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

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EXECUTIVE SUMMARY

This General Assessment Report produced under the Activity 1.1, is the main output of this Activity. It is based on desktop research, market survey and workshops and could be used as a starting point to comprise the basis for subsequent National Strategy and Action Plan to be developed under Component 2, the next second component of the project. The report aims to benchmark the EU's Circular Economy policy objectives and targets with relevant Turkish circumstances and national systems and to reveal feasibility of integration of objectives and actions into the national framework and relevance of application of concepts and actions.

The report starts with the introductory section mapping the objective, scope and methodology (Section 1. The General Assessment Report was produced through a multi-layered analytical process including; (i) a desktop study revealing the national CE progress towards the EU Circular Economy Action Plan (CEAP), (ii) a market survey to identify key stakeholders' status, gaps, needs and possible solutions towards transition to CE and to collect existing data infrastructure for the systematic calculation of the national and sectoral circularity and (iii) two CE workshops intended for public and private sectors to validate the identified gaps, needs and obstacles to be removed into the national legislation, but also specific needs as per public funding/investments in infrastructures, R&D, innovation, capacity building and etc.

Section 2 summarizes the recent developments in the following issues of European Union:

- The Proposal for a Regulation on Packaging and Packaging Waste [COM(2022) 677 - 2022/0396 (COD)],
- EU Policy Framework on Biobased, Biodegradable and Compostable Plastics,
- The Proposal for the Revision of the Industrial Emissions Directive [COM(2022) 682],
- The Proposal for the Revision of the European Pollutant Release and Transfer Register (E-PRTR) [COM(2022) 157 - 2022/0105 (COD)],
- The Proposal for a Regulation on Eco-design for Sustainable Products [COM(2022) 142 - 2022/0095 (COD)],
- EU Strategy Proposal for Sustainable and Circular Textiles [COM(2022) 141],
- The Proposal for a Revised Construction Products Regulation [COM(2022) 144 - 2022/0094 (COD)],
- The Proposal for Empowering Consumers in the Green Transition [COM(2022) 143 - 2022/0092 (COD)],
- The Proposal for Waste Shipment Regulation [COM(2021) 709 - 2021/0367 (COD)],
- The Proposal for Amendments the Rules on Persistent Organic Pollutants in Waste [COM(2021) 656 - 2021/0340 (COD)],
- The Proposal for a new Batteries Regulation [COM(2020) 798 - 2020/0353 (COD)]
- European Industrial Strategy [COM(2021) 350]

In addition, information on the Proposal on Substantiating Green Claims and Measures to Reduce the Impact of Microplastic Pollution on the Environment in upcoming actions and initiatives as of 2023, were also given. Moreover, general progress of EU on the circular economy based on selected indicators detailed efforts of EU MSs like the Netherlands, France and Finland are also summarized.

Section 3 maps the current activities that national authorities have conducted in the past with the most recent developments as per new circular economy action plan and its technical regulations. This section looks into the applicable national strategies, policies and action plans of relevance for (or corresponding to) the existing CE Strategic/Action framework. Assessment of the compliance status of Türkiye was conducted based on the EU Progress Monitoring presenting the progress on transposition and implementation of the EU environmental legislation in Türkiye in the period April 2016 - April 2021. It was also updated by the TAT analysis of the compliance level based on the scanning current legislation. In addition, the circularity of the country and selected sectors were revealed based on two statistical approaches offered by Eurostat within the scope of the circular economy monitoring framework (1) Sankey Diagram for material flows and (2) Circular rate (circular material utilization rate).

Section 4 and 5 focus on four groups of gaps and needs in the process of transition to CE: legislative, infrastructure, institutional and financial. Notably, the actions, objectives, targets stipulated in the EU CEAP, as well as implementing requirements of the relevant EU acquis were grouped in those logical clusters and systematically analysed in the scope of the desktop analysis, market survey and workshops. The differences between the EU and Turkish systems revealed through a more in-depth comparison of gaps and needs. Some challenges towards Türkiye's transition to circular economy were identified as lacks in legislation, insufficient financing and incentives, insufficient public consciousness and awareness, lack of cooperation and commonly-held linear economy approach among stakeholders.

