, the actions defined in 2nd NEEAP are systematically presented below, taking into account hierarchical relationships.

SG-1 To make energy efficiency a policy component taken into account in all decision-making processes, within the framework of the perspective of strengthening energy supply security, achieving the net zero emission goal and increasing total factor efficiency

SO-1.1: To ensure that energy efficiency is considered a priority factor in all areas of the economy and to consider it as an important part of the net zero emission goal, to make arrangements in policy design processes to take into account the relevance of policy and legislation to energy and resource efficiency

SG-2 To increase awareness-raising activities of society and to strengthen cooperation with external stakeholders in order to ensure that energy efficiency is evaluated within a social mobilization approach

SO-2.1: Carrying out energy efficiency-focused awareness and capacity building activities for both the broad public and certain competency groups

SG-3 To support the investments that will encourage green transition and increase in energy efficiency, and to accelerate the transition with innovative financing tools

SO-3.1: Prioritizing energy efficiency benefits in tax and incentive practices in order to utilize financial resources in effective and high value-added areas

SO-3.2: Increasing the share of energy efficiency in innovative financing instruments such as sector or field-themed loans, green or sustainable loans, green or sustainability-related bonds and sukuk

SG-4 To carry out a comprehensive improvement program in which the public will play a leading role in reducing carbon emissions with energy efficient solutions and approaches in buildings

SO-4.1: Establishing an effectively functioning heat market, encouraging district heating and cooling systems, and carrying out pilot applications in this regard

SO-4.2: Improving energy efficiency in public service buildings and lodgings, including local administrations, as well as publicly owned facilities, infrastructure investments and service areas (wastewater treatment plants, pumping stations, airports, etc.)

SO-4.3: To continue support and incentive practices for the rehabilitation, insulation and transition of residential and commercial buildings into high energy performance structures

SH-4.4: To ensure the development of institutional, technical and financial infrastructures to make energy efficiency studies in public buildings sustainable

SG-5 To increase the use of energy efficient equipment, systems and technologies, especially digital applications and innovative technologies, and to support their development primarily with domestic opportunities

SO-5.1: To support the development and dissemination of digital technologies that will increase energy efficiency and/or contribute to the monitoring of energy performance, especially the Internet of Things, smart sensors and open data platforms, with domestic resources

SO-5.2: To support R&D activities for new generation applications and technologies such as electricity storage, low-carbon hydrogen, carbon capture, utilization and storage, direct reduced iron, waste-derived fuel, hybrid electric melting furnace

SO-5.3: To support the development and use of heat pump and cogeneration technologies that are innovative and easy to implement on a large scale

SG-6 To increase energy efficiency projects and investments to encourage the green transition efforts of the industry sector

SO-6.1: Carrying out supportive activities to improve energy efficiency in all branches of industry, especially the manufacturing industry

SO-6.2: Providing support for resource and energy efficiency projects such as industrial symbiosis, waste heat recovery, and reuse of waste as second raw material in line with circular economy principles

SO-6.3: Encouraging the use of renewable energy and alternative fuels to increase total factor efficiency in industry

SG-7 To ensure that energy efficient solutions and applications are given priority in the transportation sector in order to balance the high energy use caused by increased mobility, and to popularize multi-modal and integrated transportation systems

SO-7.1: Taking measures to support the transition of the national vehicle fleet towards low-emission and energy-efficient options

SO-7.2: Strengthening environmentally and human-friendly infrastructure investments that will ensure energy efficiency in urban transportation and developing smart transportation systems within the framework of the smart cities approach

SO-7.3: Supporting less energy-intensive transportation modes such as railway and maritime, increasing the use of sustainable aviation fuel, expanding multi-modal and integrated transportation systems in passenger and freight transportation

SG-8 To implement energy-efficient agricultural practices compatible with the objectives of increasing the competitiveness of the agricultural sector, improving agricultural irrigation efficiency and making the food supply chain sustainable

SO-8.1: To carry out the effective use of water at every stage together with energy efficiency practices in accordance with the resource efficiency approach

SO-8.2: To ensure food security, to disseminate sustainable agricultural practices and to promote energy efficiency measures in the agricultural value chain to create a resilient agricultural sector

SG-9 To ensure market transition of environmentally friendly, circular natured and energy efficient products

SO-9.1: To continue the activities carried out to increase the prevalence of environmentally friendly energy efficient products, devices, equipment and machines, to make arrangements in accordance with the new obligations that will come to the fore within the framework of eco-design principles

SG-10 To increase efficiency throughout the entire value chain of energy and reduce losses in production, transmission and distribution

SO-10.1: To realize the objective of increasing the share of renewable energy sources in energy supply within the framework of national energy policies, with an integrated approach with energy efficiency measures

SO-10.2: Increasing energy efficiency in all activities related to the production, transmission and distribution of energy raw materials and electricity

SO-10.3: Creating the market infrastructure for demand side participation and virtual power plant applications, developing the energy efficiency obligation system

5

Implementation, Coordination and Monitoring

The Ministry of Energy and Natural Resources is responsible for monitoring the strategic goals and objectives defined within the framework of Türkiye's Energy Efficiency 2030 Strategy (2024-2030), carrying out the necessary coordination and making periodic reporting on developments.

The Presidency's Circular numbered with 2019/27 mentioned to establish National Energy Efficiency Action Plan Monitoring and Guidance Board, which is responsible for carrying out energy efficiency studies effectively throughout the country, determining energy efficiency strategies at the national level, preparing action plans and programs, monitoring NEEAP realizations and ensuring coordination for its effective implementation. As a result of institutions entering data into the NEEAP Data Collection Software regarding the actions for which they are responsible, progress reports are created and presented to the said board.

Which institutions and organizations are responsible for the execution of the actions in 2nd NEEAP and which institutions and organizations will be cooperated with are exclusively stated in the relevant Action Plan in the following part of the Türkiye's Energy Efficiency 2030 Strategy. The Progress Report, which will reflect the developments regarding the Energy Efficiency 2030 Strategy and 2nd NEEAP covering the years 2024-2030, will be published every year on the website of the Ministry of Energy and Natural Resources. News regarding the publication of progress reports will be announced via a separate e-mail to the responsible and relevant institutions mentioned in the Action Plan. Additionally, important developments for that year will be shared on social media accounts with reference to the Progress Report. In this way, it is aimed to keep all stakeholders informed of the developments.

6

2nd National Energy Efficiency Action Plan

HORIZONTAL TOPICS

1

Code and Name of the Action :

Y1-Establishing Energy Management Systems and Increasing Their Effectiveness

Activities to be Carried Out :

- Monitoring and auditing activities will be carried out to complete the processes of appointing an energy manager and installing the ISO 50001 Energy Management System in buildings, industrial enterprises and electricity generation facilities that are required to employ an energy manager.
- The establishment of the Energy Management Unit and ISO 50001 Energy Management System in organized industrial zones will be completed.
- Monitoring and inspection studies will be carried out to complete mandatory energy audits in buildings and industrial enterprises.
- Monitoring and auditing activities will be carried out for the establishment of ISO 50001 Energy Management System in power plants with an installed power of 100 MW and above.
- Training will be organized every year to improve the capacities of energy managers in line with the objectives of developing competent human resources in the sectors.
- Steps will be taken to include energy managers in projects that involve green transition efforts or activities focused on sustainability (resource efficiency, circular economy, symbiosis, greenhouse gas emission accounting, ETS and carbon pricing, etc.).
- The frequency of activities carried out to monitor the effective use of energy on site will be increased and disseminated.

Outputs and Indicators : Number of applications and inspections in sectors
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Industry and Technology
Timeline : It will be implemented as of 2024.

2

Code and Name of the Action :

Y2-Improving Energy Efficiency Financing Opportunities

Activities to be Carried Out :

- Financial institutions that fund verified energy efficiency investments will be allowed to exempt .an amount equal to the monetary sum of these investments from mandatory financial provisions.
- It will be ensured that resources for climate finance are used in sectoral (Industry, buildings or transport etc.) energy efficiency applications.
- After detailed definitions of need, application and management, necessary legislative arrangements will be made to create financial opportunities for energy efficiency.
- A regulation will be made to count the savings from energy efficiency projects as collateral for the financing to be used from banks.
- It will be ensured that the possible revenues obtained from ETS will be used to finance energy efficiency investments.

Outputs and Indicators : Legislative regulation

Responsible Institution : Ministry of Treasury and Finance

Relevant Institution/Organization : Ministry of Energy and Natural Resources, Ministry of Environment, Urbanization and Climate Change

Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

3

Code and Name of the Action :

Y3-Improving the Energy Efficiency Investment Environment

Activities to be Carried Out :

- Studies will be carried out to develop performance guarantee and insurance structure for energy efficiency investments.
- Legislative amendment studies will be carried out to evaluate the liabilities on the balance sheets of ESCOs in the projects to be carried out within the scope of EPC.
- The Energy Saving Feed-In Tariff (ESFIT) mechanism, which is similar to the Renewable Energy Resources Support Mechanism (YEKDEM) designed to support renewable energy in Türkiye, will be examined and research will be conducted for its adaptability to Türkiye.

Outputs and Indicators : Legislative regulation

Responsible Institution : Ministry of Treasury and Finance, Ministry of Energy and Natural Resources

Relevant Institution/Organization : Ministry of Industry and Technology, Small and Medium Scale Industry Development and Support Administration (KOSGEB), Insurance and Private Pension Regulation and Supervision Agency (SEDDK), Turkish Standards Institution (TSE)

Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

4

Code and Name of the Action :

Y4-Supporting Energy Efficiency Projects with Energy Efficiency Competitions

Activities to be Carried Out :

- Legislation and technical infrastructure will be created for the organization of competitions.
- An energy efficiency competition will be organized in line with green and innovative goals within the framework of the budget to be created.

Outputs and Indicators : Number of projects to be supported and amount of support

Responsible Institution : The Ministry of Energy and Natural Resources

Relevant Institution/Organization : -

Timeline : Legislative arrangements will be made in 2024 and will be implemented as of 2025.

5

Code and Name of the Action :

Y5-Development of Energy Efficiency Portal in Line with Net Zero Goals

Activities to be Carried Out :

- In order to use the updated Energy Efficiency (ENVER) Portal more effectively, promotional activities will be carried out and benchmarking and reporting modules will be developed to be used in sectoral carbon neutral road maps.
- The scope of benchmarking studies will be expanded and disseminated.
- Energy efficiency indicators will be designated in final sectors and savings achieved on a sectoral basis will be monitored and reported.

