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

EuropeAid/140562/IH/SER/TR

Circular Economy and Waste Management

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Activity 3.2.4. Training on Integrated Waste Management in Circular Economy
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T.C. ÇEVRE VE
ŞEHİRCİLİK BAKANLIĞI

CIRCULAR ECONOMY AND WASTE MANAGEMENT

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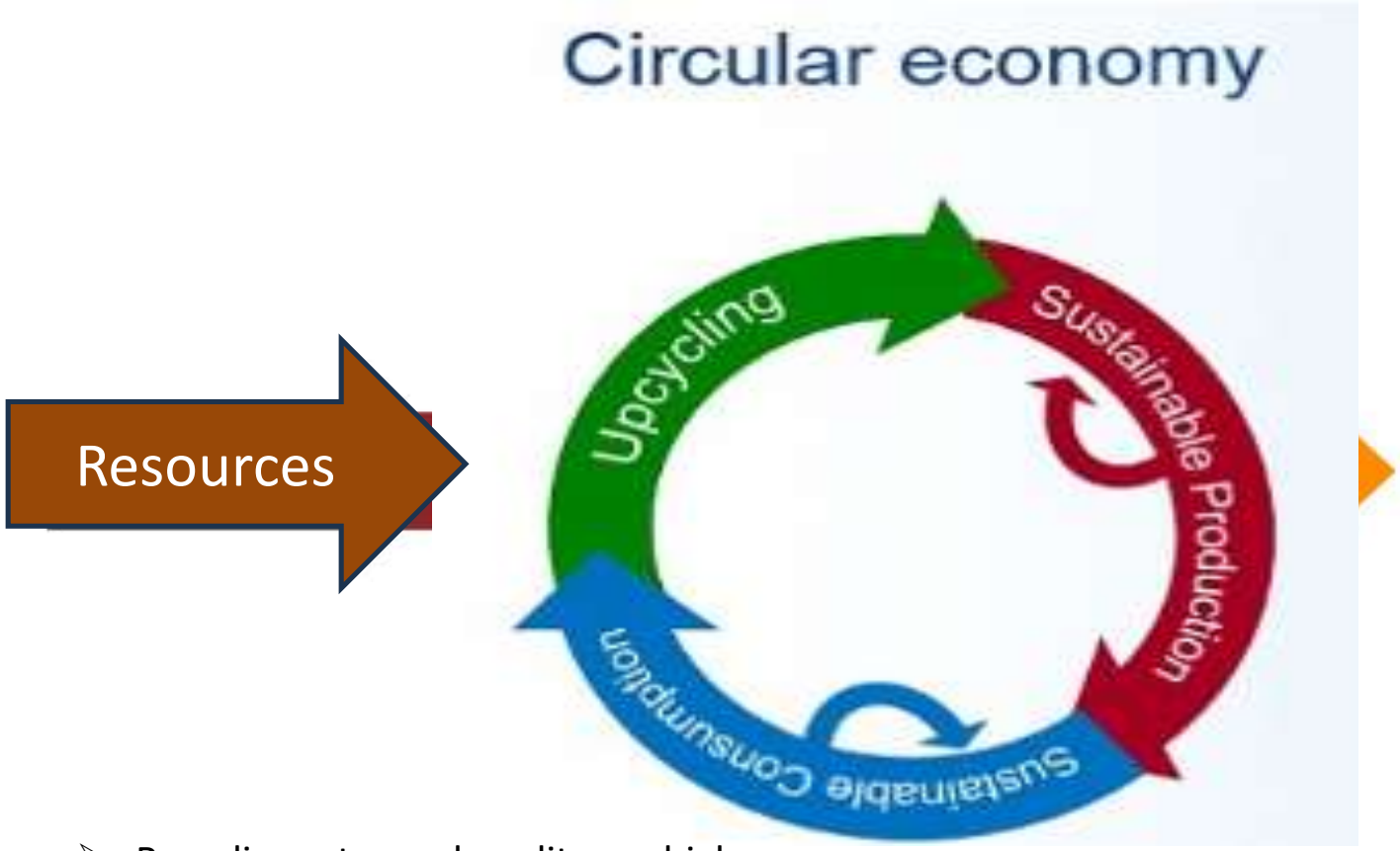
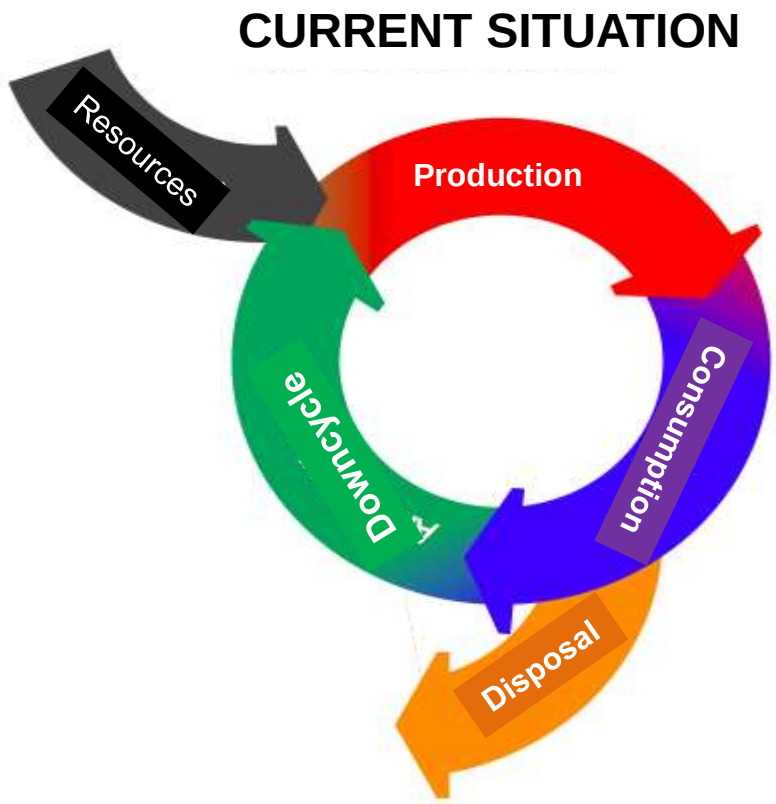
WASTE MANAGEMENT