In Section 6, one or more solutions (interventions) corresponding to every need identified were proposed to comprise the basis for subsequent National Strategy and Action Plan under Component 2. Responsible institutions were defined for each solution and briefly assessed with an indication of competences. This will be a starting point to decide on the scope of measures and timeframes within the action framework, by taking into account gaps, needs and several aspects of the impacts.

In the scope of the final section of the report (Section 7), major environmental, economic and social benefits, challenges and opportunities for Türkiye on transition to CE were presented. In addition to challenges such as new regulatory requirements, lack of institutional capacity, insufficient funding, awareness and technical infrastructure, towards transition to the circular economy, positive impacts are expected in terms of the environment such as reducing marine litter and reducing plastics use with increasing use of alternative products and accelerating the developments for waste reduction and prevention. With the transition to the circular economy, new workforce and opportunities will be provided for work and human resource needs, facilities will force innovation and development in terms of environmental investments and technology, cleaner production will emerge as an inevitable necessity, awareness will increase throughout the society.

The results of this report will not only feed into the work on the preparation of National Strategy and Action Plan (Act. 2.1) but also the in-depth analysis of Circular Economy Network in the country (Act. 1.3). This study is also an entry point for the design of subsequent dissemination & knowledge transfer process, which will be based on exemplary

insights into the EU experience, to enable the Turkish authorities informed decisions on the selection of the most efficient and progressive approach.

LIST OF ABBREVIATIONS

CCRI	Circular Cities & Regions Initiative
CEAP	Circular Economy Action Plan
CPC	Cooperative Patent Classification
CSRD	Corporate Sustainability Reporting Directive
EaSI	Employment and Social Innovation Programme
EBRD	European Bank for Reconstruction and Development
ECHA	The European Chemicals Agency
EIA	Environmental Impact Assessment
ELV	End-of-Life Vehicles
EMAS	Eco-Management and Audit Scheme
EoW	End of Waste
EPR	Extended Producer Responsibility
E-PRTR	Revision of the European Pollutant Release and Transfer Register
ESF	European Social Fund
EU	European Union
EW-MFA	Economy-Wide Material Flow Accounts
GACERE	Global Alliance on Circular Economy and Resource Efficiency
GDP	Gross Domestic Product
GPP	Green Public Procurement
ICT	Information and Communication Technologies
IED	Industrial Emissions Directive
INCITE	Innovation Centre for Industrial Transformation and Emissions
IPPC	Integrated Pollution Prevention and Control
ITGS	International Trade in Goods Statistics
JRC	Joint Research Center
JTM	Just Transition Mechanism
MFA	Material Flow Accounting

MoIT	Ministry of Industry and Technology
MoTI	Ministry of Transportation and Infrastructure
NECP	National Energy and Climate Plans
NFRD	Non-Financial Reporting Directive
OECD	Organisation for Economic Co-operation and Development
OIZ	Organized Industrial Zone
POPs	Persistent Organic Pollutants
R&D	Research and Development
RDNS	Regional Development National Strategy
REACH	Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals
SCIP	Substances of Concern In articles as such or in complex objects (Products)
SME	Small and Medium Enterprises
TAT	Technical Assistance Team
TMM	Turkish Materials Marketplace
TSE	Turkish Standards Institute
TURKSTAT	Turkish Statistics Institute
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNGA	United Nations General Assembly
UNIDO	United Nations Industrial Development Organization
WEEE	Waste Electrical and Electronic Equipment
WstatR	Waste Statistics Regulation
YEI	Youth Employment Initiative

1. INTRODUCTION

1.1. Objective and Scope

This report aims to benchmark the EU's Circular Economy (CE) policy objectives and targets with relevant Turkish circumstances and national systems and to reveal feasibility of integration of objectives and actions into the national framework and relevance of application of concepts and actions. Benchmarks are seen as the targets of the transition process, also as the key elements of the reform process to ensure the transition. Benchmark analysis looked into the state of play, analysed the gaps and needs, formulated the necessary actions to close the gaps and then assess what is needed to implement it, by which stakeholders.

