ENERGY EFFICIENCY IN TÜRKİYE

May, 2025

REPUBLIC OF TÜRKİYE
MINISTRY OF ENERGY AND
NATURAL RESOURCES

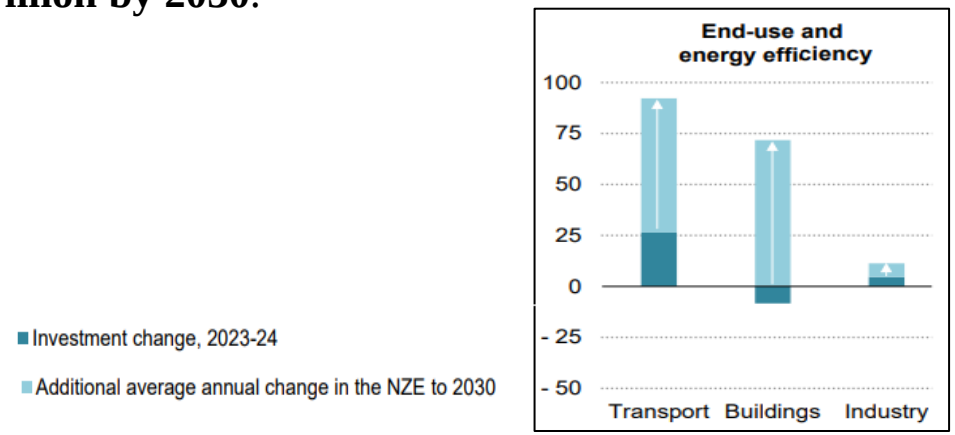
Energy Outlook

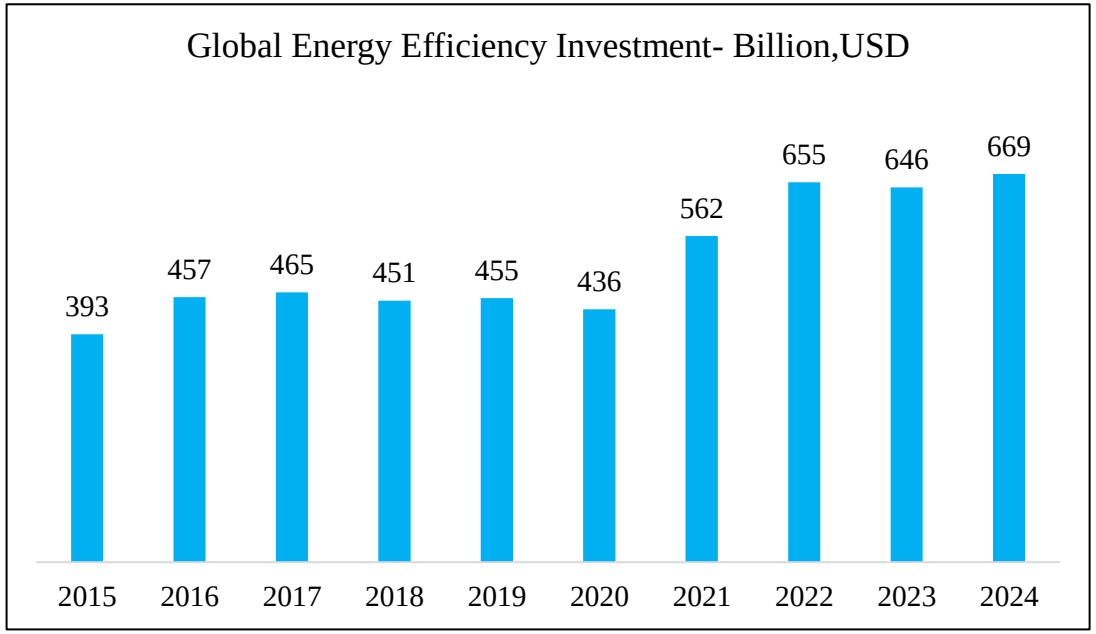
- ✓ In 2023, energy demand in the industry sector increased by 2%, while emissions rose by less than 1%.
- ✓ Energy efficiency is the **single largest measure** to avoid energy demand in the Net Zero Emissions by 2050 Scenario
- ✓ The share of electricity in industry energy demand increases , rising from 22% in 2023 to **30%** in 2030 in the NZE
- ✓ Energy efficiency improvements could deliver **over a third of the CO_2 reductions needed by 2030** on the path to the net zero target by 2050, through faster electrification, improved technology, and behaviour change