Outputs and Indicators : Improved software and monitoring studies

Responsible Institution : The Ministry of Energy and Natural Resources

Relevant Institution/Organization : -

Timeline : It will be implemented as of 2024.

6

Code and Name of the Action :

Y6-Conducting Awareness, Training and Awareness Raising Activities

Activities to be Carried Out :

- The awareness index in households will be increased to high-low levels.
- In order to inform end users about technological developments and successful applications related to energy efficiency; A digital education platform will be created where students can access different educational tools such as online courses, learning materials, guides, game learning, and online conferences.
- Awareness, training and information activities; will be planned and carried out as a whole, focusing on the goal audience, measuring the level of effectiveness and reviewing it annually.
- Considering the permanent effects of early learning, energy efficiency awareness raising activities will be carried out for pre-school and primary school students.
- Skills and achievements regarding energy efficiency will be included in the curriculum and course materials of the fields and branches applied in vocational and technical secondary education.
- Campaigns for creating behavioural change in individuals will be organised to spread the energy efficiency culture throughout society.
- Courses on energy efficiency will be included in the undergraduate and graduate education curricula.
- Awareness raising activities will continue through Energy Management Units in organized industrial zones and activities of OIZs to share information with each other will be supported.
- Brochures etc. containing basic energy efficiency measures for SMEs. The materials will be prepared in cooperation with KOSGEB.
- In order to improve the capacities of energy efficiency consultancy (EEC) companies, technical trainings will be organized where good practice examples will be introduced and case examples will be discussed.
- Measurement and verification systems will be expanded, and the number of certified experts will be increased.

Outputs and Indicators : Awareness raising activities, increase in energy efficiency awareness

Responsible Institution : Ministry of Energy and Natural Resources, Ministry of National Education (MoNE), Ministry of Industry and Technology, Ministry of Environment, Urbanization and Climate Change, KOSGEB, Higher Education Board (YOK)

Relevant Institution/Organization : Public, Private Sector and Non-Governmental Organizations

Timeline : It will be implemented as of 2024.

7

Code and Name of the Action :

Y7-Adopting Sustainable Business and Procurement Approach in the Public Sector

Activities to be Carried Out :

- Awareness raising activities will be carried out to make more use of the opportunity to make decisions based on “lifetime cost” instead of “purchase cost” provided by the Public Procurement Legislation.
- Capacity building training on lifetime cost calculation methodology will be organized to disseminate products with low carbon footprint.
- Studies on the adoption of purchasing methods that prioritize energy efficiency in public procurement and construction works will be expanded.

Outputs and Indicators : Awareness raising activities

Responsible Institution : Public Procurement Institution (PPI)

Relevant Institution/Organization : The Ministry of Energy and Natural Resources

Timeline : It will be implemented as of 2024.

8

Code and Name of the Action :

Y8-Development of Energy Efficiency Obligation Program

Activities to be Carried Out :

- Energy efficiency obligations will be defined for energy (electricity, natural gas, oil) distribution and/or supply companies with an approach compatible with our country's climate goals.
- The energy efficiency obligation to be imposed on electricity distribution and/or supply companies will be defined as a quality performance criterion.
- A pilot study will be carried out for the implementation of the white certificate market in the liability system.

Outputs and Indicators : Legislative regulation, development of liability program
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Energy Market Regulatory Authority (EPDK), Energy Markets Operation Joint Stock Company (EPİAŞ), Obliged Parties (Distribution and Supply Companies)
Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

9

Code and Name of the Action :

Y9-Taking Administrative Measures to Expand the Use of Heat Pumps

Activities to be Carried Out :

- Feasibility, training and awareness raising studies will be carried out to popularize heat pump applications.
- Studies will be conducted to determine the heating and cooling demand in buildings and industry and the potential for application of heat pumps will be investigated.
- A GIS-based heating and cooling digital map (taking into account renewable heat supply sources such as geothermal, solar, etc.) will be prepared and the potential usage areas of the heat pump will be designated.

Outputs and Indicators : Awareness raising activities
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Industry and Technology
Timeline : It will be implemented as of 2024.

10

Code and Name of the Action :

Y10-Strengthening R&D Activities to Increase Energy Efficiency

Activities to be Carried Out :

- In line with the updated and upgraded climate goals, existing criteria for R&D support will be reviewed and energy efficiency will continue to be prioritized.
- Priority will be given to innovative R&D projects, especially smart transportation systems that will support the development of smart and resilient cities.
- Among the R&D projects completed in the electricity distribution sector, those aimed at reducing distribution losses will be examined and good examples will be disseminated.
- The recycling potential of materials in Wind Power Plant (WPP) and Solar Power Plant (SPP) components and battery storage equipment and the economic value of the materials resulting after transition will be analysed. The energy savings that will be achieved by avoiding additional mining and production activities of the materials to be recovered will be calculated.
- Within the scope of the Procedures and Principles for Supporting the Research, Development and Innovation Activities of Electricity and Natural Gas Distribution Companies, priority will be given to projects aimed at increasing energy efficiency in the distribution network in the R&D projects selected by EMRA.
- Technological capabilities and investments in new generation energy and transportation systems, such as high-energy-dense battery technologies, will be increased.

Outputs and Indicators	:	Number of R&D projects realized
Responsible Institution	:	Turkish Scientific and Technological Research Council (TUBITAK), Turkish Energy, Nuclear And Mining Research Corporation (TENMAK)
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Ministry of Transport and Infrastructure, EMRA
Timeline	:	Legislative arrangements will be made in 2024 and will be implemented as of 2025.

BUILDING AND SERVICES SECTOR

1

Code and Name of the Action :

B1-Increasing the Implementation Capacity of Energy Efficient Materials and Technologies Used in the Construction Sector

Activities to be Carried Out :

- Public awareness will be increased by updating the Building Sector Energy Efficiency Technology Atlas in line with needs. In this context, a guide will be published containing information on minimum energy performance criteria for devices, equipment and buildings and successful applications for buildings.
- Energy efficient technologies and renewable energy technologies will be included in the unit price book of the Ministry of Environment, Urbanization and Climate Change in line with the needs.
- Awareness-raising activities focused on energy efficiency will be carried out to prepare the architectural, electrical, automation, mechanical and air conditioning projects of public buildings according to the region-specific characteristics and climatic conditions.
- In line with the EGD's predictions, new developments such as strengthened circular economy, ecological design and product passport will be monitored and capacity building studies will be carried out for the production and use stages of construction materials.
- Awareness raising activities will be carried out on the production, application and disposal of building materials with volatile organic compound (VOC) emission values in accordance with the Environmental Product Declaration and standards.

Outputs and Indicators	:	Guidance documents
Responsible Institution	:	Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, Ministry of Industry and Technology
Timeline	:	It will be implemented as of 2024.

2

Code and Name of the Action :

B2-Conducting Detailed Analysis Studies on Energy Efficiency Potential in Buildings

Activities to be Carried Out :

- Energy audits will be carried out for different building typologies and service areas.
- Study reports will be analyzed and current energy efficiency potential in different typologies will be calculated.
- Comparison studies will be carried out for different building typologies and service areas.

Outputs and Indicators : Number of studies, comparison studies
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : The Ministry of Environment Urbanisation and Climate Change
Timeline : It will be implemented as of 2024.

3

Code and Name of the Action :

B3-Improving Energy Efficiency and Ensuring Energy Conversion in Public Buildings

Activities to be Carried Out :

- Technical, administrative and financial infrastructure will be strengthened so that EPC can be applied more widely in public buildings.
- Monitoring and auditing activities will be carried out for the appointment of energy managers, establishment of ISO 50001 Energy Management Systems, obtaining EICs and completion of mandatory energy audits.
- The 30% energy saving target defined for 2030 in public buildings that are required to employ energy managers will be achieved.
- Guides and checklists containing design priorities will be prepared for newly designed public buildings, and Integrated Building Design (IT) will be used in building construction processes.), Building Energy Modelling (BEM), Building Management System (BMS) and Building Information Modelling (BIM) approaches will be taken into consideration.
- The effectiveness of the energy management units established within the governorships will be increased and the competencies of the energy managers working there will be improved.
- A pilot project will be carried out to implement energy efficiency activities to reduce electricity costs arising from data centres in buildings belonging to public institutions and organizations.

Outputs and Indicators : Ratio of achieving savings goal, EPC number
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change
Timeline : It will be implemented as of 2024.

4

Code and Name of the Action :

B4-Increasing Energy Efficiency in Municipal Services

Activities to be Carried Out :

- Compulsory energy efficiency studies will be conducted in municipal services and measures will be implemented.
- Work will be carried out on municipalities, primarily metropolitan municipalities and provincial and district municipalities with large populations, to obtain ISO 50001 Energy Management System Certificate and to develop technical capacity.
- A program will be carried out to take measures (automation/revision of pumps and pressure control, infrastructure renewal, increase of monitoring meters, etc.) to reduce the loss-leakage rate in municipalities' water lines and to ensure energy-efficient equipment conversion.
- Comparison studies will be carried out in wastewater treatment plants and good practice examples will be shared.
- Activities to increase energy efficiency in municipal services will be included in climate action plans.
- ILBANK will provide support to local governments' energy efficiency and renewable energy projects, if requested and financial resources allow.

Outputs and Indicators : Number of projects and amount of savings
Responsible Institution : Ministry of Energy and Natural Resources, Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization : Ministry of Agriculture and Forestry, ILBANK
Timeline : It will be implemented as of 2024.

5

Code and Name of the Action :

B5- Rehabilitation of Existing Buildings and Improving Energy Efficiency

Activities to be Carried Out :

- Awareness raising activities will be carried out and guides or checklists will be prepared according to different building typologies and technologies.
- Monitoring and auditing activities of mandatory energy audits will be carried out.
- Sector-specific (service, etc.) benchmarking studies will be conducted.
- A comprehensive building improvement plan, including structural reinforcements, will be prepared within the scope of the 2053 net zero goal.
- A project competition will be organized to encourage energy efficiency in service buildings.
- With VAP supports, the comprehensive rehabilitation of buildings in the service sector will be accelerated.
- Technical studies will be carried out to popularize heat pump installation.
- The insulation loan facility offered for existing residences will be reviewed and the effectiveness of the program will be increased. In addition, efforts will be made to ensure that other energy efficient equipment and technologies benefit from relevant credit opportunities.
- Awareness will be increased by adding EIC information of the building in real estate advertisements and by collaborating with non-governmental organizations in the real estate sector.