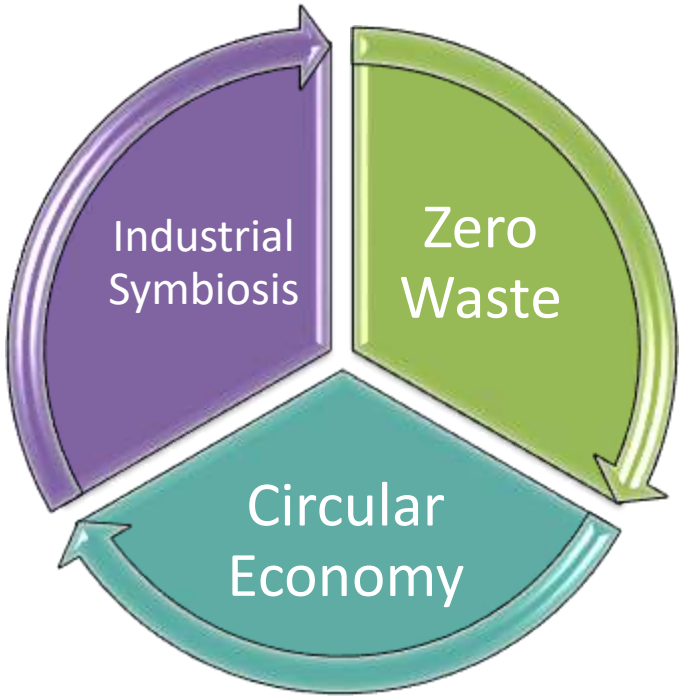
''Maximisation of the life of products, materials and natural resources





- Recycling rates and quality are high,
- Disposal is almost non-existent,
- Energy should come from renewable sources

THE JOURNEY OF THE WASTE



- Slow (long-lasting products)
- Less (Modest packaging and products)
- Local (On-site production-consumption)
- Clean (non-toxic, recyclable materials)
- Sustainable raw material
- Upcycling with high added value

TÜRKİYE GREEN DEAL ACTION PLAN - 2021

(The Action Plan includes a total of 32 targets and 81 actions under 9 main headings)

1.Carbon Border Adjustments
2.A Green and Circular Economy
3.Green Financing
4.Clean, Economic and Secure Energy Supply
5.Sustainable Agriculture
6.Sustainable Smart Transport
7.Combating Climate Change
8.Diplomacy
9.European Green Deal Information and Awareness Raising Activities

Preparation of circular economy action plan, sustainable consumption and production action plan, informing SMEs about waste, resource efficiency, secondary product utilisation criteria, green OIZ certification

CIRCULAR ECONOMY; NOT A NEW METHOD, BUT A NEW APPROACH AND PERSPECTIVE...