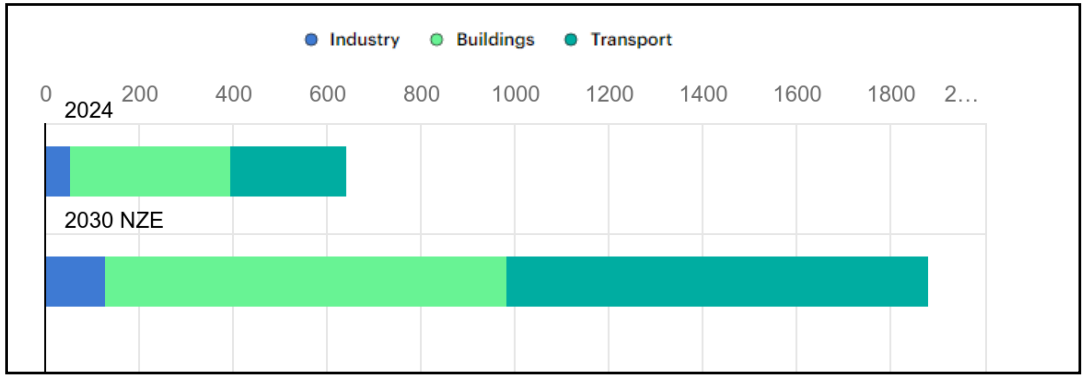
				Net Zero Emissions by 2050 (EJ)				Shares (%)			CAAGR (%) 2023 to:	
	2010	2022	2023	2030	2035	2040	2050	2023	2030	2050	2030	2050
Total final consumption	377	437	445	415	382	361	344	100	100	100	-1.0	-0.9
Industry	143	170	173	178	173	167	157	100	100	100	0.4	-0.4
Electricity	27	38	39	53	62	69	78	22	30	50	4.7	2.6
Liquid fuels	29	34	34	34	31	28	23	20	19	15	-0.2	-1.5
Oil	29	34	34	33	30	27	22	20	19	14	-0.4	-1.7
Gaseous fuels	24	32	33	32	29	26	21	19	18	13	-0.3	-1.6
Biomethane	0	0	0	1	2	3	4	0	1	3	45	15
Hydrogen	-	0	0	1	2	3	5	0	0	3	164	37
Unabated natural gas	21	28	29	25	19	13	4	17	14	2	-1.9	-7.4
Natural gas with CCUS	0	0	0	1	2	3	5	0	0	3	48	19
Solid fuels	58	58	59	51	43	36	28	34	28	18	-2.1	-2.8
Modern solid bioenergy	8	11	11	15	17	19	21	6	8	13	4.5	2.4
Unabated coal	48	44	45	32	21	12	1	26	18	1	-4.5	-12
Coal with CCUS	-	0	0	1	2	3	4	0	0	3	92	27
Heat	5	8	8	7	6	5	3	5	4	2	-1.7	-4.0
.Chemicals	37	49	50	54	54	53	50	29	30	32	1.0	-0.1
Iron and steel	31	36	37	33	30	28	25	21	19	16	-1.5	-1.4
Cement	9	12	12	11	11	10	10	7	6	6	-1.2	-0.7
Aluminium	5	7	7	7	7	6	5	4	4	3	0.2	-1.1

Energy Efficiency Outlook

- ✓ Global end-use investment has seen little growth during the 2022-2024 period, hindered by rising costs due to inflation and high interest rates.
- ✓ In the Net Zero Scenario, investment in efficient buildings, transportation, and industry triples from about USD 650 billion annually today to nearly **USD 1.9 trillion by 2030**.







Türkiye’s Macro Indicators

Economy

2023: %5,1 ↑
2013-2023: 776→1255 bn$ ↑
(bn 2015$)

Climate Change

2022 GHG Emissions: 558.2 $MtCO_2$
2012-2022: 23% ↑
Energy Sector Share: 72%

Industrialization

2023: 36,5 Mtoe
2013-2023: 32% ↑

Energy Demand

2013-2023 Period:
Primary Energy Supply: 36% ↑
Final Energy Consumption: 38% ↑

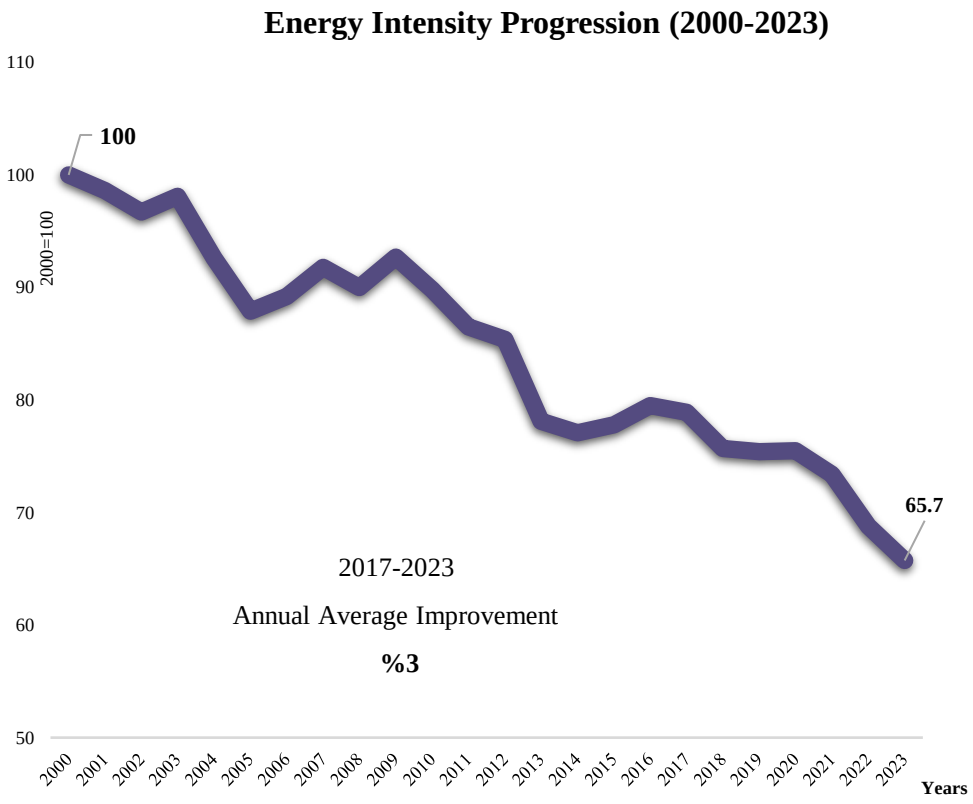
Population

2023 85.4 million
2013-2023: 11% ↑

Energy Intensity

2013-2023 Period:
Primary Energy Intensity : 16.0% ↓
Final Energy Intensity : 14.2% ↓