Outputs and Indicators : Amount of savings to be achieved
Responsible Institution : Ministry of Energy and Natural Resources, Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization : Ministry of Treasury and Finance
Timeline : It will be implemented as of 2024.

6

Code and Name of the Action :

B6-Encouraging the Use of Central and District Heating/Cooling Systems

Activities to be Carried Out :

- Incentive programs focused on efficient heating and cooling will be investigated for new and existing buildings and residential units.
- In district heating systems, the geothermal potential in the region, if any, and waste heat from industry and power generation facilities will be utilized to the maximum extent.
- Within the scope of cooperation programs to be carried out with local governments, heat mapping studies will be carried out and low-carbon and energy-efficient district heating and cooling systems will be disseminated in new settlement areas.
- Central cooling facilities will be utilized by expanding efficient and low-emission cooling systems in hot climate regions.

Outputs and Indicators : Number of residences to be connected to district heating

Responsible Institution : Ministry of Energy and Natural Resources, Municipalities

Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, ILBANK

Timeline : It will be implemented as of 2024.

7

Code and Name of the Action :

B7-Encouraging the Certification of Sustainable Green Buildings and Settlements

Activities to be Carried Out :

- Buildings and settlements will be encouraged to have a National Green Building/ Settlement Certificate and awareness-raising activities will be carried out.
- Public buildings will be certified in a way that will set an example for the private sector.
- A field research study will be conducted every year to verify the results specified in the certificates.
- New public buildings that will be constructed after 2026 and have a total construction area of over 10,000 m^2 will be green building certified.

Outputs and Indicators : Number of certified green buildings/settlements

Responsible Institution : Ministry of Environment, Urbanization and Climate Change

Relevant Institution/Organization : The Ministry of Energy and Natural Resources

Timeline : It will be implemented as of 2024.

8

Code and Name of the Action :

B8-Increasing Minimum Energy Performance Criteria in New Buildings

Activities to be Carried Out :

- In the general specifications, descriptive and disseminating issues will be included, covering the Validity Audit (Commissioning), testing, adjustment and balancing (TAB) processes carried out by authorized/certified real/legal persons in TAB.
- Nearly Zero-Energy Buildings criteria will be reviewed by 2030.

Outputs and Indicators : Legislative regulations
Responsible Institution : Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization : The Ministry of Energy and Natural Resources
Timeline : It will be implemented as of 2024.

9

Code and Name of the Action :

B9-Expanding the Use of Renewable Energy in Buildings

Activities to be Carried Out :

- Awareness raising programs will be carried out for the benefits of renewable energy and new technologies.
- Regulations will be made for the use of renewable heat and microcogeneration systems.
- The mandatory use of renewable energy in Nearly Zero-Energy Buildings will be gradually increased over the years.

Outputs and Indicators : Installed capacity of renewable energy in buildings
Responsible Institution : Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization : The Ministry of Energy and Natural Resources
Timeline : It will be implemented as of 2024.

10

Code and Name of the Action :

B10-Establishing Financial Incentives for the Renovation of Existing Buildings

Activities to be Carried Out :

- Additional financial incentives will be defined for the replacement of best-in-class energy consuming equipment, home automation systems and digital technologies.
- Efforts will be made to provide financial and fiscal incentives to ensure heat pump installation in existing buildings.
- A working committee will be formed to evaluate which financial incentives can be supported for residences with EIC in existing buildings.

Outputs and Indicators : Legislative regulations

Responsible Institution : Ministry of Treasury and Finance

Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Ministry of Industry and Technology

Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

11

Code and Name of the Action :

B11-Improving Technical Capacity on Energy Efficiency Applications in Buildings

Activities to be Carried Out :

- Studies will be carried out to include the subject of energy efficiency in buildings into the curricula of engineering and architecture faculties.
- Up-to-date training materials (guidance documents, videos, etc.) developed for energy efficiency practices will be prepared and programs will be carried out to ensure that relevant stakeholders (study-project certified persons and relevant institutions/ organizations) benefit from these materials.
- In-service training of technical personnel working in the public sector will be updated regularly and information will be provided in line with new developing technologies.

Outputs and Indicators : Training materials, number of people trained

Responsible Institution : The Ministry of Energy and Natural Resources

Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change

Timeline : It will be implemented as of 2024.

INDUSTRY SECTOR

1

Code and Name of the Action :

S1- Dissemination of Cogeneration Systems in Large Industrial Facilities Using Heat

Activities to be Carried Out :

- An analysis-evaluation report will be published after the feasibility and study reports for all new and old industrial enterprises with thermal energy needs over 20 MW are examined.
- Support for the expansion of cogeneration systems in large industrial facilities that use heat will continue.
- The development of technologies for generating electricity from low-temperature waste heat will be prioritized in technology development zones, R&D and design centres.
- Modeling, analysis and evaluation studies will be carried out to sell a certain percentage of the electricity produced from waste heat recovery systems, defined by legislation, to the market for a certain period of time and at a price range guaranteed by the formula.

Outputs and Indicators	:	Evaluation report
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	Ministry of Industry and Technology
Timeline	:	It will be implemented as of 2024.

2

Code and Name of the Action :

S2- Providing Support to Increase the Number and Diversity of Innovative Energy Efficiency Projects in Industry

Activities to be Carried Out :

- Support will be provided for energy efficiency investments in line with the updated criteria in line with technological developments.
- The implementation performance of the projects and whether they meet the criteria will be examined.
- Support systems for technology development and innovative activities in VAPs will be increased.
- Necessary legislative arrangements will be made to improve VAP application processes and increase the amount of support.

Outputs and Indicators	:	Legislative regulation, amount of support
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	-
Timeline	:	It will be implemented as of 2024.

3

Code and Name of the Action :

S3- Dissemination of Energy Efficiency Applications for a Low-Carbon, Green and Digital Transformation in the Industry Sector

Activities to be Carried Out :

- Focused studies will be carried out to reduce business, process and product-based energy intensity under the headings of clustering, best practice, process efficiency and lean production techniques, and comparison criteria will be expanded.
- Minimum energy performance standards will be designated for prioritized machinery and equipment by working with industry associations.
- Priority existing best technologies and practices for Türkiye, especially industrial symbiosis and waste recovery, will be designated and sectoral best practice guides will be published.
- Specific energy consumption goals on a sub-sector basis will be defined in detail as a result of the analysis to be carried out and revised according to progress.
- Internet of things infrastructure transition planning in Industry 4.0 transition; Energy efficiency, process efficiency and competitiveness will be defined by prioritizing.
- Impact analyzes will be carried out to improve energy efficiency in electric motor and variable speed drive systems (fans, pumps, etc.) and necessary studies will be carried out to determine the development areas and gain savings potential.

Outputs and Indicators	:	Annual energy intensity and reduction rate in specific energy consumption in sub-sectors
Responsible Institution	:	Ministry of Industry and Technology
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources
Timeline	:	It will be implemented as of 2024.

4

Code and Name of the Action :

S4-Implementation of Energy Efficiency Performance Standards and Environmentally Friendly Design, Production, Labelling System in Products and Devices

Activities to be Carried Out :

- Studies will be carried out to harmonize environmentally friendly design and product labelling legislation in line with the updated EU directives.
- Consumer awareness will be raised about environmentally friendly design and product labelling.
- Awareness activities regarding the digital product passport will be carried out within the scope of the Legislation on Building Materials.

Outputs and Indicators	:	Legislative regulation
Responsible Institution	:	Ministry of Industry and Technology, Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources
Timeline	:	It will be implemented as of 2024.

5

Code and Name of the Action :

S5-Mapping Energy Saving Potential in Industry

Activities to be Carried Out :

- Sectoral benchmarking studies will be expanded in energy-intensive manufacturing sectors.
- Compulsory survey studies to be carried out in industrial enterprises will be analysed and evaluated together with benchmarking studies, and the energy saving potential map of the industry sector will be updated.

Outputs and Indicators	:	Savings map to be updated
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	-
Timeline	:	The sectoral scope of benchmarking studies will be expanded in 2024 and 2025, and the savings map will be updated in 2026.

6

Code and Name of the Action :

S6-Supporting the Reduction of Carbon Intensity and Specific Energy Consumption in Industry

Activities to be Carried Out :

- Necessary legislative arrangements will be made to improve the Voluntary Agreement implementation processes and increase the amount of support.
- Carbon intensity and specific energy consumption reduction practices will be included in the scope of Voluntary Agreement supports.

Outputs and Indicators : Legislative regulation, amount of support
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : -
Timeline : Legislative arrangements will be made in 2024 and will be implemented in 2025.

7

Code and Name of the Action :

S7-Dissemination of Circular Economy Approaches to Increase the Energy Efficiency of the Industry Sector

Activities to be Carried Out :

- Preliminary analyses will be carried out for industrialization compatible with industrial symbiosis in newly established OIZs.
- Sample life cycle assessment studies will be conducted for products with high carbon footprint.

Outputs and Indicators : Number of analysis
Responsible Institution : Ministry of Industry and Technology, Ministry of Environment, Urbanization and Climate Change
Relevant Institution/Organization : Ministry of Energy and Natural Resources
Timeline : It will be implemented as of 2024.

8

Code and Name of the Action :

S8-Strengthening Capacity Building and Sharing Activities for the Dissemination of Successful Energy Efficiency Practices in the Industry Sector

Activities to be Carried Out :

- Applications will be developed to share good practice examples within the sector, between sectors and between countries through the "peer learning" method.
- Energy Management System and measurement-verification training will be expanded.
- Sector-based energy audit reporting guides will be published.

Outputs and Indicators : Number of people trained, reporting guidelines
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : TSE
Timeline : It will be implemented as of 2024.

9

Code and Name of the Action :

S9-Dissemination of Energy Efficient Products in Industry

Activities to be Carried Out :

- In addition to the existing activities for products that cannot provide energy efficiency, a mechanism will be developed to carry out market surveillance and control activities within the scope of distance sales made over the internet.
- An incentive system for domestic production of test and measurement devices will be developed.