A circular economy can be defined as an industrial economy in which the resources used in the production process are managed in a circular manner. In this way, the demand for primary resources is optimised and the associated environmental impact and energy use are mitigated.

The instruments of the circular economy can be counted as follows;

Sustainability,

Green production, clean production,

Ecodesign,

Industrial symbiosis.

The following can be considered as examples of the works carried out in industrial waste management in line with the Circular Economy in our country;

Waste minimization, by-product, preparing for reuse,
Alternative raw material, supplementary fuels, WDF (reduction of the amount of waste going to landfill)
Widespread use of waste (casting sand, ash, slag) instead of natural resources.
-

SECTORAL WASTE GUIDELINES

WASTE MANAGEMENT LEGISLATION

Framework Legislation

- Environmental Law No. 2872 (1983)
- Waste Management Regulation (2015)

Regulations by Type of Waste

- Regulation on the Control of Waste Batteries and Accumulators (2004)
- Regulation on the General Principles of Waste Pretreatment and Recovery Facilities (2021)
- Regulation on the Control of Excavation Soil, Demolition and Construction Waste (2004)
- Regulation on Control of Waste Vegetable Oils (2015)
- Regulation on Control of End-of-Life Tires (2006)
- Regulation on Control of Polychlorinated Biphenyls and Polychlorinated Terphenyls (2007)
- Regulation on the Control of Waste Oils (2019)
- Regulation on Control of End-of-Life Vehicles (2009)
- Regulation on the Control of Packaging Wastes (2021)
- Regulation on Control of Waste Electrical and Electronic Equipment (2022)
- Regulation on the Control of Mining Wastes (2015)
- Regulation on the Control of Medical Waste (2017)
- Regulation on the Restriction of the Use of Certain Hazardous Materials in Electrical and Electronic Equipment (2022)
- Regulation on Recovery Contribution Fee (2019)

Madencilik Faaliyetleri İle Bozulan Arazilerin Doğaya Yeniden Kazandırılması Yönetmeliği

RG:23.01.2010

Operation and Disposal Regulations

- Regulation on Landfilling of Wastes (2010)
- Regulation on the Incineration of Wastes (2010)

Communiqués

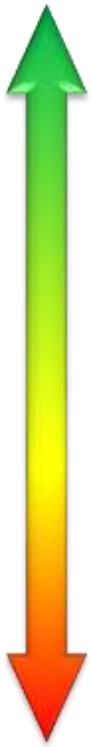
- Communiqué on Tanker Cleaning Facilities (2009)
- Communiqué on Waste Interim Storage Facilities (2022)
- Communiqué on Technical Procedures for Storage, Purification, Dismantling and Processing of End-of-Life Vehicles (2011)
- Communiqué on the Transportation of Waste by Road (2015)
- Communiqué on Waste Derived Fuel, Supplementary Fuel and Alternative Raw Materials (2014)
- Communiqué on Mechanical Separation, Biodrying and Biomethanisation Facilities and Fermented Product Management (2015)
- Compost Communiqué (2015)
- 2872 numbered Communiqué on Recovery Contribution Fee Amounts to be Collected Pursuant to the Environmental Law (2023)