The report focuses on four groups of gaps and needs: legislative, infrastructure, institutional and financial. Moreover, major environmental, economic and social benefits, challenges and opportunities for Türkiye on transition to CE were also revealed.

For every need identified, one or more solutions (interventions) were proposed to comprise the basis for subsequent National Strategy and Action Plan under Component 2. Responsible institutions were defined for each solution. This will be a starting point to decide on the scope of measures and timeframes within the Action framework, by taking into account gaps, needs and several aspects of the impacts.

This study is also an entry point for the design of subsequent dissemination & knowledge transfer process, which will be based on exemplary insights into the EU experience, to enable the Turkish authorities informed decisions on the selection of the most efficient and progressive approach.

The results of this report will not only feed into the work on the preparation of National Strategy and Action Plan (Act. 2.1) but also the in-depth analysis of Circular Economy Network in the country (Act. 1.3).

1.2. Methodology

The General Assessment Report was produced through a multi-layered analytical process including;

- a **desktop study** revealing the national CE progress towards the EU Circular Economy Action Plan (CEAP),
- a **market survey** to identify key stakeholders' status, gaps, needs and possible solutions towards transition to CE and to collect existing data infrastructure for the systematic calculation of the national and sectoral circularity,
- **CE workshops** intended for public and private sectors to validate the identified gaps, needs and obstacles to be removed into the Turkish legislation, but also specific needs as per public funding/investments in infrastructures, R&D, innovation, capacity building and etc.

1.2.1. Desktop Study

Desktop study is an analytical process including an in-depth assessment of the EU CE policy and regulatory framework, whose elements were reflected in this benchmark analysis.

Notably, the actions, objectives, targets stipulated in the EU CEAP, as well as implementing requirements of the relevant EU acquis were grouped in logical clusters (legislative, infrastructure, institutional and financial) of implementation steps and systematically analysed in the scope of the desktop analysis.

Besides the CEAP, all the previous related legislative interventions were analysed in close cooperation with the End Beneficiary, in particular the legislation on the waste management and resource efficiency. Along this process, the best EU practices were mapped and analysed, with particular focus on those countries which had a pathway that can be comparable to the Turkish state of play.

1.2.2. Market Survey

To acquire a broader understanding of the existing situation, a market survey, comprising of a quantitative (circularity assessment by using Mass Flow Accounting -MFA- methodology) and a qualitative (institutional questionnaires and visits) layer of analysis was conducted to gather additional data and information from the stakeholders.

Within the scope of questionnaire, market research and institutional visits, total of 86 visits were conducted between 04.07.2022 and 22.08.2022. 133 institutions/organizations/units responded to the questionnaires.The objectives and framework of market survey were identified as follows:

- Identifying stakeholder status, current and potential contributions, needs, etc. in terms of circular economy strategies and practices
- Determining the opinions and suggestions of the stakeholders about Türkiye's transition to circular economy and policies
- Obtaining the opinions and suggestions of stakeholders about the environmental, economic and social benefits and challenges of transition to circular economy in the context of Türkiye, especially their contribution to resource efficiency, waste prevention and reduction, new business and investment opportunities, reduction of single-use plastics, zero waste, industrial symbiosis, etc.
- Gathering the existing data from the relevant stakeholders, determining the missing data and establishing the infrastructure for the systematic calculation of the circularity in the next process to calculate Türkiye's national and sectoral circularity in accordance with the Eurostat MFA methodology.

MFA Methodology

There are two statistical methods offered by Eurostat within the scope of the circular economy monitoring framework, across the EU and based on member states. These are (1) Sankey Diagram for material flows and (2) Circular rate (circular material utilization rate).