Outputs and Indicators : Developing the control mechanism and incentive system
Responsible Institution : Ministry of Industry and Technology
Relevant Institution/Organization : The Ministry of Energy and Natural Resources
Timeline : Legislative arrangements will be made in 2024 and 2025 and will be implemented in 2026.

10

Code and Name of the Action :

S10-Dissemination of Energy Consumption Monitoring Systems in Industry

Activities to be Carried Out :

- The widespread use of energy monitoring systems in industry will be encouraged within the scope of measuring and monitoring the energy use and energy losses of products/ equipment with high energy consumption in factories.
- Guidance documents for the use of energy monitoring systems in industry will be prepared.
- Sectoral trainings will be organized for the application of energy monitoring systems in industry.
- Domestic production of energy monitoring systems in industry will be encouraged.

Outputs and Indicators : Guidance documents, number of trainings
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Ministry of Industry and Technology
Timeline : It will be implemented as of 2024.

11

Code and Name of the Action :

S11- Carrying out Activities to Ensure Energy Efficiency and Emission Trading are Handled Together

Activities to be Carried Out :

- The revenues obtained from the ETS to be established will be used as financial resources in energy efficiency projects in order to support the green transition in the industry.
- Energy efficiency investments in the Voluntary Carbon Market, which will be established to reduce carbon emissions, will be certified.

Outputs and Indicators : Legislative regulation, number of energy efficiency projects supported and amount of support
Responsible Institution : Ministry of Treasury and Finance
Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Turkish Standards Institution
Timeline : Legislative arrangements will be made in the 2024-2026 period and will be implemented as of 2027.

ENERGY SECTOR

1

Code and Name of the Action :

E1-Establishing an Effectively Functioning Heat Market Within the Framework of Energy Transition Goals

Activities to be Carried Out :

- Necessary legislative arrangements regarding heat supply will be made in order to evaluate Türkiye's heat potential and use waste heat. Plans will be updated to gradually utilize the waste heat potential from industrial and electricity generation facilities and bring it into the economy.
- Solar energy-based heating potential for the industry sector will be identified.
- Criteria for heat measurement and sale of heat will be defined and necessary arrangements will be made.
- A guidance document containing best practice examples resulting from cost-benefit analysis of cogeneration, trigeneration, heating and cooling supply sources will be prepared.
- Sample analyses will be made for district heating-cooling applications and a guiding guide will be developed for local governments by determining the heat need on a neighbourhood basis.
- A GIS-based map will be prepared where heating-cooling supply and demand are matched.
- Arrangements will be made to ensure that the waste heat of enterprises located in organized industrial zones can be distributed over a central line and given to enterprises in need of heat.
- District heating-cooling applications will be evaluated and expanded in new development plans.
- A tool will be developed to compare sectoral efficient technologies within the scope of promoting the electrification of steam and hot water systems in industrial facilities. Awareness raising activities will be carried out to accelerate the transition of steam and hot water systems. Efficient transition will be given priority in support calls.
- Plan templates will be prepared for local governments to use when making heat supply plans.
- In regions with high cooling degree days, district cooling potential based on efficient and renewable resources will be designated.
- A guidance document will be published for the dissemination of cooling systems based on efficient and renewable resources.
- A research project will be carried out to evaluate the possibilities of using geothermal energy resources in district cooling in geographical regions with high cooling degree days and high geothermal potential.

Outputs and Indicators	:	Legislative regulation, guidance documents, GIS-based mapping
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change
Timeline	:	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.

2

Code and Name of the Action :

E2-Implementation of Efficiency Standards for Natural Gas Infrastructure

Activities to be Carried Out :

- The implementation of a road map that includes measures to reduce losses in the transmission and distribution infrastructure and increase energy efficiency will be monitored.
- Relevant legislative studies will be carried out to make existing natural gas transmission and distribution lines suitable for carrying alternative gases (synthetic gases, hydrogen, etc.).

Outputs and Indicators	:	Legislative regulation
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	BOTAŞ, Natural Gas Distribution Companies
Timeline	:	Legislative studies will be carried out in the 2024-2025 period and will be implemented as of 2026.

3

Code and Name of the Action :

E3-Encouraging Energy Efficiency through Billing Information and Tariffs

Activities to be Carried Out :

- Short, simple and descriptive information about energy efficiency measures in households' electricity bills will be announced on the internet.
- The availability of consumption information and statistics for previous months/years in the electricity and natural gas bills of hospitals, shopping malls and hotel-type commercial buildings with energy consumption above a certain amount will be implemented gradually in cooperation with energy supply companies.
- Distribution and supply companies will be required to provide guidance and information to consumers about energy efficiency on their websites and mobile applications, and to provide more detailed energy consumption data that is not included in the invoice upon request.
- Existing natural gas meters will be made smart so that they can record consumption values according to seasonal and climatic periods and transmit them to consumers for information purposes.
- Studies will be carried out to improve existing multi-time and gradual tariff methods to increase energy efficiency.

Outputs and Indicators	:	Legislative regulation
Responsible Institution	:	EMRA
Relevant Institution/Organization	:	The Ministry of Energy and Natural Resources
Timeline	:	Legislative studies will be carried out in the 2024-2025 period and will be implemented as of 2026.

4

Code and Name of the Action :

E4-Dissemination of Smart Meters

Activities to be Carried Out :

- In order to popularize smart meter applications, priority consumer groups (industrial facilities, commercial establishments, hotels, etc.), consumer sizes and regions will be designated.
- Within the scope of the National Smart Meter Project, smart meters will be widespread, starting from consumers with high energy consumption, and at the end of the implementation period, the ratio of smart meters to total meters will exceed 25%.

Outputs and Indicators : Smart meter dissemination rate
Responsible Institution : EMRA
Relevant Institution/Organization : The Ministry of Energy and Natural Resources
Timeline : Project work will be completed in the 2024-2025 period, and smart meters will begin to become widespread as of 2026.

5

Code and Name of the Action :

E5-Increasing Energy Efficiency in General Lighting

Activities to be Carried Out :

- The use of LED in general lighting will be expanded.
- Periodic situation assessments will be made so that innovative technologies and automation opportunities in the field of lighting can be reflected in the relevant regulations, and studies will be carried out to disseminate applications that strengthen data analytics.
- Implementation of energy efficiency projects in lighting with EPC will be encouraged.
- The development of domestic design and production competencies in efficient lighting will be encouraged.

Outputs and Indicators : Number of LED fixtures, amount of savings
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : Turkish Electricity Distribution Joint Stock Company (TEDAŞ), Electricity Distribution Companies
Timeline : It will be implemented as of 2024.

6

Code and Name of the Action :

E6-Increasing Energy Efficiency in Electricity Transmission and Distribution Activities

Activities to be Carried Out :

- Within the scope of reducing losses, incentive practices in tariffs for distribution companies will be developed and continued.
- Minimum qualification standards will be developed to increase energy efficiency in transformers.
- Analysis will be made regarding accelerating smart grid transition.
- Necessary analyzes will be made to evaluate the reactive energy consumption of transmission system users on an 8-hour basis in the first stage and hourly in the second stage, instead of evaluating the accounting periods monthly.
- The availability of Series Capacitor Centres (SKM) used on lines with long distances in transmission networks will be increased. SKM needs will be re-evaluated and its applicability to the transmission network for the purpose of reducing losses and flow control with variable impedance SKM applications will be investigated.
- Studies will be carried out to ensure efficient operation of transmission and distribution network equipment and to conduct lifetime cost analysis on new purchases.

Outputs and Indicators	:	Electrical grid loss rate
Responsible Institution	:	Turkish Electricity Transmission Joint Stock Company (TEİAŞ), TEDAŞ, Electricity Distribution Companies
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, EMRA
Timeline	:	It will be implemented as of 2024.

7

Code and Name of the Action :

E7-Increasing Efficiency in Electricity Generation Power Plants

Activities to be Carried Out :

- A benchmarking study will be conducted to monitor the efficient operating levels of power plants, separated by energy sources.
- Hybrid renewable energy systems and storage technologies will be encouraged in order to increase total factor efficiency in power plants.
- A guidance document containing good practice examples will be prepared based on the survey studies to be carried out in thermal power plants above 20 MW.
- Studies will be carried out to reduce efficiency losses due to equipment and operation in hydroelectric power plants with dams. Additional external financing opportunities will be explored for the investments that will be needed.
- Training and awareness-raising activities will be carried out to prevent pollution-related efficiency loss in solar power plants.
- Pilot projects will be carried out for digital transition, data analysis and artificial intelligence applications in existing power plants.
- The potential for using waste heat and intermediate steam in district heating will be demonstrated in order to increase the total efficiency in thermal power plants and to popularize low-carbon heating-cooling in residences. Energy studies focused on waste heat will be conducted in power plants.

Outputs and Indicators	:	Benchmarking study, guidance document
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	EÜAŞ, Electricity Generation Facilities
Timeline	:	It will be implemented as of 2024.

8

Code and Name of the Action :

E8- Creating Market Infrastructure for Demand Side Participation and Aggregator

Activities to be Carried Out :

- Legislative arrangements regarding the role and field of activity of the legal entity running collection activities for demand side management will be completed.
- Large-scale industrial consumers with relatively flexible consumption structures (cement, iron-steel, petrochemicals, etc.) will be selected and studies will be carried out to determine the flexible consumption portfolio.
- Legislation on demand side participation will be developed and the practice of demand side participation will be expanded with the coordination of the legal entity running collection activities.
- While creating a flexible consumption portfolio, demand side participation opportunities of consumers connected to the interconnected system from the distribution network will be investigated.
- Legislative studies will be completed for the implementation of the virtual power plant concept through collectors and for the collectors to operate in organized markets.
- Studies will be carried out for the application of the virtual power plant concept through collectors.
- Ancillary Service Agreements will be prepared for demand side participation and aggregators.
- Consumer awareness studies will be carried out in order to carry out demand side participation and collection activities effectively.
- Analyses will be conducted for collectors to participate in ancillary services.

Outputs and Indicators : Benchmarking study, guidance document
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : EMRA, TEİAŞ, EPİAŞ
Timeline : It will be implemented as of 2025.