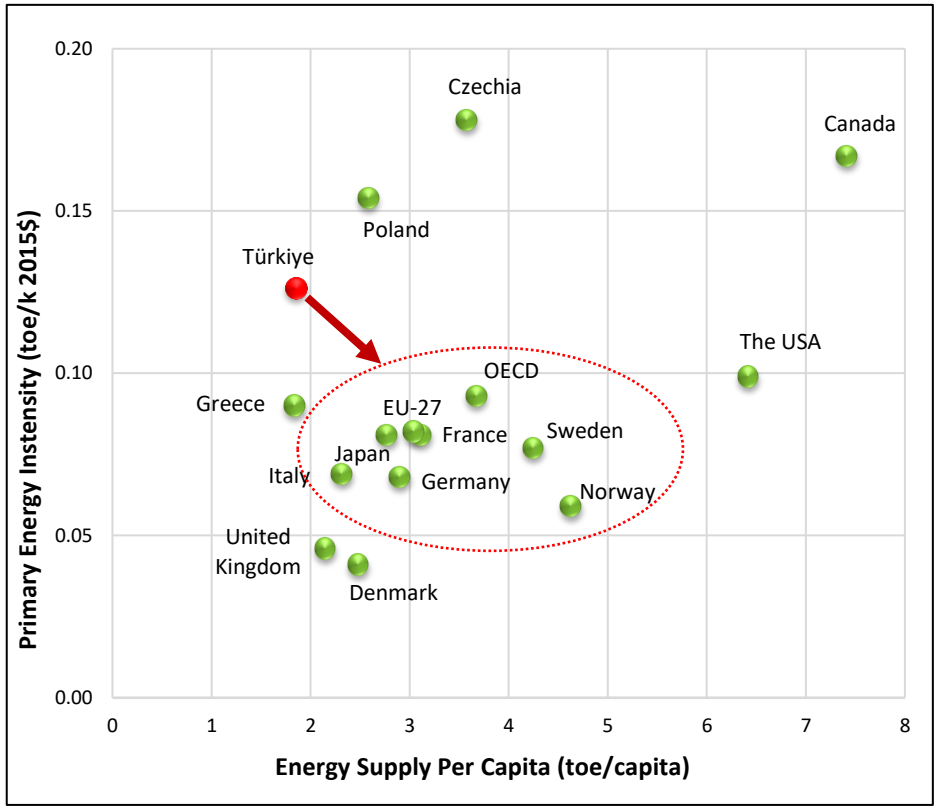
Türkiye’s Energy Intensity Progression and Potential



Primary Energy Intensity

2023: **%4,5** ↓

2000-2023: **%34,3** ↓



In 2022, Türkiye achieved a high rate of improvement with 6.2%, which is above the 4% improvement targeted by the International Energy Agency in line with its zero emission targets.

Legislative Framework

2007

- Energy Efficiency Law

2008-2011

- Regulation on Energy Performance of Buildings
- Regulation on Procedures and Principles on Increasing Energy Efficiency in Transportation
- Regulation on Eco-Desing of Energy Related Products
- Energy Performance Contracts

2012

- Energy Efficiency Strategy Paper

2018

- National Energy Efficiency Action Plan
- Energy Efficiency Audit Regulation

2019

- Public Buildings 15% Saving Target by 2023

2021

- 2053 Net-Zero Target
- Communique on Implementation of Energy Performance Contracts in the Public Buildings