Eurostat's Sankey Diagram shows the flows and quantities of materials extracted, imported, recycled and disposed of, and emissions from these processes. These flows and quantities are analyzed and calculated on 4 main material types:

- Biomass
- Metal

- Non-metallic minerals
- Fossil fuels and materials

Looking at the core of the methodology, the aim is to make calculations by including all materials and products that enter the country's economy and are processed. Therefore, it is necessary to consider that all materials and products are included in these four main groups. Biomass and all materials and products of animal and plant origin are discussed under this heading. Fossil fuels and materials include both fossil fuels and materials and products derived from these fuel materials. For example, plastic is included in this group because it is a petroleum product.

In Annex A of the Economy-wide material flow accounts handbook published by Eurostat in 2018, MF1 shows the classifications under biomass and MF4 shows the classifications under fossil fuels and materials. "MF.1.1.9 Yarns" and "MF.1.5.4 Animal-based products (animal fibres and skins, furs, leather, etc.)" can be given as examples of the biomass group. "MF.4.3 Fossil-based products", which includes polymer-based products and materials such as plastic and synthetic fibers, can be given as examples of fossil fuels and materials.[1]

Water and energy from renewable sources (solar, wind) are not included in Eurostat's Sankey Diagram method. Emissions from the combustion of fossil fuels and biomass are included.[2]

Eurostat has developed a new indicator in response to the need for a single indicator that summarizes the circularity situation at the macroeconomic level. This new indicator has been determined as the "circularity material utilization rate" and is briefly expressed as the "Circularity Rate". With this indicator, the contribution of the recycled material amount to the total material usage is evaluated in general. In other words, it reflects the amount of primary raw material that is prevented from being recovered by recycling.

The data required for both the Sankey Diagram and the Circularity Ratio are the data that member states report to Eurostat within the framework of legal obligations. The three main data sources used are:

- Economy-wide material flow accounts (EW-MFA)
- Waste Statistics Regulation (WstatR) data
- International trade in goods statistics (ITGS)

In line with the evaluations made, it was decided to develop the Sankey Diagram for Türkiye in general and to calculate the Circularity Rate in accordance with Eurostat. In parallel with this, it was decided to adapt the method and carry out sectoral studies with the data that can be obtained to make similar studies and calculations based on the priority of the value chains/sectors. Details of the methodology and its implementation will be provided in Section 3.2.

Questionnaires

[1] Eurostat (2018) Economy-wide material flow accounts handbook. Available at: https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-006

[2] European Commission (2022) Circular economy - material flows. Available at:. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows#Circularity_rate_.E2.80.93_methodology

A total of 133 institutions/organizations/units responded to the questionnaire, which was carried out between 04.07.2022 and 09.09.2022 within the scope of market research. Thirty-seven of them are from public institutions, 35 are from other institutions/organizations (international organizations, universities, private sector representative institutions and other NGOs), and 61 are from companies of electricity/electronics, informatics, machinery, battery/accumulator, automotive, energy, cement, paper, textile/leather and waste management sectors.

Considering the purpose and scope of the market survey, general questions to be asked all stakeholders and specific questions to be asked certain stakeholders were determined, and five different survey groups were formed accordingly:

1. Questionnaire for public institutions to request data for MFA study
2. Questionnaire for private sector representative organizations that are company members
3. Questionnaire for private sector representative organizations that are not company members
4. Questionnaire for companies
5. General questionnaire (all institutions/organizations other than the above 4 groups)

The survey, defined as the "questionnaire for companies", was developed in addition to be sent to private sector organizations that are members of the company, and to be forwarded to their members. In addition, explanations and questions about circular business models were added to the surveys of all private sector organizations. Brief information about the circular economy, the Project and the purpose of the survey was also included in all the surveys prepared.

1.2.3. Workshops

Circular Economy Workshops within the scope of Activity 1.2.2 were completed between October 3rd and 6th, 2022 in Ankara. The first workshop was held on October 3-4 for representatives from the private sector, and the second workshop was held on October 5-6 for target groups from public institutions and municipalities. In addition to the physical participation of 198 people from public and private sector institutions/organizations, 175 participants were participated in the workshops via remote connection.