9

Code and Name of the Action :

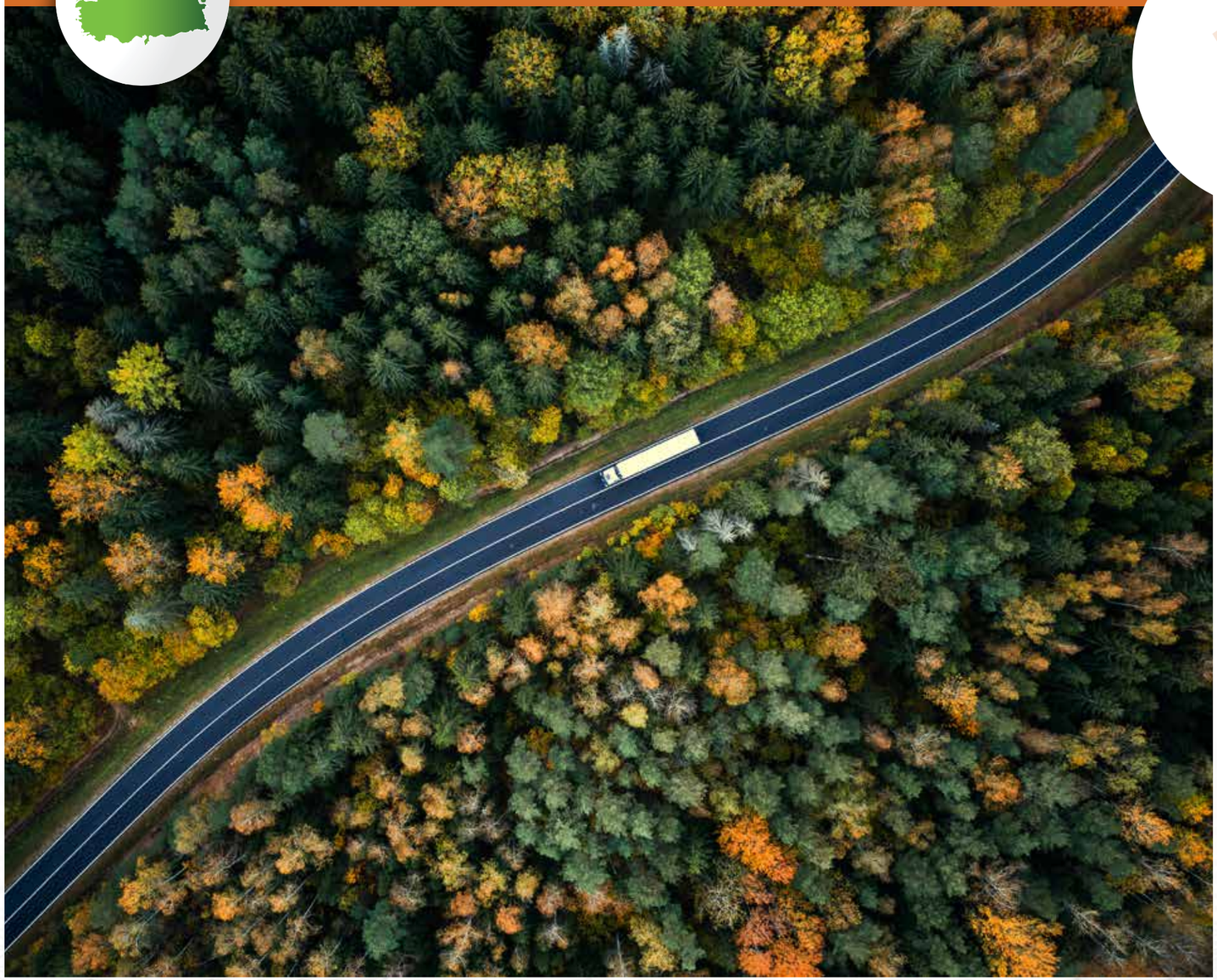
E9- Taking Measures to Develop Hydrogen Technology in Compatibility with National Energy Goals

Activities to be Carried Out :

- Existing legislation will be reviewed and made suitable for “hydrogen production, transportation, storage and use”.
- The possibilities of using hydrogen derived from renewable energy and hydrogen derivatives such as ammonia will be investigated.
- The widespread use of green hydrogen will be encouraged in all relevant sectors, with priority given to sectors where carbon emissions are difficult to reduce (chemistry, iron and steel, transportation, glass, ceramics, etc.).
- The PtX (Power to X) potential, which will provide indirect electrification in sectors in which the direct electrification cannot be used as cement and iron-steel require high temperatures, will be investigated.
- The factors required for the hydrogen economy (required area, water resources, electricity transmission infrastructure, transportation possibilities of the products to be obtained, environmental impact, etc.) will be evaluated together and the facilities planned to be established will be directed to pre-planned areas.
- Investors who will establish hydrogen production facilities will be given priority in connecting to the grid if they wish to establish renewable power plants limited to meeting the electricity needs of these facilities.
- Projects aimed at developing power systems that can work with hydrogen and alternative fuels and optimizing the hydrogen supply chain will be supported.
- Incentives will be developed for the development and production of domestic technologies (electrolyser, fuel cell, etc.).

Outputs and Indicators : Situation analysis
Responsible Institution : The Ministry of Energy and Natural Resources
Relevant Institution/Organization : TENMAK, TUBITAK, EMRA
Timeline : It will be implemented as of 2024.

TRANSPORTATION SECTOR



1

Code and Name of the Action :

U1-Developing Effective Incentive Mechanisms for Increasing Energy Efficiency in the Transportation Sector

Activities to be Carried Out :

- An impact analysis study will be conducted to develop a motor vehicle tax system in which vehicles with high fuel consumption and/or unit emission values will pay more taxes.
- A database will be created where the CO_2 emission information of all vehicles launched on the market will be recorded.
- Awareness about electric and hybrid vehicles will be increased and a low-emission vehicle culture will be established. It will be ensured that vehicle manufacturers take an active role in the promotion and dissemination of electric and hybrid vehicles to the public.
- A scrap incentive mechanism will be developed for all transportation vehicles and, if deemed appropriate, cost-effective options will be implemented.

Outputs and Indicators	:	Development of tax system, establishment of emission monitoring system
Responsible Institution	:	Ministry of Treasury and Finance, Ministry of Transport and Infrastructure
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Ministry of Industry and Technology
Timeline	:	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

2

Code and Name of the Action :

U2-Establishing Effective Monitoring Systems by Digitizing Transportation Sector Data

Activities to be Carried Out :

- By providing the necessary infrastructure, real, reliable and necessary data regarding passenger and freight transportation will be collected, monitored and evaluated in all sectors.
- By processing the necessary data such as vehicle registration information, vehicle periodic inspection and emission measurement data, vehicle type, cargo and passenger transportation information, etc., transportation and emission reports specific to transportation modes, vehicle types and cities will be published annually by TURKSTAT.
- Strategies to reduce emissions by keeping data and statistics on the emission values of all passenger and freight vehicles used; The transportation master plan and zoning plans will be developed as a basis for urban transportation planning.

Outputs and Indicators : Establishing data collection and monitoring systems

Responsible Institution : Ministry of Transport and Infrastructure, TURKSTAT

Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Interior, Ministry of Energy and Natural Resources, Municipalities, Union of Notary Publics

Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

3

Code and Name of the Action :

U3-Increasing Energy Efficiency in Road Freight Transportation

Activities to be Carried Out :

- In order to extend road life and protect road quality, regulations regarding tonnage excess in freight transportation will be strengthened and the effectiveness of the practices will be increased.
- Legal regulations will be made to renew fleets (cargo, logistics, transportation) and make alternative fuel vehicles mandatory at a certain rate.
- A program will be carried out for public institutions to take a leading role and replace their vehicle fleets with hybrid or electric vehicles. Information regarding the program to be carried out will be shared with the Ministry of Energy and Natural Resources.

Outputs and Indicators : Ratio of alternative fuel vehicles in total vehicle stock

Responsible Institution : Ministry of Transport and Infrastructure

Relevant Institution/Organization : Ministry of Treasury and Finance, Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources

Timeline : Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.

4

Code and Name of the Action :

U4-Development of Micro-Mobility in Urban Transportation

Activities to be Carried Out :

- Traveling on foot or by bicycle will be made more attractive by carrying out awareness raising activities in cities. In this context, urban planning approaches will be applied. Transportation master plans of cities will be prepared to include bicycle and pedestrian path infrastructure on the basis of sustainable city understanding.
- Bicycle and pedestrian path infrastructure (bicycle and pedestrian paths, bicycle parking areas, smart bicycle/bicycle stations) will be built and improved. Barrier-free integration of pedestrian and bicycle paths with other wheeled, rail and maritime access will be ensured.
- Bicycle and pedestrian paths/areas that are closed to motor vehicle use will be created in city centres.
- Studies will be carried out to raise awareness about the importance of bicycle use in protecting health and the environment by introducing best practice examples. In this context, carpooling, dissemination of new technologies, fast (dedicated) lines and alternative transportation methods will be encouraged.

Outputs and Indicators	:	Bicycle path to be built (km)
Responsible Institution	:	Ministry of Environment, Urbanization and Climate Change, Municipalities
Relevant Institution/Organization	:	Ministry of Internal Affairs, Ministry of Energy and Natural Resources, Ministry of Transport and Infrastructure
Timeline	:	It will be implemented as of 2024.

5

Code and Name of the Action :

U5-Development of Mobility Measures to Increase Energy Efficiency in Urban Transportation

Activities to be Carried Out :

- Low carbon emission zones will be created in cities and deterrent measures will be taken to limit the entry of large tonnage vehicles and/or automobiles into these zones.
- Traffic density will be effectively managed by supporting the transportation management units within the Metropolitan Municipalities with smart transportation systems.
- Guides containing best practice examples for popularizing energy efficient mobility in cities will be prepared for municipalities.
- Road routes will be optimized by monitoring the length of the roads traveled by public transportation vehicles, their fuel consumption and transportation demands.
- Awareness and training activities will be carried out to increase the use of e-scooters, bicycles and electric bicycles.
- By integrating card reading devices (validators) into transportation vehicles, transportation modes and public transportation vehicles in cities will be provided with a single card via a mobile application.