WASTE MANAGEMENT

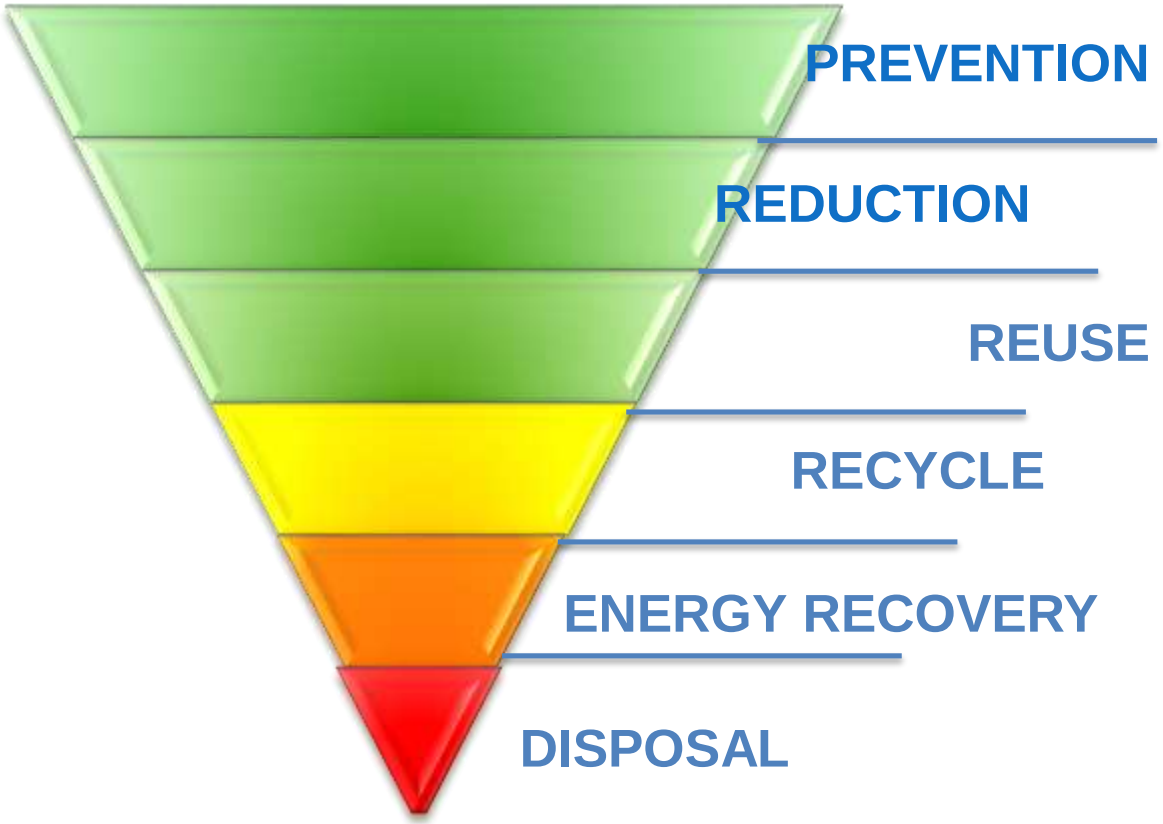
- Prevention of Waste Generation
- Reuse
- Reduction at the Source
- Separation by Property and Type
- Collection
- Temporary Storage
- Transport
- Recycling
- Recovery, Including Energy Recovery
- Disposal
- Monitoring After Disposal Operations
- Control and Audit Activities
- Import and Export

WASTE MANAGEMENT HIERARCHY

The Most Priority Option



The Last Option



WASTE MANAGEMENT REGULATION

OBJECTIVE

Ensuring waste management

by reducing waste generation, reuse, recycling and recovery of wastes and reducing the use of natural resources without harming the environment and human health from waste generation to disposal

WASTE MANAGEMENT REGULATION

Scope

Wastes listed in Annex-IV

WASTE LIST

For the provisions not included in the relevant legislation, the provisions of the regulation are applied

Exceptions

- Gas emissions into the atmosphere,
- Radioactive waste,
- Wastewater,
- Unusable explosives
- Uncontaminated excavated soil,
- Unexcavated contaminated (in situ) soil,
- Animal cadavers, animal faeces used for agricultural purposes,

WASTE MANAGEMENT REGULATION

ANNEX 1

- Waste code determination hierarchy
- Waste List Descriptions: (*), (A) and (M)
- waste codes ending with 99