Workshops were thoroughly used to produce intermediate outputs for the benchmarking process and the presentation of participatory validation of benchmarks. The subject of both workshops were elaboration and discussion of gaps and needs, benefits and challenges on the transition to a CE, in support to the baseline assessment and benchmarking process under Activity 1.1, as well as subsequent strategic and action planning under Component 2.

The aim of the workshops was to take a further step forward in understanding the differences between the EU and Turkish systems, through a more in-depth comparison of gaps and needs. Being a part of the benchmarking process, the workshops enabled familiarization of participants with the purpose and scope of the analytical process, discussion and validation of findings of gap/need analysis, and ultimately gave the chance also to come out with concrete proposals for the national strategy and action plan to submit policy makers.

A working sheet form to investigate the participants' understanding of the circular economy and their perception of gaps, needs, benefits, challenges and possible solutions was submitted and discussed during the workshops. It was designed to validate pre-determined focuses and an open section to give the chance to professionals coming from different sectors or public institutions to discuss its specific issues or propose specific solutions. The Workshop Assessment Report, which is the output of the workshops organized within the scope of Activity 1.2, was officially submitted on 26.10.2022 and officially approved on 24.11.2022.

2. RECENT EU CIRCULAR ECONOMY PACKAGES AND RELATED POLICIES

During the reporting period, the most recent policies and recommendations adopted within the scope of the EU Circular Economy Action Plan and other relevant policies are summarized in this section in reverse chronological order.

On November 30th, 2022, the Commission proposed to revise the Packaging and Packaging Waste Directive. This review contributes to reaching the objective of the European Green Deal and the new circular economy action plan to ensure that "all packaging on the EU market is reusable or recyclable in an economically viable way by 2030". It will also contribute to the commitment of the 2018 Plastics Strategy to ensure that by 2030 all plastics packaging placed on the market can be reused or recycled in a cost-effective manner". The headline target is to reduce packaging waste by 15% by 2040 per Member State per capita, compared to 2018. This would lead to an overall waste reduction in the EU of some 37%. It will happen through both reuse and recycling.

This revision aims to;

- prevent the generation of packaging waste, reducing it in quantity, and promoting reuse and refill
- ensure that all packaging on the EU market will be recyclable in an economically viable way by 2030
- increase the use of recycled plastics in packaging, thus enabling more high quality ("closed loop") recycling and substituting virgin materials

The key measures to bring about change on the ground include;

- targets for packaging waste reduction at Member State level, and mandatory reuse targets for economic operators for selected packaging groups
- restricting over-packaging and certain forms of unnecessary packaging, and supporting reuse and refill systems
- establishing criteria for design for recycling to be applied to all packaging
- minimum inclusion rates for recycled content in plastic packaging
- mandatory deposit return systems for plastic bottles and aluminium cans
- harmonised labelling of packaging and waste bins to facilitate correct consumer disposal of packaging waste[3]

The Commission also brings clarity to consumers and industry on biobased, compostable and biodegradable plastics with the **Communication, published on 30 November 2022, for an EU policy framework on biobased, biodegradable and compostable plastics** setting out for which applications such plastics are truly environmentally beneficial and how they should be designed, disposed of and recycled. A number of conditions have to be met for these plastics to have positive environmental impacts, rather than exacerbating plastic pollution, climate change and biodiversity loss. **This communication is not legally binding** and there is

[3] EC (2022) Packaging Waste. Available at: https://environment.ec.europa.eu/topics/waste-and-recycling/packaging-waste_en#review

currently no EU law in place applying to biobased, biodegradable and compostable plastics in a comprehensive manner.[4]

On April 5th, 2022, EC adopted proposals for revised EU measures to address pollution from large industrial installations including;

- Revision of the Industrial Emissions Directive
- Revision of the European Pollutant Release and Transfer Register (E-PRTR)

The overall aim of these proposals is to progress towards the EU's zero pollution ambition for a toxic-free environment and to support climate, energy and circular economy policies.