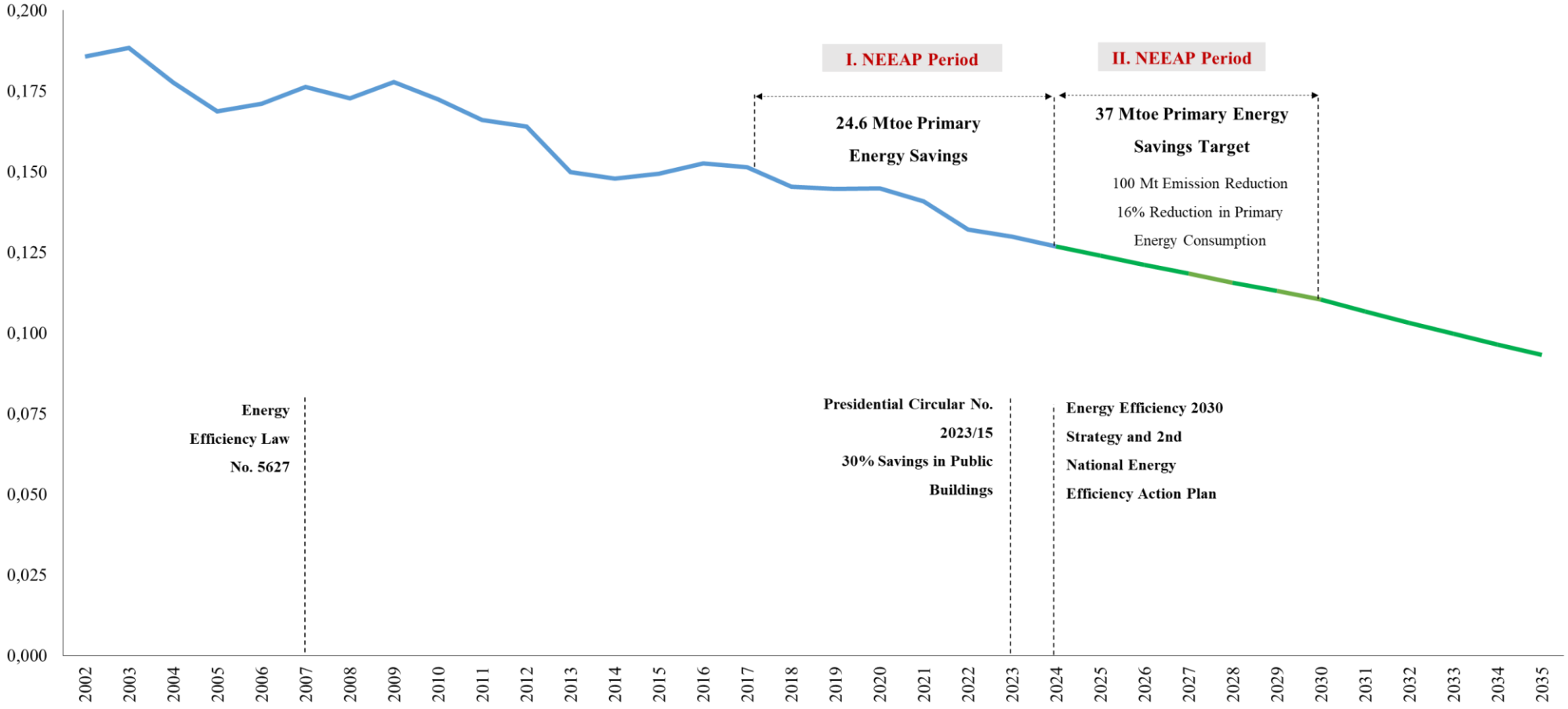
2023

- Public Buildings 30% Saving Target by 2030

2024

- Energy Efficiency 2030 Strategy and 2nd NEEAP

Türkiye’s Energy Intensity Progression and Potential



By 2030:

2 GW Electrolyzer Installed Capacity

$6.9 Billion Investment for Support the Green Transition of Industry

$700 Million Investment for the Energy-Efficient Renovation of Public Buildings

500,000 Heat Pumps Installation

2002-2023

Energy Intensity Improved by 32.3%

2002-2023

Energy Efficiency Efforts Achieved Savings of 56 Mtoe (approximately 66 bcm of NG).

2024-2035

at least 50 Mtoe (approximately 59 bcm of NG) in savings is expected to be achieved.

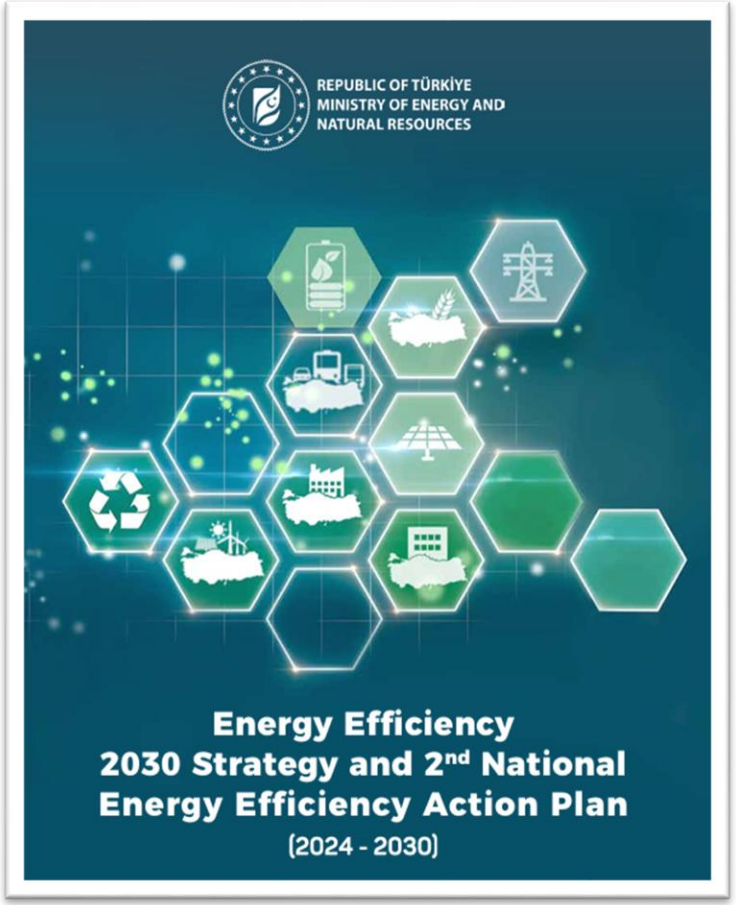
Energy Efficiency 2030 Strategy and 2nd NEEAP

- ✓ 10 strategic goals
- ✓ 61 actions in 7 sectors
- ✓ Energy efficiency investment of **20.2 billion USD** between 2024-2030
  - 4.9 billion USD by public sector
  - 15.3 billion USD by private sector
- ✓ Cumulative Primary Energy Saving: **37.1 Mtoe**

  = Corresponds to a **16% reduction in Türkiye's primary energy consumption**
- ✓ 100 6 million tons of CO_2 eq. greenhouse gas reduction

