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Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

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CIRCULAR ECONOMY INDICATORS

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CIRCULAR ECONOMY INDICATORS

TURKISH STATISTICAL INSTITUTE

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Objectives and Benefits of Circular Economy

- To use resources more effectively,
- To keep waste to a minimum
- Reuse waste as a resource, recycling
- To make production processes more efficient

Thus,

- Increases environmental sustainability,protects natural resources
- Supports the welfare of society by creating economic opportunities.
- Provides benefits in various areas such as contributing to the labour force and combating climate change.

Circular Economy Indicators in the EU

1. Production and Consumption
2. Waste Management
3. Secondary Raw Materials
4. Competitiveness and Innovation
5. Global Sustainability and Resilience

1. Production and Consumption

Production and Consumption

No	Thematic area	Main Indicator	Sub-indicator	Unit	Responsible Organization
1	Production and Consumption	Material Consumption	RESOURCE EFFICIENCY	index 2000 = 100	TÜİK
2		Waste Generation	TOTAL WASTE GENERATION PER CAPITA	kg/person	TÜİK
3			WASTE GENERATION PER UNIT GDP EXCLUDING LARGE MINERAL WASTES	kg per thousand euro, chain-linked volumes (2010)	TÜİK
4			MUNICIPAL WASTE GENERATION PER CAPITA	kg/person	TÜİK
5			FOOD WASTE GENERATION	kg/person	TÜİK, TOB, MoEUCC
6			PER CAPITA PACKAGING WASTE GENERATION	kg/person	MoEUCC
7			PER CAPITA PLASTIC PACKAGING WASTE GENERATION	kg/person	MoEUCC

Resource Efficiency

- The indicator is gross domestic product divided by domestic consumption of materials, which is the total amount of materials directly used in the economy.
- This ratio shows the ability of an economy to create wealth by extracting less natural resources or to create more wealth with the same amount of extraction.
- In other words, it is the value in monetary units of how much value is produced in return for a unit of natural resource utilisation.

(Data already published by TÜİK)