ANNEX-2/A

- DISPOSAL
- D1-D15

ANNEX-2/B

- RECOVERY
- R1-R13

ANNEX-3/A

- HAZARDOUS CHARACTERISTICS
- H1-H15

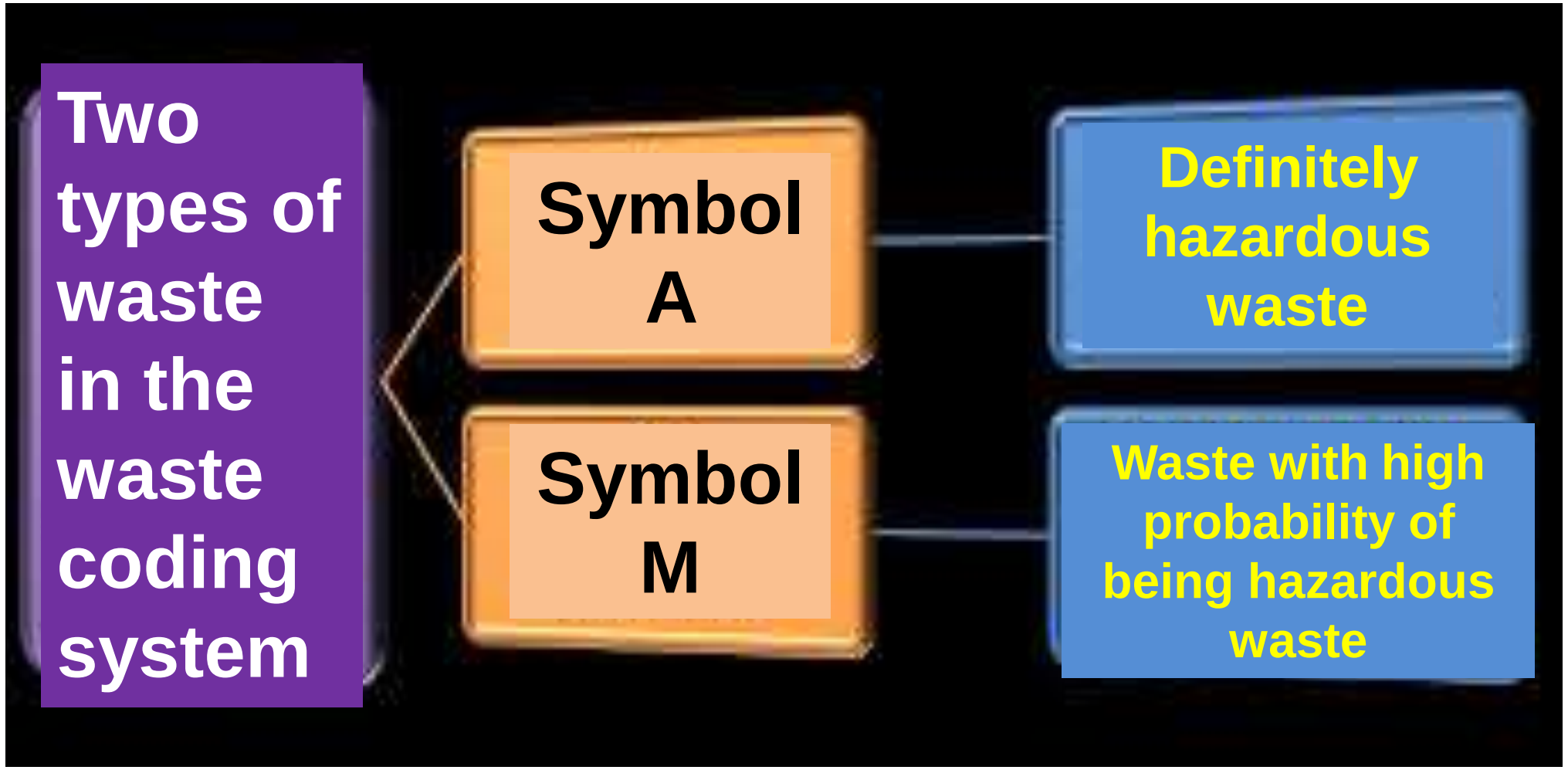
ANNEX-3/B

- HAZARD THRESHOLD VALUES

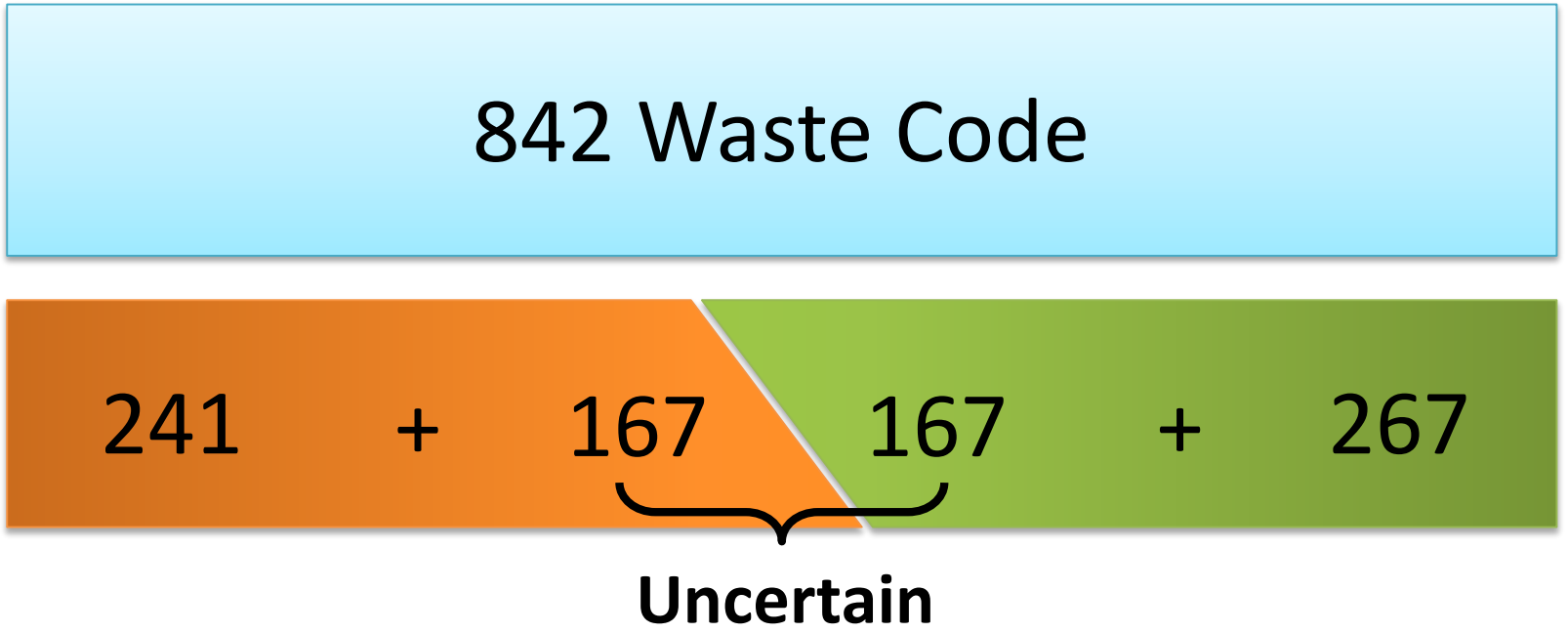
ANNEX 4

- WASTE LIST

WASTE CODE


Two types of waste in the waste coding system
Symbol A
Symbol M
Definitely hazardous waste
Waste with high probability of being hazardous waste

ANNEX-4 WASTE LIST



408

Hazardous

434

Non-hazardous

ANNEX-1 WASTE CODE DETERMINATION HIERARCHY

1

- In the sections from 01 to 12 or from 17 to 20, the appropriate six-digit waste code is determined according to the source of the waste.

2

- If an appropriate waste code cannot be found in these sections, sections 13, 14 and 15 are examined.

3

- If an appropriate waste code cannot be found in these sections, the waste is evaluated according to section 16.

4

- If the waste is not included in section 16, with the approval of the Ministry, the appropriate waste code appropriate to the main fields of activity in the waste list and for the last two digits «99 - wastes not otherwise identifiable» is used.

ANNEX-1 WASTE LIST EXPLANATIONS: (*), (A) AND (M)

- **(*)** marked ones are hazardous waste.
- Hazardous wastes have one or more of the characteristics in Annex-3/A.