Energy Efficiency 2030 Strategy and 2nd NEEAP

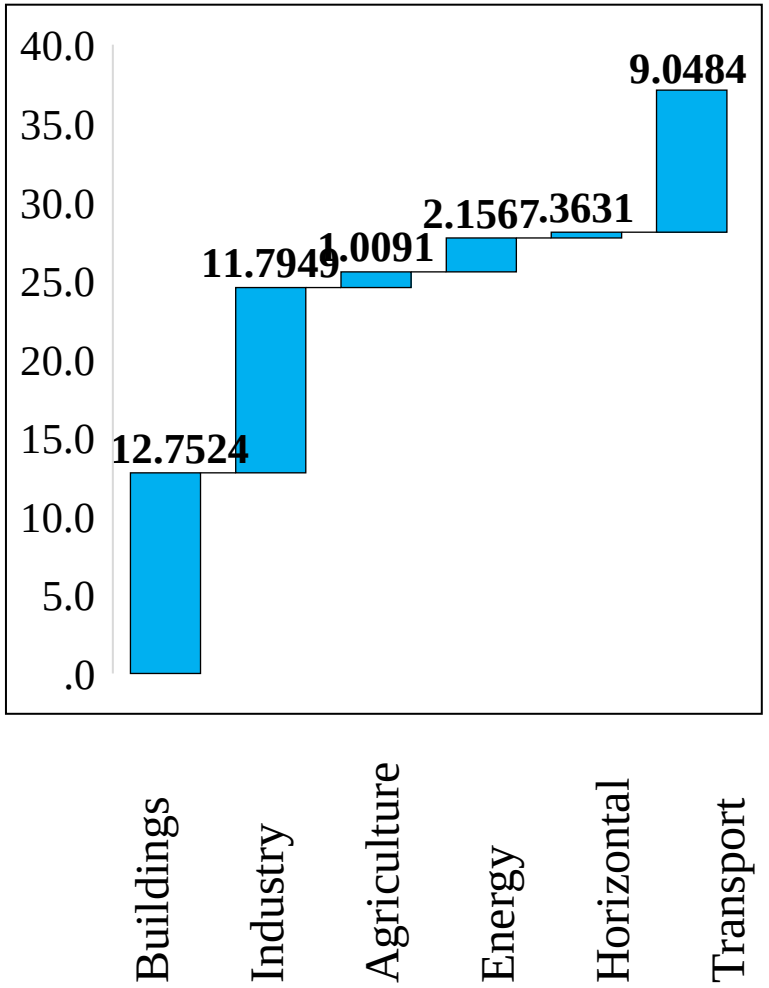
2024-2030



2030 Energy Efficiency Vision, Strategy and 2nd NEEAP

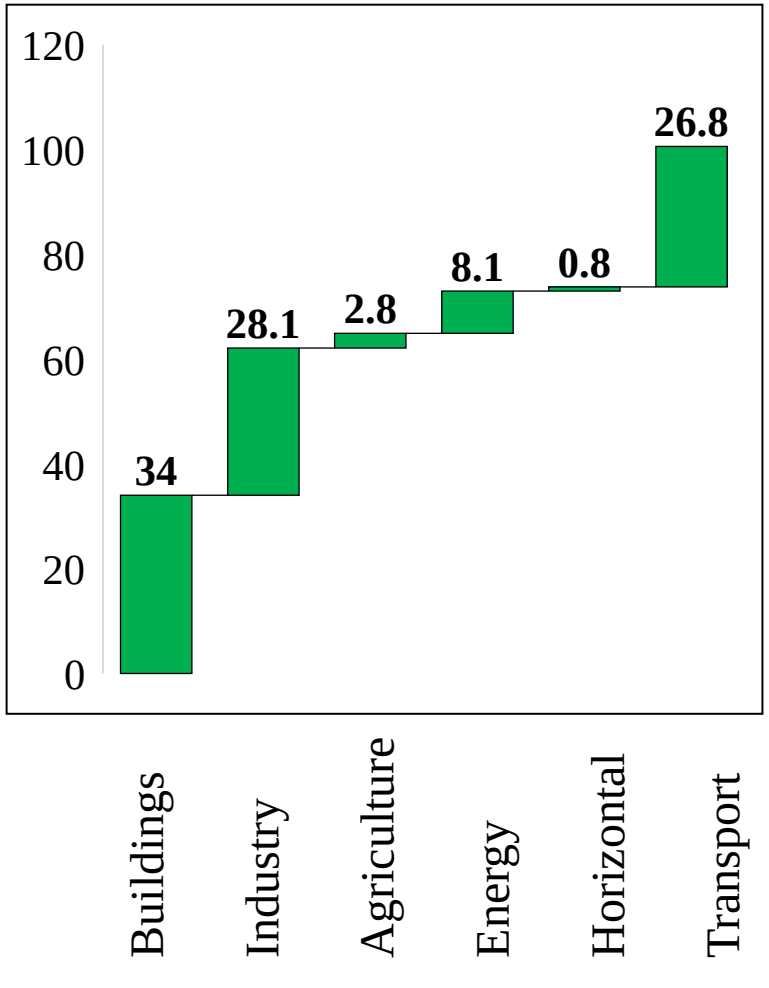
Primary Energy Savings

- 37,1 MTEP



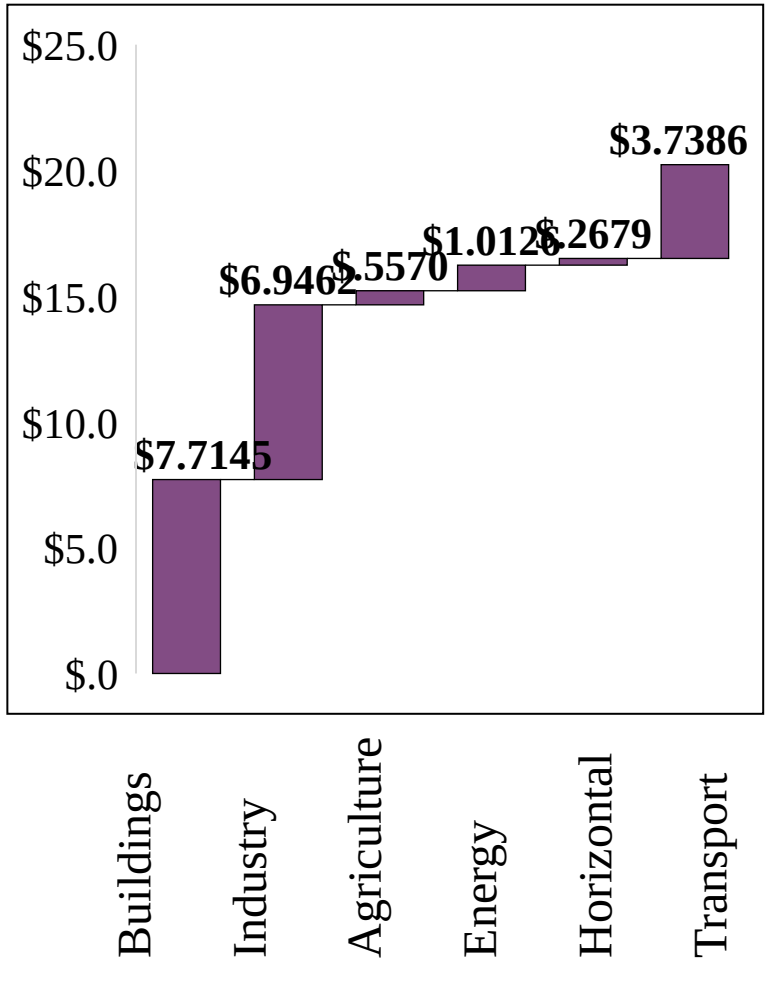
Emission Reduction

- 100,69 Mt $CO_{2eq.}$



Investment Need

- 20,2 Billion USD

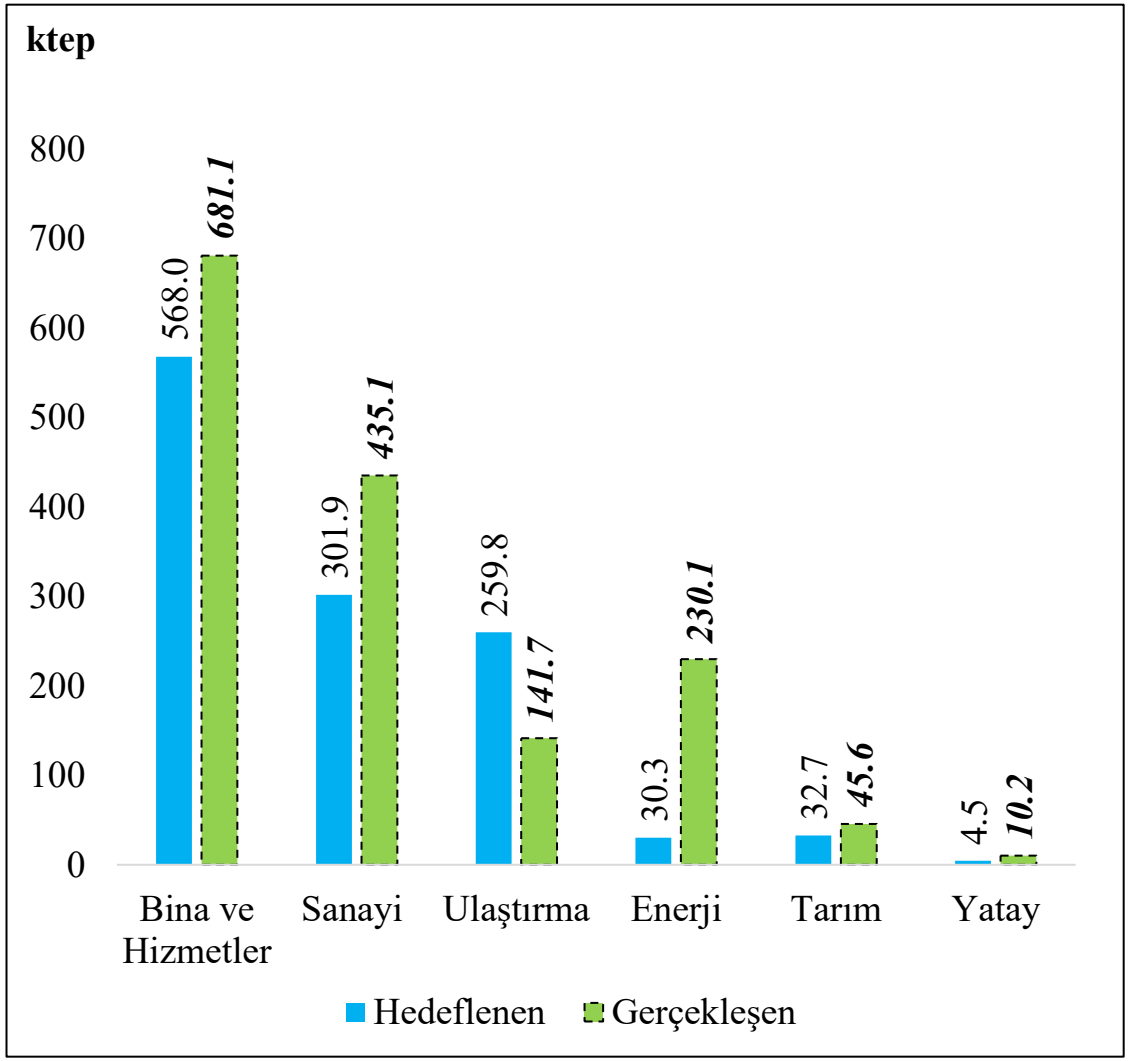


Impact Analysis of the 2024- II.NEEAP

In 2024, Türkiye achieved:

- **1.544 million toe of energy savings,**
- **4.775 million tonnes of CO_2-eq**. emissions reduction,
- **3.352 billion USD** in investments.

The achievement rate for the energy saving target was recorded at **129%.**



INDUSTRY SECTOR in 2nd NEEAP

- ✓ S1- Dissemination of Cogeneration Systems in Large Industrial Facilities Using Heat
- ✓ S2- Providing Support to Increase the Number and Diversity of Innovative Energy Efficiency Projects in Industry
- ✓ S3- Dissemination of Energy Efficiency Applications for a Low-Carbon, Green and Digital Transformation in the Industry Sector
- ✓ S4-Implementation of Energy Efficiency Performance Standards and Environmentally Friendly Design, Production, Labelling System in Products and Devices
- ✓ S5-Mapping Energy Saving Potential in Industry
- ✓ S6-Supporting the Reduction of Carbon Intensity and Specific Energy Consumption in Industry
- ✓ S7-Dissemination of Circular Economy Approaches to Increase the Energy Efficiency of the Industry Sector
- ✓ S8-Strengthening Capacity Building and Sharing Activities for the Dissemination of Successful Energy Efficiency Practices in the Industry Sector
- ✓ S9-Dissemination of Energy Efficient Products in Industry
- ✓ S10-Dissemination of Energy Consumption Monitoring Systems in Industry
- ✓ S11- Carrying out Activities to Ensure Energy Efficiency and Emission Trading are Handled Together