Total Waste Generation per Capita

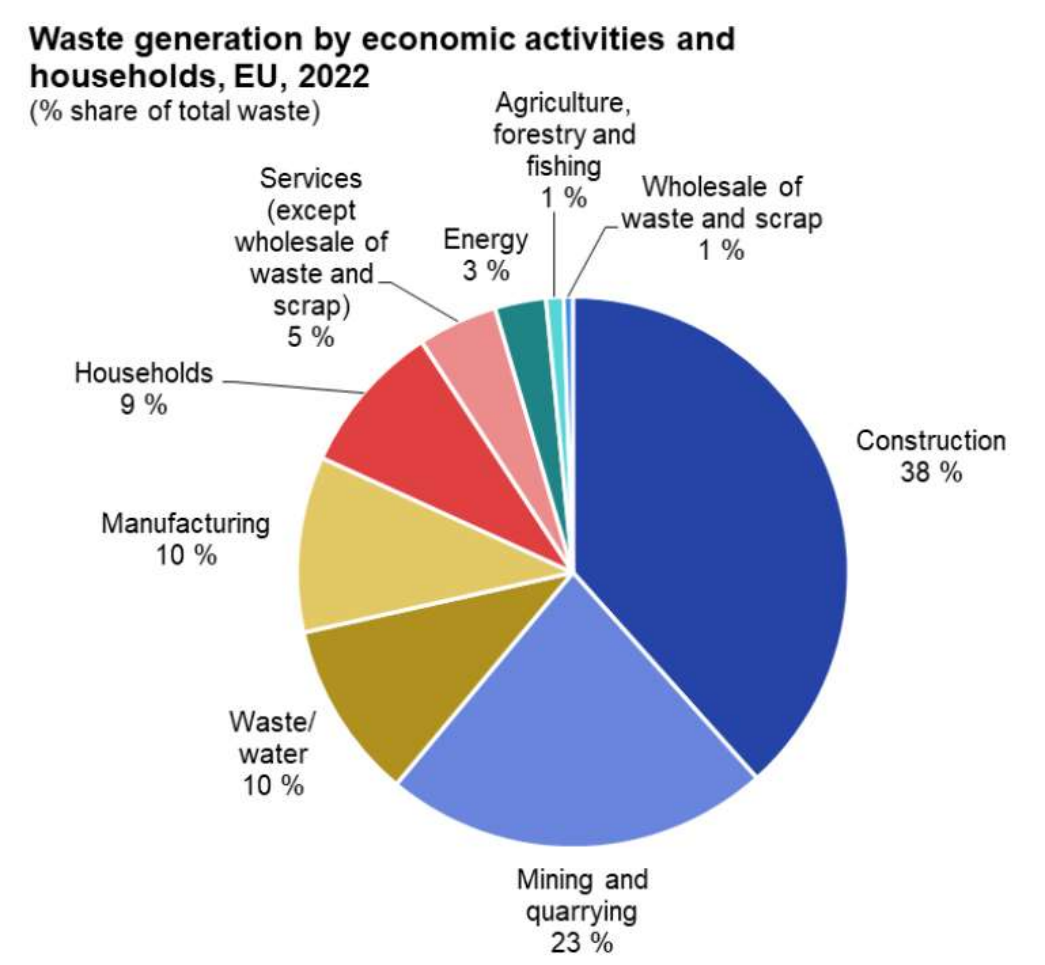
Amount of Waste Generated, 2020, 2022

Tonnes

	Total amount of waste		Amount of hazardous waste		Amount of non-hazardous waste	
	2020	2022	2020	2022	2020	2022
Total	104 739 181	109 237 232	30 770 088	29 380 898	73 969 093	79 856 334
Manufacturing industry workplaces	23 867 866	27 969 021	4 597 274	5 439 883	19 270 593	22 529 139
Thermal power plants	24 375 356	27 815 548	10 012	10 512	24 365 343	27 805 036
Mining operations[1]	27 581 875	26 309 170	26 044 730	23 794 881	1 537 144	2 514 289
Organised industrial zones	279 067	323 140	116 720	127 268	162 347	195 872
Households[2]	28 635 018	26 820 352	1 352	8 354	28 633 665	26 811 998

***Construction sector, Agricultural sector ?

Example: Total Waste Generation by Sector in the EU



Waste Generation Excluding Large Mineral Wastes per Unit of GDP

Waste generation, excluding major mineral waste, EU, 2004-2022
(million tonnes)

	2004	2006	2008	2010	2012	2014	2016	2018	2020	2022	Change 2022/2004 (%)
Total	779.5	789.9	760.5	758.7	758.3	769.0	784.6	812.9	776.3	794.9	2.0
Agriculture, forestry and fishi	62.3	56.7	45.5	20.2	20.4	17.7	19.7	19.4	20.7	22.3	-64.3
Mining and quarrying	10.4	7.1	10.0	7.9	7.5	7.7	6.9	8.1	7.5	8.0	-23.0
Manufacturing	239.9	225.8	216.8	190.5	176.4	176.0	179.0	179.8	166.6	166.3	-30.7
Energy	85.4	93.3	84.1	78.6	88.8	87.4	74.7	75.7	45.7	59.0	-31.0
Waste/water	75.2	83.3	98.9	129.9	155.0	180.7	196.8	208.5	212.4	216.1	187.2
Construction	34.4	33.4	34.8	42.1	39.8	38.6	37.8	41.3	38.7	39.8	15.6
Other sectors	97.7	111.2	88.7	103.5	89.6	85.1	88.5	94.0	89.0	90.9	-7.0
Households	174.1	179.2	181.6	186.0	180.7	175.9	181.2	186.1	195.7	192.6	10.6

Source: Eurostat (online data code: env_wasgen)