The Proposal for the Revision of the Industrial Emissions Directive (IED) aims to;

- Ensure full and consistent implementation of the IED across Member States, with tighter permit controls on air and water emissions;
- Increase investment in new, cleaner technologies taking into account energy use, resource efficiency and water reuse whilst avoiding lock-in to obsolete technologies;
- Support more sustainable growth of sectors that are key to building a clean, low carbon and circular economy;
- Cover additional intensive farming and industrial activities, ensuring that sectors with significant potential for high resource use or pollution also curb environmental damage at source by applying Best Available Techniques;
- Establish an Innovation Centre for Industrial Transformation and Emissions (INCITE);
- Integrate the previously separate requirements for depollution and de-carbonization so that future pollution control investments take better account of greenhouse gas emissions, resource efficiency and water reuse.
- Enhance data transparency and public access to environmental information by making permit summaries available online and providing more opportunities for public participation in the setting and review of permits.[5]

The Proposal for the Revision of the European Pollutant Release and Transfer Register (E-PRTR) aims to;

- improve data transparency and public access to environmental information through the Industrial Emissions Portal;
- re-align the sectoral scope and granularity of reporting in order to better support IED implementation;
- improve the ability to respond to new reporting demands on pollutants and activities;
- provide information on the industrial use of energy, water and raw materials.[6]

[4] EC (2022) Biobased, biodegradable and compostable plastics. Available at: https://environment.ec.europa.eu/topics/plastics/biobased-biodegradable-and-compostable-plastics_en
[5] EC (2022) Revision of the Industrial Emissions Directive (IED). Available at: https://ec.europa.eu/environment/industry/stationary/ied/evaluation.htm
[6] EC (2022) Revision of the European Pollutant Release and Transfer Register (E-PRTR) Regulation. Available at: https://ec.europa.eu/environment/industry/stationary/e-prtr/evaluation.htm

On March 30th, 2022, EC adopted package of measures proposed in the CEAP including;

- Sustainable Products Initiative, including the proposal for the Ecodesign for Sustainable Products Regulation
- EU Strategy for Sustainable and Circular Textiles
- Proposal for a revised Construction Products Regulation
- Proposal for empowering consumers in the Green Transition

EC proposed new rules to make almost all physical goods on the EU market more friendly to the environment, circular, and energy efficient throughout their whole lifecycle from the design phase through to daily use, repurposing and end-of-life.

The proposal for a Regulation on Ecodesign for Sustainable Products addresses product design, which determines up to 80% of a product's lifecycle environmental impact. It sets new requirements to make products more durable, reliable, reusable, upgradable, reparable, easier to maintain, refurbish and recycle, and energy and resource efficient. In addition, product-specific information requirements will ensure consumers know the environmental impacts of their purchases. All regulated products will have Digital Product Passports. This will make it easier to repair or recycle products and facilitate tracking substances of concern along the supply chain. The proposal will establish the legislative infrastructure necessary for the EU to set labeling requirements (e.g. a new label for the repairability of products). The proposal also contains measures to end the destruction of unsold consumer goods, as well as expand green public procurement and provide incentives for sustainable products.

The proposal extends the existing Ecodesign framework in two ways: first, to cover the broadest possible range of products; and second, to broaden the scope of the requirements with which products are to comply. Setting criteria not only for energy efficiency, but also for circularity and an overall reduction of the environmental and climate footprint of products will lead to more energy and resource independence and less pollution. It will strengthen the Single Market, avoiding diverging legislation in each Member State, and offer economic opportunities for innovation and job creation, notably in remanufacturing, maintenance, recycling and repair. The proposal will set a framework and a process through which the Commission, working in close cooperation with all those concerned, will progressively set out requirements for each product or group of products.