Outputs and Indicators	:	Improvement in traffic density, planning and physical arrangement studies
Responsible Institution	:	Ministry of Environment, Urbanization and Climate Change, Municipalities
Relevant Institution/Organization	:	Ministry of Internal Affairs, Ministry of Energy and Natural Resources, Ministry of Transport and Infrastructure, PTT
Timeline	:	It will be implemented as of 2024.

6

Code and Name of the Action :

U6-Increasing the Efficiency of Public Transport and Accelerating Energy Transition

Activities to be Carried Out :

- Financial resources will be developed and practices will be encouraged to increase energy efficiency in public transportation, use new technologies and accelerate electrification transition.
- Programs will be developed for businesses and organizations of certain sizes to cooperate with local governments to encourage public transportation.
- In order to increase safety and energy efficiency in public transportation systems, drivers will be given safe driving techniques and communication training.
- Electric buses will be prioritized by performing a life cycle cost analysis on new buses to be purchased by municipalities for public transportation purposes.

Outputs and Indicators : Number of electric buses used in public transport
Responsible Institution : Ministry of Environment, Urbanization and Climate Change, Municipalities
Relevant Institution/Organization : Ministry of Energy and Natural Resources, ILBANK
Timeline : It will be implemented as of 2024.

7

Code and Name of the Action :

U7-Strengthening Maritime Transportation

Activities to be Carried Out :

- In freight, passenger and vehicle transportation, Ro-Ro transportation will be encouraged where there is demand.
- In order to popularize maritime transportation and raise awareness, a good practices guide for modern port operating techniques will be issued in ports.
- In cargo transportation, container type transportation will be encouraged.
- Green port practices will be disseminated.

Outputs and Indicators : Share of maritime transport
Responsible Institution : Ministry of Transport and Infrastructure
Relevant Institution/Organization : The Ministry of Energy and Natural Resources
Timeline : It will be implemented as of 2024.

8

Code and Name of the Action :

U8-Strengthening Railway Transport and Increasing Energy Efficiency in the Sector

Activities to be Carried Out :

- By renewing the existing railway network and raising its standards, electrification and signalling will be carried out on the lines where priority is needed. High-speed, rapid and conventional railway projects will be implemented.
- The existing towing and towing vehicle park will be renewed.
- Freight centres such as ports, organized industrial zones, factories and mining areas will be connected to the existing railway network.
- Necessary arrangements will be made to increase the share of railway transportation in the transportation sector.
- Arrangements will be made, and studies will be carried out for the use of regenerative energy generated by railway vehicles on electrified lines.
- Incentives will be provided, and studies will be carried out to expand the railway network in organized industrial zones and make it suitable for freight transportation.

Outputs and Indicators	:	Share of rail transport
Responsible Institution	:	Ministry of Transport and Infrastructure
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, Ministry of Treasury and Finance, EMRA, Republic of Türkiye State Railways (TCDD), TCDD Transportation Co. Inc.
Timeline	:	It will be implemented as of 2024.

9

Code and Name of the Action :

U9- Popularization of Electromobility

Activities to be Carried Out :

- Dynamic pricing will be made based on time and location at charging stations.
- Arrangements will be made in the technical specifications so that the lighting pole units can be used as charging stations.
- Studies will be carried out to determine vehicle charging stations using data analytics based on the locations where electric vehicles are located.
- Regulations regarding the minimum area to be allocated for electric vehicles in the Planned Areas Zoning Regulation and Parking Regulation will be updated on a need-based basis.
- R&D studies will be carried out to alleviate the network load of electric vehicles and charging stations, and optimization applications will be developed in line with the analyses.
- Studies will be carried out to determine the total energy load of electric three-wheeled vehicles and scooters and their efficiency potential will be designated.

Outputs and Indicators	:	Analysis studies, proportion of electric vehicles in newly purchased public passenger vehicles
Responsible Institution	:	Ministry of Transport and Infrastructure, EMRA
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Ministry of Treasury and Finance
Timeline	:	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.

10

Code and Name of the Action :

U10-Increasing Energy Efficiency in Airway Transportation

Activities to be Carried Out :

- Studies will be carried out to increase the use of Sustainable Aviation Fuel.
- An emission tracking system per flight/person will be developed in the airway industry.
- Green conversion of vehicles used in ground handling services at airports will be encouraged.
- Benchmarking studies will be conducted to increase energy efficiency at airports and support mechanisms will be developed.

Outputs and Indicators	:	Benchmarking study, development of support mechanism
Responsible Institution	:	Ministry of Transport and Infrastructure
Relevant Institution/Organization	:	Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, TSE
Timeline	:	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.

11

Code and Name of the Action :

U11-Integrated Development of Smart Transportation Systems and Digitalization for Energy Efficiency

Activities to be Carried Out :

- The use of artificial intelligence-based applications that can detect vehicle and human density will be encouraged, and thus mechanisms will be developed to adjust signaling times.
- Automation systems and load combining and transfer processes in transportation vehicles will be connected to the technological infrastructure.
- All kinds of vehicle and pedestrian movements for the establishment of a National Intelligent Transportation Systems (ITS) Data Management Centre by the Ministry of Transport and Infrastructure, the harmonization of infrastructure and data transfer with Urban Traffic Management Centres and the digitalization of transportation data; Studies will be carried out towards the formation of a mobility management approach supported by smart transportation systems in terms of traffic flow, security, energy efficiency and environment.
- Studies will be carried out to disseminate and develop the national ITS architecture.

Outputs and Indicators : Improvement in traffic density
Responsible Institution : Ministry of Transport and Infrastructure
Relevant Institution/Organization : Ministry of Environment, Urbanization and Climate Change, Ministry of Energy and Natural Resources, Ministry of Industry and Technology, Municipalities
Timeline : It will be implemented as of 2024.

12

Code and Name of the Action :

U12-Dissemination of Multi-Modal and Integrated Transportation Systems

Activities to be Carried Out :

- Work will be carried out on freight transportation on High Speed Train lines, as in the China-Silk Road example.
- In order to highlight combined transportation and use the railway network as actively as possible, infrastructure connections for combined transportation will be improved and cooperation between industry and transportation sectors, especially OIZs, will be increased.

Outputs and Indicators : Infrastructure works
Responsible Institution : Ministry of Transport and Infrastructure
Relevant Institution/Organization : Ministry of Industry and Technology
Timeline : It will be implemented as of 2024.

AGRICULTURE SECTOR

1

Code and Name of the Action :

T1-Encouraging the Renewal of Tractors and Combine Harvesters with Energy Efficient Products

Activities to be Carried Out :

- A support or scrap incentive mechanism will be defined for the renewal of the existing tractor and combine harvester fleet with more energy efficient vehicles, and the necessary financial and legal infrastructure will be prepared for this.
- Efforts will be made to improve the existing support mechanism in tractor purchases, based on the product pattern, land condition and power need according to the size of the land.
- Energy labelling will be made mandatory for agricultural machinery powered by energy.
- Direct sowing and strip-based agriculture will be expanded to provide energy efficiency by reducing field traffic.
- A module will be added to the Farmer Registration System to monitor the energy consumption of tractors/harvesters.
- Agricultural cooperatives that will encourage the use of shared machinery will be supported.

Outputs and Indicators	:	Identification of support or scrap incentive mechanism, number of tractors and combine harvesters replaced
Responsible Institution	:	Ministry of Agriculture and Forestry
Relevant Institution/Organization	:	Ministry of Industry and Technology, Ministry of Treasury and Finance
Timeline	:	The mechanism will be defined and legislative studies will be completed in 2024-2025, and implementation will begin in 2026.

2

Code and Name of the Action :

T2-Improving Energy Efficiency in Agricultural Irrigation

Activities to be Carried Out :

- In order to transform existing open irrigation systems into closed irrigation systems, an inventory of old open system irrigation facilities will be made and their rehabilitation will be carried out within the framework of detailed transition plans.
- Depending on the technical evaluation results, technical and economic support will be provided for the transition from surface irrigation to pressurized irrigation.
- Effective support programs will be designed to increase the efficiency of pumps used in irrigation and implementation results will be monitored.
- Training and awareness-raising activities will be carried out for farmers for resource-efficient water consumption (under-soil drip-irrigation system etc.).
- Studies will be carried out to increase the efficiency of pumped irrigation, and in this context, energy studies will be conducted to determine the energy saving potential in pumped irrigation.

Outputs and Indicators	:	Number of projects to be supported, number of studies to be conducted
Responsible Institution	:	Ministry of Agriculture and Forestry
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, General Directorate of SHW
Timeline	:	It will be implemented as of 2024.

3

Code and Name of the Action :

T3-Supporting Energy Efficiency Projects in the Agriculture Sector

Activities to be Carried Out :

- In greenhouses, animal production structures and product warehouses; Preventing heat losses, waste heat recovery, reducing energy consumption through energy efficient heating-cooling-ventilation applications, and the use of heat pumps, cogeneration or trigeneration applications will be supported when technically possible and cost effective.
- Financial support mechanisms for energy efficiency in the agricultural sector will be defined and strengthened and relevant awareness activities will be carried out.
- Encouragement of projects including land consolidations will continue to be developed.
- Standards will be introduced in in agricultural cold storages and additional support and incentives will continue to be given while taking into account energy efficiency.

Outputs and Indicators	:	Defining the support mechanism, number of projects to be supported
Responsible Institution	:	Ministry of Agriculture and Forestry
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, Ministry of Environment, Urbanization and Climate Change, Ministry of Trade, Agriculture and Rural Development Support Institution (TKDK).
Timeline	:	The legislative infrastructure for defining the support mechanism will be completed in 2024 and implementation will begin in 2025.

4

Code and Name of the Action :

T4-Encouraging the Use of Renewable Energy Resources in Agricultural Production

Activities to be Carried Out :

- The use of solar (photovoltaic, concentrated solar energy systems, etc.) and wind energy in irrigation will be supported. Additionally, the possibilities for implementation of stream-type mini turbines and their compatible irrigation pumps as well as possibilities for implementation of obtaining electrical energy from pressure breaker structures used in agricultural irrigation during the irrigation season will be investigated.
- The use of renewable energy sources, especially geothermal, in agricultural production and storage structures (greenhouses, barns, pens, coops, etc.) will be supported.
- Infrastructure development will be supported for the storage of animal waste and its use as a resource in biogas facilities.
- Special call projects in line with R&D activities will continue to be supported by the General Directorate of Agricultural Research and Policies (TAGEM).
- The longest possible use of forest products and agricultural and forest waste within the framework of the circular economy will be encouraged, and reuse and recycling will be increased.
- In cases where more circular alternatives are not available, facilities that turn agricultural and forest waste into pellets aiming for zero carbon emission will be expanded.
- Awareness-raising activities will continue to disseminate heat pump applications for air conditioning in agricultural production structures (greenhouses, barns, sheepfolds, coops, etc.).
- The use of geothermal resources will be encouraged to ensure efficient use of heating and cooling in specialized organized industrial zones based on agriculture.