- Wastes marked **(A)** in the Waste List are classified as hazardous waste regardless of the hazardous waste concentration in Annex-3/B.
- Wastes marked **(M)** in the Waste List are potentially hazardous wastes. Assessment of hazardousness is made according to Annex-3/A and Annex-3/B.

A SECTION FROM ANNEX-4 WASTE LIST

WASTE CODE	WASTE CODE DEFINITION	EXPLANATION
18	**WASTES ARISING FROM HUMAN AND ANIMAL HEALTH AND/OR RESEARCH IN THESE FIELDS (EXCLUDING KITCHEN AND RESTAURANT WASTES NOT DIRECTLY RELATED TO HEALTH)**	
18 01	**Wastes Resulting from Birth, Diagnosis, Treatment or Disease Prevention in Humans**	
18 01 01	Cutters (except 18 01 03)	
18 01 02	Body parts and organs, including blood bags and blood reserves (except 18 01 03)	
18 01 03*	Wastes whose collection and disposal are subject to special treatment in order to prevent infection	A
18 01 04	Wastes whose collection and disposal are not subject to special treatment in order to prevent infection (e.g. dressings, body casts, disposable clothing, diapers)	
18 01 06*	Chemicals containing hazardous materials or consisting of hazardous materials	M
18 01 07	18 01 Chemicals other than 06	
18 01 08*	Cytotoxic and cytostatic drugs	A
18 01 09	Drugs other than 18 01 08	
18 01 10*	Amalgam waste from dental treatment	A