Together with this proposal, the Commission has also adopted **an Ecodesign and Energy Labelling Working Plan 2022-2024** to cover new energy-related products, update and increase the ambition for products that are already regulated, as a transitionary measure until the new regulation enters into force. It notably addresses consumer electronics (smartphones, tablets, solar panels) - the fastest growing waste stream.

The EU Strategy for Sustainable and Circular Textiles sets out the vision and concrete actions to ensure that by 2030 textile products placed on the EU market are long-lived and recyclable, made as much as possible of recycled fibres, free of hazardous substances and produced in respect of social rights and the environment.

The Commission's 2030 Vision for Textiles is as follows:

- All textile products offered to the EU market are durable, recyclable and largely made from recycled fibers, free from hazardous substances, respectful of social rights and the environment.
- "fast fashion is obsolete" and consumers benefit longer from high-quality affordable textiles
- profitable reuse and repair services widely available
- The textile industry is competitive, flexible and innovative, with manufacturers taking responsibility for their products along the value chain, with sufficient capacity for recycling and minimal incineration and landfill

The strategy lays out a series of forward-looking actions. The Commission will:

- identifying design requirements to make textiles last longer, make it easier to repair and recycle,
- providing clearer information on textiles and digital product passport,
- empowering consumers and tackling greenwashing by ensuring companies' green claims are true,
- stopping overproduction and overconsumption and preventing the destruction of unsold or returned textiles,
- harmonizing EU Extended Producer Responsibility rules and economic incentives to make products more sustainable,
- addressing the unintentional release of microplastics from synthetic textiles,
- addressing the challenges arising from exporting textile waste, adopting an EU Kit against counterfeiting by 2023.

release of a transition pathway by the end of 2022 - an action plan for actors in the textile ecosystem to successfully implement green and digital transitions and increase resilience[7]

Revised Construction Product Regulation was proposed in order to boost the internal market for construction products and ensure that the regulatory framework in place is fit for making the built environment deliver on our sustainability and climate objectives.

The revision will strengthen and modernise the rules in place since 2011. It will constitute a harmonised framework to assess and communicate the environmental and climate performance of construction products. New product requirements will ensure that the design and manufacture of construction products is based on state of the art to make these more durable, repairable, recyclable, easier to re-manufacture.

It will also make it easier for standardisation bodies to do their work of creating common European standards. Together with enhanced market surveillance capacities and clearer rules for economic operators along the supply chain, this will help to remove obstacles to the free movement of the internal market. Finally, the revised Regulation will offer digital solutions to

[7] EC (2022) EU strategy for sustainable and circular textiles. Available at: https://ec.europa.eu/environment/publications/textiles-strategy_en

reduce administrative burdens, particularly on SMEs, including a construction products database and a Digital Products Passport.[8]

Proposal for empowering consumers in the Green Transition is adopted on new rules to empower consumers in the green transition so that consumers are better informed about the environmental sustainability of products and better protected against greenwashing.

The proposal aims to ensure consumers get adequate information on products' durability and reparability before purchasing a product. In addition, it will strengthen consumer protection against untrustworthy or false environmental claims and premature obsolescence practices.

The proposal amends two existing consumer law Directives: the Consumer Rights Directive and the Unfair Commercial Practices Directive.

These proposed revisions in EU consumer law were announced in the New Consumer Agenda and the EU CEAP. They aim to support the changes needed in consumer behaviour to achieve climate and environmental objectives under the European Green Deal by ensuring that consumers have better information on the durability and reparability of products and by protecting consumers from commercial practices that prevent consumers from shopping more sustainably.

For instance, the new rules will require traders to provide information on the product's reparability score, where applicable or other repair information given by the producer (availability of spare parts, repair manual, etc.).

The new rules will also ban not informing about features (such as updates) introduced to limit durability and incompatibility of 'third party' consumables or spare parts. In other words, misinformation will be prohibited by inducing the consumer to replace the consumables of a product earlier than necessary and wrongfully saying that the product can be repaired even if it cannot be repaired.[9]

On 28 October 2021, the European Commission submitted a proposal for a regulation to Update the Rules on Persistent Organic Pollutants (POPs) in Waste. Following the proposal, Regulation No 2022/2400, which revised Annexes IV and V of the EU POPs Regulation No. 2019/1021 on Persistent Organic Pollutants, was published on 23 November 2022.