Outputs and Indicators	:	Number of projects to be supported, number of studies to be conducted
Responsible Institution	:	Ministry of Agriculture and Forestry
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, TUBITAK, TAGEM, TENMAK
Timeline	:	It will be implemented as of 2024.

START-UP AND DIGITALIZATION

1

Code and Name of the Action :

D1-Supporting Domestic and Innovative Products Related to Energy Efficiency through Public Procurement

Activities to be Carried Out :

- New products developed in the field of energy efficiency will be supported through pre-commercial purchasing method. For this purpose, a project will be carried out to carry out pilot purchases.
- After the trials, it will be shared with public institutions as a good practice example for the dissemination of products whose efficiency and total benefits have been confirmed.

Outputs and Indicators	:	Pilot project
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	Ministry of Industry and Technology
Timeline	:	The project will be developed in 2024 and implemented in 2025.

2

Code and Name of the Action :

D2-Improving the Application Capacity of Start-Ups in Energy Efficiency Projects

Activities to be Carried Out :

- An ecosystem will be created that will help ensure greater participation in energy efficiency projects in Europe.
- Collaboration opportunities, including clustering, will be developed in technoparks and incubation centres to increase the synergies of energy-related start-ups.

Outputs and Indicators	:	Awareness raising activities
Responsible Institution	:	TENMAK
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, Ministry of Industry and Technology, TUBITAK
Timeline	:	The project will be developed in 2024 and implemented in 2025.

3

Code and Name of the Action :

D3-Strengthening the Institutional Infrastructure to Systematically Support Start-Up Activities for Energy Efficiency

Activities to be Carried Out :

- Theme-oriented events will be organized involving academicians, companies and universities in order to develop and produce energy efficiency-oriented domestic products.
- Mentoring support will be provided to start-ups working in the field of energy and energy efficiency in areas such as planning, growth, quality management, branding and financial management.

Outputs and Indicators	:	Awareness raising activities
Responsible Institution	:	TENMAK, TUBITAK
Relevant Institution/Organization	:	Ministry of Energy and Natural Resources, Ministry of Industry and Technology
Timeline	:	It will be implemented as of 2024.

4

Code and Name of the Action :

D4-Establishing New Incentives to Increase the Contribution of Start-Ups to Energy Efficiency

Activities to be Carried Out :

- Dedicated incentives for demonstration will be created for improved products.
- Within the scope of VAP support, invited applications will be received in a way that will contribute to the development of the start-up ecosystem and prioritize digitalization projects.
- Software studies in energy efficiency will be encouraged.

Outputs and Indicators	:	Creating an incentive mechanism
Responsible Institution	:	The Ministry of Energy and Natural Resources
Relevant Institution/Organization	:	Ministry of Industry and Technology, TUBITAK, TENMAK
Timeline	:	Legislation and infrastructure studies will be developed in 2024, and implementation will begin in 2025.

Energy Efficiency 2030

Strategy and 2nd National Energy Efficiency Action Plan Goals, Objectives and Actions (2024-2030)

STRATEGIC GOAL 1 :

To make energy efficiency a policy component taken into account in all decision-making processes, within the framework of the perspective of strengthening energy supply security, achieving the net zero emission goal and increasing total factor efficiency.

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
1.1: To ensure that energy efficiency is considered a priority factor in all areas of the economy and to consider it as an important part of the net zero emission goal, to make arrangements in policy design processes to take into account the relevance of policy and legislation to energy and resource efficiency.					
S2	Providing Support to Increase the Number and Diversity of Innovative Energy Efficiency Projects in Industry	MENR		It will be implemented as of 2024.	Legislative regulation, amount of support
S6	Supporting Carbon Intensity and Specific Energy Consumption Reduction in Industry	MENR		Legislative arrangements will be made in 2024 and will be implemented in 2025.	Legislative regulation, amount of support
B8	Increasing Minimum Energy Performance Criteria in New Buildings	MoEUCC	MENR	It will be implemented as of 2024.	Legislative regulations
Y1	Establishing Energy Management Systems and Increasing Their Effectiveness	MENR	MoEUCC MoIT	It will be implemented as of 2024.	Number of applications and inspections in sectors
Y3	Improving the Energy Efficiency Investment Environment	MoTF MENR	MoIT KOSGEB SEDDK TSE	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Legislative regulation

STRATEGIC GOAL 2:

To increase awareness-raising activities for all segments of society and to strengthen cooperation with external stakeholders in order to ensure that energy efficiency is evaluated within a social mobilization approach.

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
2.1: Carrying out energy efficiency-focused awareness and capacity building activities for both the broad public and certain competency groups.					
Y6	Conducting Awareness, Training and Awareness Raising Activities	MENR MoNE MoIT MoEUCC KOSGEB YOK	Public, Private Sector and Non-Governmental Organizations	It will be implemented as of 2024.	Awareness raising activities, increase in energy efficiency awareness
E3	Encouraging Energy Efficiency through Billing Information and Tariffs	EMRA	MENR	Legislative studies will be carried out in the 2024-2025 period and will be implemented as of 2026.	Legislative regulation
D2	Improving the Application Capacity of Start-Ups in Energy Efficiency Projects	TENMAK	MENR MoIT TUBITAK	The project will be developed in 2024 and implemented in 2025.	Awareness raising activities
D3	Strengthening the Institutional Infrastructure to Systematically Support Start-Up Activities for Energy Efficiency	TUBITAK TENMAK	MENR MoIT	It will be implemented as of 2024.	Awareness raising activities

STRATEGIC GOAL 3:

To support investments that will encourage green transition and increase energy efficiency, and to accelerate the transition with innovative financing tools.

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
3.1: To prioritize energy efficiency benefits in tax and incentive practices in order to utilize financial resources in effective and high value-added areas.					
B10	Establishing Financial Incentives for the Renovation of Existing Buildings	MoTF	MoEUCC MENR MoIT	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Legislative regulations
T1	Encouraging the Renewal of Tractors and Combine Harvesters with Energy Efficient Products	MoAF	MoIT MoTF	The mechanism will be defined and legislative studies will be completed in 2024-2025, and implementation will begin in 2026.	Identification of support or scrap incentive mechanism, number of tractors and combine harvesters replaced
S9	Dissemination of Energy Efficient Products in Industry	MoIT	MENR	Legislative arrangements will be made in 2024 and 2025 and will be implemented in 2026.	Developing the control mechanism and incentive system
U1	Developing Effective Incentive Mechanisms for Increasing Energy Efficiency in the Transportation Sector	MoTF MoTI	MoEUCC MENR MoIT	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Development of tax system, establishment of emission monitoring system
Y4	Supporting Energy Efficiency Projects with Energy Efficiency Competitions	MENR		Legislative arrangements will be made in 2024 and will be implemented as of 2025.	Number of projects to be supported and amount of support

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
D1	Supporting Domestic and Innovative Products Related to Energy Efficiency through Public Procurement	MENR	MoIT	The project will be developed in 2024 and implemented in 2025.	Pilot Project
3.2: Increasing the share of energy efficiency in innovative financing instruments such as sector or field-themed loans, green or sustainable loans, green or sustainability-linked bonds and sukuk, and field-specific advantageous fund allocations					
S11	Carrying out Activities to Ensure Energy Efficiency and Emission Trading are Handled Together	MoTF	MoEUCC MENR TSE	Legislative arrangements will be made in the 2024-2026 period and will be implemented as of 2027.	Legislative regulation, number of energy efficiency projects supported and amount of support
Y2	Improving Energy Efficiency Financing Opportunities	MoTF	MENR MoEUCC	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Legislative regulation

STRATEGIC GOAL 4:

To carry out a comprehensive improvement program in which the public will play a leading role in reducing carbon emissions with energy efficient solutions and approaches in buildings.

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
4.1: Establishing an effectively functioning heat market, encouraging district heating and cooling systems, and carrying out pilot applications in this regard					
B6	Encouraging the Use of Central and District Heating/Cooling Systems	MENR Municipalities	MoEUCC ILBANK	It will be implemented as of 2024.	Number of residences to be connected to district heating
E1	Establishing an Effectively Functioning Heat Market Within the Framework of Energy Transition Goals	MENR	MoEUCC	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.	Legislative regulation, guidance documents, GIS-based mapping
4.2: Improving energy efficiency in public service buildings and lodgings, including local administrations, as well as publicly owned facilities, infrastructure investments and service areas (wastewater treatment plants, pumping stations, airports, etc.).					
B4	Increasing Energy Efficiency in Municipal Services	MENR MEUC	MoAF ILBANK	It will be implemented as of 2024.	Number of projects and amount of savings
4.3: To continue support and incentive practices for the rehabilitation, insulation and transition of residential and commercial buildings into high energy performance structures					
B2	Conducting Detailed Analysis Studies on Energy Efficiency Potential in Buildings	MENR	MoEUCC	It will be implemented as of 2024.	Number of studies, comparison studies

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
B5	Rehabilitation of Existing Buildings and Improving Energy Efficiency	MENR MoEUCC	MoTF	It will be implemented as of 2024.	Amount of savings to be achieved
B7	Encouraging the Certification of Sustainable Green Buildings and Settlements	MoEUCC	MENR	It will be implemented as of 2024.	Number of certified green buildings/ settlements
B11	Improving Technical Capacity on Energy Efficiency Applications in Buildings	MENR	MoEUCC	It will be implemented as of 2024.	Training materials, number of people trained
4.4: To ensure the development of institutional, technical and financial infrastructures to make energy efficiency studies in public buildings sustainable					
B3	Improving Energy Efficient and Conversion in Public Buildings	MENR	MoEUCC	It will be implemented as of 2024.	Ratio of achieving savings goal, EPC number
Y7	Adopting a Sustainable Business and Procurement Approach in the Public Sector	PPI	MENR	It will be implemented as of 2024.	Awareness raising activities