Policies and Legislative Framework

Obligations

- **Employ Energy Manager**
- **Report Energy Consumption/Generation Data through ENVER Portal**
- **Establish ISO 50001 Energy Management System**
- **Conduct Energy Audits**

Incentives

Programs

- ✓ Monitoring and Inspection Activities
- ✓ Promoting ESCO markets
- ✓ Benchmarking Studies
- ✓ International Collaboration
- ✓ Awareness Raising and Behavioral Changing Activities

Energy Efficiency Incentives in Türkiye

İmalat Sanayi

767 VAP

1,2 milyar TL yatırım

287 milyon TL destek

1,6 milyar TL/yıl tasarruf

167 bin TEP/yıl tasarruf

41 Gönüllü Anlaşma

265 milyon TL yatırım

39 milyon TL destek

124 milyon TL/yıl tasarruf

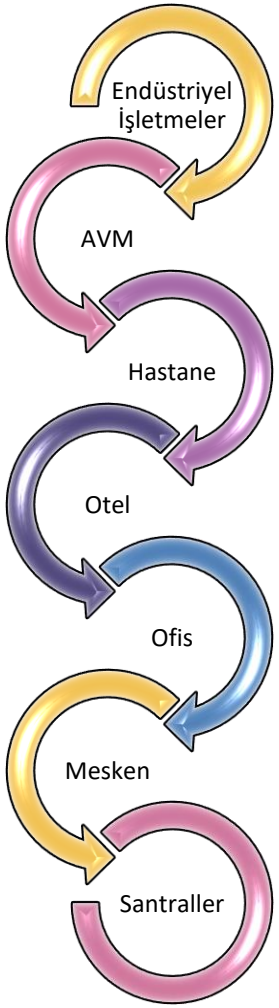
17 bin TEP/yıl tasarruf

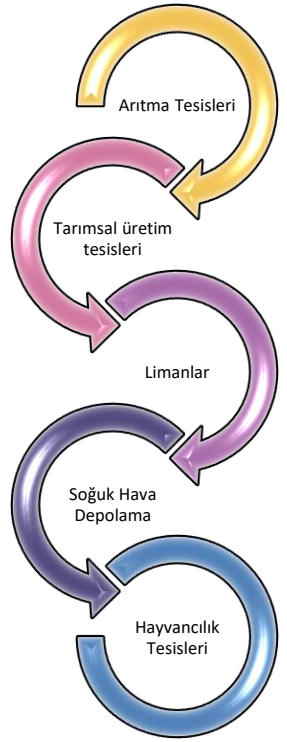
14 EV yatırımı

2 milyar TL yatırım

911 milyon TL/yıl tasarruf

47 bin TEP/yıl tasarruf





Bina | Tarım | Hizmet | Ulaştırma | Enerji

Energy Efficiency Incentives in Türkiye

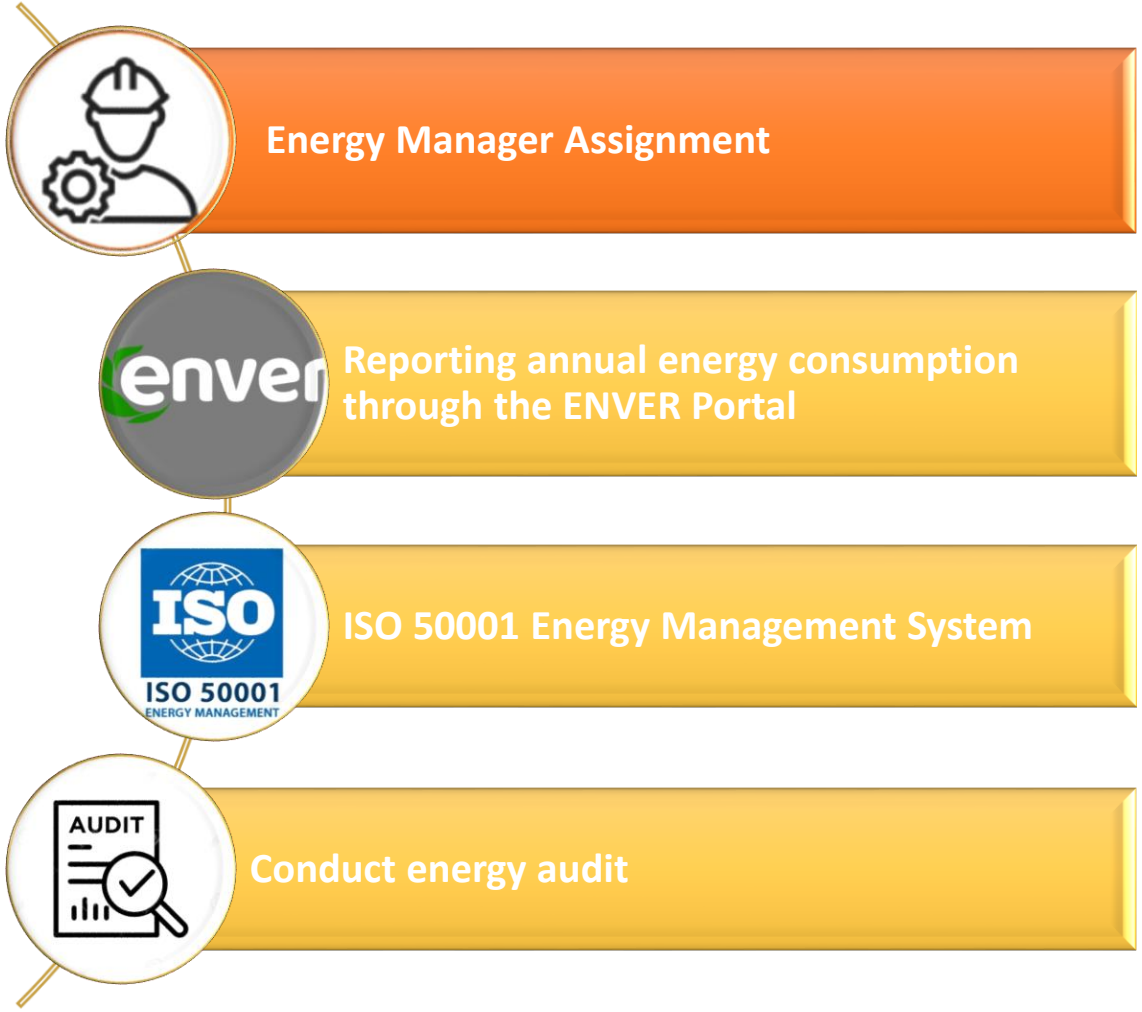
- ✓ An amendment has been made to the Energy Efficiency Law No. 5627.
- ✓ With the new regulation, the sectoral restriction has been removed for those wishing to benefit from efficiency improvement project supports
- ✓ The 5 million TL project cost limit, which posed an obstacle to the implementation of high energy-saving potential projects, has been removed