ANNEX-2 WASTE TREATMENT METHODS

Disposal: Annex-2/A

D1 Landfill under or above ground (e.g. sanitary landfill and similar)
D2 Land reclamation (e.g. biodegradation of liquid or sludge waste in soil, etc.)
D3 Deep injection (e.g. injection of pumpable waste into wells, salt rocks or naturally occurring cavities, etc.)
D4 Surface filling (e.g. filling of liquid or sludge wastes into trenches, ponds and lagoons, etc.)
D5 Landfill requiring special engineering (cellular storage isolated from the environment and each separately isolated and covered, etc.)
D6 Discharge into a body of water other than sea/ocean
D7 Discharge to sea/oceans including sea beds
D8 Biological processes not described elsewhere in this Annex which result in the formation of final compounds or mixtures excreted by any of the processes given in D1 to D7 and D9 to D12
D9 Physical-chemical processes (e.g. evaporation, drying, calcination, etc.) resulting in the formation of final compounds or mixtures which are discharged by any of the processes given in D1 to D8 and D10 to D12
D10 Incineration (On Land)
D11 Incineration (Above sea)
D12 Permanent storage (placement of containers in a mine and similar)
D13 Blending or mixing before being subjected to any of the operations specified in D1 to D12
D14 Repackaging before being subjected to any of the operations specified in D1 to D13
D15 Storage until subjected to any of the operations specified in D1 to D14 (temporary storage within the area where the waste is generated, excluding collection)

Recovery: Annex-2/B

R1 Use as a primary fuel or in other ways for energy production
R2 Solvent reclamation/reproduction
R3 Reclamation/recycling of organic materials not used as solvents (including composting and other biological conversion processes)
R4 Reclamation/recycling of metals and metal compounds
R5 Reclamation/recycling of other inorganic materials
R6 Reproduction of acids or bases
R7 Recovery of parts (components) used for pollution reduction
R8 Recovery of catalyst fragments (components)
R9 Re-refining or other re-use of oils
R10 Ecological improvement or land reclamation for the benefit of agriculture
R11 Utilisation of wastes from processes R1 to R10
R12 Exchange of wastes to be subjected to any of processes R1 to R11.
R13 Intermediate storage of wastes until they are subjected to any of the processes specified in R1 to R12 (temporary storage within the area where the waste was generated, excluding collection)

ANNEX-3 HAZARDOUS PROPERTIES

ANNEX-3/A

CHARACTERISTICS OF WASTES CONSIDERED HAZARDOUS

H1 Explosive

H2 Oxidiser

H3-A Highly flammable

H3-B Flammable

H4 Irritant

H5 Harmful

H6 Toxic

H7 Carcinogenic

H8 Corrosive

H9 Infectious

H10 Toxic to reproductive system

H11 Mutagenic

H12 Substances producing toxic or extremely toxic gases in contact with air, water or acid

H13 Sensitiser

H14 Ecotoxic

H15 Substances and preparations which, when discarded or when producing another substance, e.g. filtrate, exhibit one of the above characteristics

ANNEX-3/B

HAZARDOUS WASTE THRESHOLD CONCENTRATIONS

a) Flash point ≤ 55 ºC,
b) Total concentration of one or more substances classified as highly toxic ≥ 0.1%,
c) The total concentration of one or more substances classified as toxic is ≥ 3%,
ç) The total concentration of one or more substances classified as hazardous is ≥ 25%,
d) The total concentration of one or more substances classified as corrosive according to R35 is ≥ 1%,
e) The total concentration of one or more substances classified as corrosive according to R34 is ≥ 5%,
f) Total concentration of one or more substances classified as irritants according to R41 ≥ 10%,
g) Total concentration of one or more substances classified as irritants according to R36, R37 and R38 ≥ 20%,
ğ) Total concentration of substances known to be carcinogenic in Category 1 or 2 ≥ 0.1%,
h) The total concentration of a substance known to have a carcinogenic effect in Category 3 is ≥ 1%,
ı) The concentration of a Category 1 or 2 substance classified as a reproductive impairment according to R60 or R61 is ≥0.5%,
i) The concentration in category 3 substances classified according to R62 or R63 as impairing the ability to reproduce is ≥ 5%.
j) The concentration of a Category 1 or 2 substance classified as a hereditary modifier according to R46 is ≥ 0.1,
k) The concentration in Category 3 substance classified as a hereditary modifier according to R40 is ≥ 1

PROHIBITIONS

Pollution prohibition

- It is forbidden to pollute the environment by recycling, disposal of wastes and/or having wastes disposed off outside the permitted facilities; dumping, filling and storing wastes in soil, seas, lakes, rivers and similar receiving environments.