STRATEGIC GOAL 5:

To increase the use of energy efficient equipment, systems and technologies, especially digital applications and innovative technologies, and to support their development primarily with domestic opportunities

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
5.1: To support the development and dissemination of digital technologies that will increase energy efficiency and/or contribute to the monitoring of energy performance, especially the Internet of Things, smart sensors and open data platforms, with domestic resources					
D4	Establishing New Incentives to Increase the Contribution of Start-Ups to Energy Efficiency	MENR	MoIT TUBITAK TENMAK	Legislation and infrastructure studies will be developed in 2024, and implementation will begin in 2025.	Creating an incentive mechanism
Y5	Development of the Energy Efficiency Portal in Line with Net Zero Goals	MENR		It will be implemented as of 2024.	Improved software and monitoring studies
5.2: To support R&D activities for new generation applications and technologies such as electricity storage, low-carbon hydrogen, carbon capture, utilization and storage, direct reduced iron, waste-derived fuel, hybrid electric melting furnace					
S3	Dissemination of Energy Efficiency Applications for a Low-Carbon, Green and Digital Transformation in the Industry Sector	MoIT	MoEUCC MEN	It will be implemented as of 2024.	Annual energy intensity and reduction rate in specific energy consumption in sub-sectors
Y10	Strengthening R&D Activities to Increase Energy Efficiency	TUBITAK TENMAK	MoEUCC MENR MoTI EMRA	Legislative arrangements will be made in 2024 and will be implemented as of 2025.	Number of R&D projects realized

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
5.3: To support the development and use of heat pump and cogeneration technologies that are innovative and easy to implement on a large scale					
S1	Dissemination of Cogeneration Systems in Large Industrial Facilities Using Heat	MENR	MoIT	It will be implemented as of 2024.	Evaluation report
Y9	Taking Administrative Measures to Expand the Use of Heat Pumps	MENR	MoEUCC MoIT	It will be implemented as of 2024.	Awareness raising activities

STRATEGIC GOAL 6:

To increase projects and investments for energy efficiency in a way that will encourage the green transition efforts of the industry sector

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
6.1: Carrying out supportive activities to improve energy efficiency in all branches of industry, especially the manufacturing industry					
S5	Mapping the Energy Saving Potential in Industry	MENR		The sectoral scope of benchmarking studies will be expanded in 2024 and 2025, and the savings map will be updated in 2026.	Savings map to be updated
S8	Strengthening Capacity Building and Sharing Activities for the Dissemination of Successful Energy Efficiency Practices in the Industry Sector	MENR	TSE	It will be implemented as of 2024.	Number of people trained, reporting guidelines
S10	Dissemination of Energy Consumption Monitoring Systems in Industry	MENR	MoIT	It will be implemented as of 2024.	Guidance documents, number of trainings
6.2: Providing support for energy efficiency projects such as industrial symbiosis, waste heat recovery, and reuse of waste as second raw material in line with circular economy principles					
S7	Dissemination of Circular Economy Approaches to Increase Energy Efficiency of the Industry Sector	MoIT MoEUCC	MENR	It will be implemented as of 2024.	Number of analysis
6.3: Encouraging the use of renewable energy and alternative fuels to increase total factor efficiency in industry					
E9	Taking Measures to Develop Hydrogen Technology in Compatibility with National Energy Goals	MENR	TENMAK TUBITAK EMRA	It will be implemented as of 2024.	Situation analysis

STRATEGIC GOAL 7:

To ensure that energy efficient solutions and applications are given priority in the transportation sector in order to balance the high energy use caused by increased mobility, and to popularize multi-modal and integrated transportation systems

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
7.1: Taking measures to support the transition of the national vehicle fleet towards low-emission and energy-efficient options					
U3	Increasing Energy Efficiency in Road Freight Transport	MoTI	MoTF MoEUCC MENR	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Ratio of alternative fuel vehicles in total vehicle stock
U4	Development of Micro-Mobility in Urban Transportation	MoEUCC Municipalities	MoIA MENR MoTI	It will be implemented as of 2024.	Bicycle path to be built (km)
U5	Development of Mobility Measures to Increase Energy Efficiency in Urban Transportation	MoEUCC Municipalities	MoIA MENR MoTI PTT	It will be implemented as of 2024.	Improvement in traffic density, planning and physical arrangement studies
U6	Increasing the Efficiency of Public Transport and Accelerating Energy Transition	MoEUCC Municipalities	MENR ILBANK	It will be implemented as of 2024.	Number of electric buses used in public transportation
U9	Popularization of Electromobility	MoTI EMRA	MoEUCC MENR MoTF	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.	Analysis studies, proportion of electric vehicles in newly purchased public passenger vehicles

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
7.2: Strengthening environmentally and human-friendly infrastructure investments that will ensure energy efficiency in urban transportation and developing smart transportation systems within the framework of the smart cities approach					
U2	Establishing Effective Monitoring Systems by Digitizing Transportation Sector Data	MoTI TURKSTAT	MoEUCC MENR MoIA Municipalities Union of Notary Publics	Technical capacity will be strengthened in the 2024-2026 period and will be implemented as of 2027.	Establishing data collection and monitoring systems
U11	Integrated Development of Smart Transportation Systems and Digitalization for Energy Efficiency	MoTI	MoEUCC MENR MoIT Municipalities	It will be implemented as of 2024.	Improvement in traffic density
7.3: Supporting less energy-intensive transportation modes such as railway and maritime, increasing the use of sustainable aviation fuel, and expanding multi-modal and integrated transportation systems in passenger and freight transportation					
U7	Strengthening Maritime Transportation	MoTI	MENR	It will be implemented as of 2024.	Share of maritime transport
U8	Strengthening Railway Transport and Increasing Energy Efficiency in the Sector	MoTI	MENR MoTF EMRA TCDD TCDD Transport Co. Inc.	It will be implemented as of 2024.	Share of rail transport
U10	Increasing Energy Efficiency in Airway Transportation	MoTI	MoEUCC MENR TSE	Legislative studies will be carried out in 2024 and 2025 and will be implemented as of 2026.	Benchmarking study, development of support mechanism
U12	Dissemination of Multi-Modal and Integrated Transportation Systems	MoTI	MoIT	It will be implemented as of 2024.	Infrastructure works

STRATEGIC GOAL 8:

To implement energy-efficient agricultural practices compatible with the objectives of increasing the competitiveness of the agricultural sector, improving agricultural irrigation efficiency and making the food supply chain sustainable

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
8.1: To carry out the effective use of water at every stage together with energy efficient practices in accordance with the resource efficiency approach					
T2	Improving Energy Efficiency in Agricultural Irrigation	MoAF	MENR General Directorate of SHW	It will be implemented as of 2024.	Number of projects to be supported, number of studies to be conducted
8.2: To ensure food security, to disseminate sustainable agricultural practices and to promote energy efficiency measures in the agricultural value chain to create a resilient agricultural sector					
T3	Supporting Energy Efficiency Projects in the Agriculture Sector	MoAF	MENR MoEUCC MoTI TKDK	The legislative infrastructure for defining the support mechanism will be completed in 2024 and implementation will begin in 2025.	Defining the support mechanism, number of projects to be supported

STRATEGIC GOAL 9:

To ensure market transition of environmentally friendly, circular natured and energy efficient products

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
9.1: To continue the activities carried out to increase the prevalence of environmentally friendly energy efficient products, devices, equipment and machines, and to make arrangements in accordance with the new obligations that will come to the fore within the framework of eco-design principles					
B1	Increasing the Implementation Capacity of Energy Efficient Materials and Technologies Used in the Construction Industry	MoEUCC	MENR MoIT	It will be implemented as of 2024.	Guidance documents
S4	Implementation of Energy Efficiency Performance Standards and Environmentally Friendly Design, Production and Labeling System in Products and Devices	MoIT MoEUCC	MENR	It will be implemented as of 2024.	Legislative regulation

STRATEGIC GOAL 10:

To increase efficiency throughout the entire value chain of energy and reduce losses in production, transmission and distribution

Action No	Action	Responsible Institution	Relevant Institution	Application Period	Monitoring Indicators
10.1: To realize the objective of increasing the share of renewable energy sources in energy supply within the framework of national energy policies, with an integrated approach with energy efficiency measures					
T4	Encouraging the Use of Renewable Energy Resources in Agricultural Production	MoAF	MENR TUBITAK TAGEM TENMAK	It will be implemented as of 2024.	Number of projects to be supported, number of studies to be conducted
B9	Expanding the Use of Renewable Energy in Buildings	MoEUCC	MENR	It will be implemented as of 2024.	Installed capacity of renewable energy in buildings
10.2: Increasing energy efficiency in all activities related to the production, transmission and distribution of energy raw materials and electricity					
E2	Implementation of Efficiency Standards for Natural Gas Infrastructure	MENR	BOTAŞ Natural Gas Distribution Companies	Legislative studies will be carried out in the 2024-2025 period and will be implemented as of 2026.	Legislative regulation
E4	Dissemination of Smart Meters	EMRA	MENR	Project work will be completed in the 2024-2025 period, and smart meters will begin to become widespread as of 2026.	Smart meter dissemination rate
E5	Increasing Energy Efficiency in General Lighting	MENR	TEDAŞ Electricity Distribution Companies	It will be implemented as of 2024.	Number of LED fixtures, amount of savings
E6	Increasing Energy Efficiency in Electricity Transmission and Distribution Activities	TEİAŞ TEDAŞ Electricity Distribution Companies	MENR EMRA	It will be implemented as of 2024.	Electrical grid loss rate
E7	Increasing Efficiency in Electricity Generation Power Plants	MENR	EÜAŞ Electricity Generation Facilities	It will be implemented as of 2024.	Benchmarking study, guidance document
10.3: Creating the market infrastructure for demand side participation and virtual power plant applications, developing the energy efficiency obligation system					
E8	Creating Market Infrastructure for Demand Side Participation and Aggregator	MENR	EMRA EPİAŞ TEİAŞ	It will be implemented as of 2025.	Benchmarking study, guidance document
Y8	Development of the Energy Efficiency Obligation Program	MENR	EMRA EPİAŞ Distribution and Supply Companies	Legislative studies will be carried out in the 2024-2026 period and will be implemented as of 2027.	Legislative regulation, development of liability program

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