Municipal Waste Generation Per Capita

Food waste * *Just published*

Amount of food waste generated in households (million tonnes)

Year	Amount of food waste generated in households (million tonnes)
2020	12.7
2022	12.2

Packaging Waste Generation Per Capita

Plastic Packaging Waste Generation Per Capita

2. Waste Management

Waste Management

No	Thematic area	Main Indicator	Sub-indicator	Unit	Responsible Organization
8	Waste Management	Total Recycling Rates	MUNICIPAL WASTE RECYCLING RATE	%	TÜİK
9			TOTAL WASTE RECYCLING RATE EXCLUDING LARGE MINERAL WASTES	%	TÜİK
10		Recycling Rates for Certain Waste Streams	TOTAL PACKAGING WASTE RECYCLING RATE	%	MoEUCC
11			PLASTIC PACKAGING WASTE RECYCLING RATE	%	MoEUCC
12			RECYCLING RATE OF SEPARATELY COLLECTED WEEE	%	MoEUCC

***Waste Imports data required

3. Secondary Raw Materials

Secondary Raw Materials

No	Thematic area	Main Indicator	Sub-indicator	Unit	Responsible Organization
13	Secondary Raw Materials	Contribution of Recycled Materials to Raw Material Demand	**RATE OF CIRCULAR MATERIAL USE**	%	TÜİK
14		Trade in Recyclable Raw Materials	**IMPORT**	Thousand tonnes	MoEUCC-TÜİK
15			**EXPORT**	Thousand tonnes	MoEUCC-TÜİK

Circular Material Use Rate

The indicator measures the share of material recycled and fed back into the economy (thus saving the extraction of primary raw materials) in overall material use.

Reducing the use of virgin raw materials is a key element of the circular economy. The indicator was calculated within the scope of DEEP Project.

Circularity Ratio -EU Countries

	2022
European Union	**11.5**
Netherlands	27.5
Belgium	22.2
France	19.3
Italy	18.7
Estonia	16.0
Malta	15.1
Austria	13.8
Germany	13.0
Czechia	11.9
Slovenia	9.4
Slovakia	9.1
Poland	8.4
Hungary	7.9
Denmark	7.4
Spain	7.1
Sweden	6.1
Croatia	5.8
Latvia	5.4
Luxembourg	5.2
Bulgaria	4.8
Lithuania	4.1
RoSC	3.2
Greece	3.1
Portugal	2.6
Ireland	1.8
Romania	1.4
Finland	0.6

4. Competitiveness and Innovation

Competitiveness and Innovation

No	Thematic area	Main Indicator	Sub-indicator	Unit	Responsible Organization
16	Competitiveness and Innovation	Private Investment, Employment and Gross Value Added Related to Circular Economy Sectors	**PRIVATE INVESTMENTS**	Percentage of GDP at Current Prices	TÜİK
17			**EMPLOYED PERSONS**	Percentage in Total Employment	TÜİK
18			**GROSS VALUE ADDED**	Percentage of GDP at Current Prices	TÜİK
19		Innovation	**NUMBER OF PATENTS RELATED TO WASTE MANAGEMENT AND RECYCLING**	Number	TURKISH PATENT AUTHORITY

5. Global Sustainability and Resilience

Global Sustainability and Resilience

No	Thematic area	Main Indicator	Sub-indicator	Unit	Responsible Organization
20	Global Sustainability and Resilience	Contribution of Circular Economy to Global Sustainability	**GREENHOUSE GAS EMISSIONS FROM PRODUCTION ACTIVITIES**	kg/person	TÜİK
21		Contribution of Circular Economy to Resilience	**MATERIAL IMPORT DEPENDENCY**	%	TÜİK
22			**SELF-SUFFICIENCY IN RAW MATERIALS, ALUMINIUM, COPPER, ETC.**	%	TÜİK

Thank You..

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Thanks for your attention.

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