Import prohibition

- Hazardous wastes are prohibited from entering the Customs Territory of the Republic of Türkiye, including free zones.

BY-PRODUCT

- **Article 19: By-Product:** A substance or material that is produced in the course of a manufacturing process, but for which the primary purpose is not the production of that substance;

- ✓ If it is produced as an integral part of the production process and is included as a product / by-product in the capacity report,
- ✓ If the demand for its use in the future is constant,
- ✓ If it can be used directly in a process and does not undergo other processes except physical processes at the place of production,
- ✓ Documentation that the substitute complies with the standards of the substance to be substituted or, if used as raw material, that the final product does not impair the product standard,
- ✓ If measures are taken in its use that will not harm the environment and human health,
- ! It is necessary to apply to the Ministry on company and waste basis.

APPLICATIONS

❑Substances that have been granted conformity as <u>By-Products</u>:

- Utilisation of fly ash from thermal power plants in concrete production,
- Use of wet PTA (pure terephthalic acid) from petrochemicals in plasticiser production,
- Use of unprocessed slags from the iron and steel sector as aggregate in construction, road and concrete production

ALTERNATIVE RAW MATERIAL

Communiqué on Waste Derived Fuel, Supplementary Fuel and Alternative Raw Materials - Article 13-14

***Alternative Raw Material*:** Waste generated as a result of the activity of a facility, which can be used as an additive to raw materials due to its mineral properties.

Facilities producing cement, concrete, lime, brick, tile, ceramic and iron and steel can use wastes deemed appropriate by the Ministry as alternative raw materials. Refineries producing fuel oil can use fuel oil wastes as alternative raw materials.

END-OF-WASTE

- At this point, the End-of-Waste concept, which enables the management of wastes that are raw material substitutes and can be utilised as a resource by excluding them from the waste legislation if environmental measures are taken and they comply with technical criteria, was introduced for the first time with the Waste Framework Directive 2008/98/EC.
- For this reason, the 'Development of End of Waste Concept in Türkiye' Project was officially launched on 25.04.2023 within the scope of the second phase of the Instrument for Pre-Accession Assistance (IPA) Programme, which is one of the grant mechanisms of the European Union for candidate and potential candidate countries.

END-OF-WASTE

- In this context, the project aims to determine the End of Waste (EoW) criteria for waste types such as metal (iron, steel and aluminium), broken glass, copper scrap in line with the Waste Framework Directive in our national legislation.
- Furthermore,guidelines for End of Waste Criteria will be established for waste types such as
- waste paper,
- biodegradable waste (compost and digested product),
- waste plastics and
- 4 other waste types specified in the Waste Framework Directive (textiles, aggregates, tyres, waste derived fuel (WDF)).

AMENDMENT TO THE WASTE FRAMEWORK DIRECTIVE AS OF 4 JULY 2023

- In the Waste Framework Directive, it was taken into consideration that the food sector ranks first and the textile sector ranks fourth in terms of resource use intensity and it was aimed to reduce the negative impact of these sectors on the environment and climate by introducing regulations on waste management in these sectors.
- In line with the vision of the EU Sustainable and Circular Textiles Strategy, it is aimed to ensure a more circular and sustainable management of textile waste.
- The amendment also covers measures to prevent waste generation in the food sector. This amendment should strengthen the existing provisions of Article 9(1) of the WFD, which require Member States to take measures to reduce food waste along the entire food supply chain.

AMENDMENTS TO BE INTRODUCED TO THE LEGISLATION RELATED TO THE TEXTILE SECTOR

1. Extended Producer responsibility (EPR): The draft proposal envisages that textile manufacturers take responsibility for the entire life cycle of textile production, especially at the end of the product's life cycle. In addition, textile producers will also be held economically responsible within the scope of the system to be established for the collection, classification, reuse and recycling of textile wastes.

2. According to the EU's waste management rules, Member States are required to establish separate textile collection systems by 1 January 2025 under Article 11 of the Waste Framework Directive. In this sense, incentives will be provided to producers who set a good example in this regard.

3. Another important issue is that the Commission's proposal further clarifies the definitions of waste and reusable textiles in order to reduce illegal shipments of waste disguised as intended for reuse.

THANK YOU

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Thanks for your attention.

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