- ✓ The support amount provided for projects has been increased tenfold**, from 1.5 million TL to 15 million TL**
- ✓ up to 30% of the total project cost will be covered, with a maximum support limit of 15 million TL per project..

Data Collection Criteria and Legal Obligations

Those who have obligations in accordance with the Energy Efficiency Law No. 5627;

- ✓ **Industrial Enterprises** with Annual Energy Consumption ≥ **1,000 toe**
- ✓ **Public Buildings** with Annual Energy Consumption ≥ **250 toe** or Floor Area ≥ **10,000 m²**
- ✓ **Commercial and Service Buildings** with Annual Energy Consumption ≥ **500 toe** or Floor Area ≥ **20,000 m²**
- ✓ **Power Plants** with installed capacity ≥ **100 MW** and
- ✓ **Organized Industrial Zones** with **at least fifty active enterprises** in the zone



❖ The Presidential Decree on Energy Saving in Public Buildings has set a minimum energy saving target of 30% by 2030 for all **public buildings** obligated to assign an energy manager.

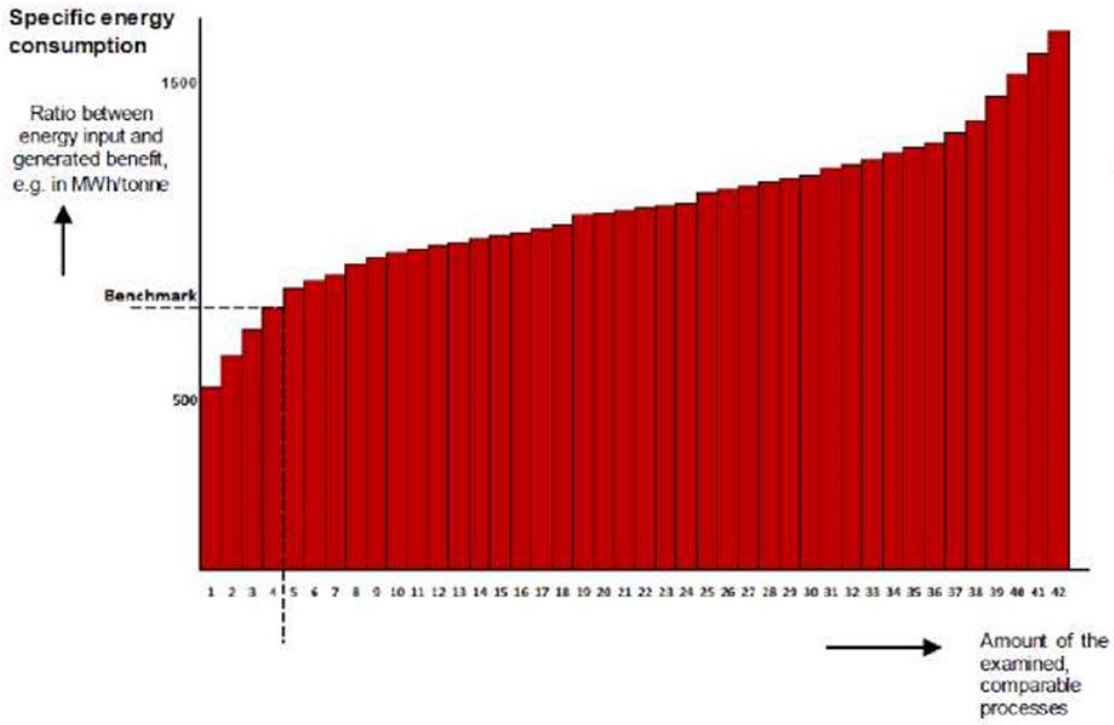
Energy Benchmarking

The primary aims of industrial energy efficiency benchmarking are

(1) to **monitor out the current energy use** of the industrial sectors,

(2) to **compare the energy performance of facility with similar facilities** at national or international levels and to **assist in performance improvements**,

(3) to help decision makers to see the broad picture and **assess the potential for improvement in energy efficiency**.



Benchmarking Sectors

Benchmarking Sectors

- Glass Sector
- Cement Sector
- Iron and Steel Sector
- Ceramics Sector
- Sugar Sector
- Textile Sector
- Paper Sector

Sectoral Preview	Raw Materials	Production	Specific Energy Consumption	Energy Intensity	Carbon Intensity

Thank you