With the proposal, it is aimed to implement the EU's international obligations under the Stockholm Convention and the obligations from the EU POPs Regulation (2019/1021) for the articles within the scope of the proposal. The main objective of the proposal is to protect human health and the environment from the negative effects caused by POPs and to eliminate or minimize POP emissions from waste. The overall objectives of this initiative are also, to achieve as far as possible, the non-toxic material cycles of the European Green Deal, to increase recycling and circularity, to reduce greenhouse gas emissions and to achieve an optimal balance with these goals.

[8] EC (2022) Green Deal: New proposals to make sustainable products the norm and boost Europe's resource independence. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2013
[9] EC (2022) Circular Economy: Commission proposes new consumer rights and a ban on greenwashing. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2098

More specifically, the aim of this initiative is to update the concentration limits set in Annexes IV and V of the POPs Regulation, which determine how wastes containing POPs are handled, in particular whether they can be recycled or disposed of, for certain substances and groups of substances. This update aligns Annexes IV and V of the Regulation with the substances listed in the Stockholm Convention and Annex I of the POPs Regulation and introduces concentration limit values for them. It also adapts limit values for some already listed substances to scientific and technical progress.[10] [11]

On November 17th, 2021, the EC tabled a proposal to revise EU rules governing Shipments of Waste.

The proposed regulation aims at easing shipments of waste for reuse and recycling in the EU, to support the transition to a circular economy; ensuring that waste exported from the EU is managed in an environmentally sound manner in the destination countries; and stepping up enforcement to counteract illegal shipments of waste. While supporting the proposed streamlining and digitalisation of procedures, stakeholders have stressed the need for significant improvements to ensure that the new regulation fulfils its objectives, in particular as regards exports of waste.

In the new CEAP, part of the European Green Deal, the EC committed to addressing waste exports from the EU, noting that in many cases, such exports result in both negative environmental and health impacts in the countries of destination, and in loss of resources and economic opportunities for the EU's recycling industry. It also pinpointed the EU's heavy reliance on non-EU countries waste treatment for some waste streams, laid bare by import restrictions introduced in recent years by some third countries that used to receive considerable quantities of waste from the EU, in particular China.

According to the Eurostat data, in 2020, EU exports of waste to non-EU countries reached 32.7 million tonnes (+75 % since 2004). This represents about 16% of global trade in waste. Türkiye – a member of the Organisation for Economic Co-operation and Development (OECD) – is by far the largest destination for EU waste exports, receiving around 13.7 million tonnes in 2020.[12]

The proposal introduces stricter measures to monitor waste exports to OECD countries, introducing a 'safeguard procedure' in the event that these exports lead to a situation where the waste is not managed in an environmentally sound manner (article 42). If there is a considerable increase in waste exports to one of these countries within a short period, and insufficient evidence of the country's ability to treat the waste properly, the Commission would seek information from the country concerned. If the information provided were

[10] European Commission (2021) regulation proposal for the Update of the Rules on Persistent Organic Pollutants in Waste, available at: https://eur-lex.europa.eu/resource.html?uri=cellar:1d71994b-37cd-11ec-8daf-01aa75ed71a1.0007.02/DOC_1&format=PDF

[11] Regulation 2022/2400 amending Annexes IV and V of the European Commission (2022) Directive on Persistent Organic Pollutants (2019/1021), available at: https://eur-lex.europa.eu/legal-content/EN /TXT/PDF/?uri=CELEX:32022R2400&from=EN

[12] European Commission (2022) Trade in waste by type of material and partner, Available at: https://ec.europa.eu/eurostat/databrowser/view/ENV_WASTRDMP__custom_5005321/default/table?lang=en

unsatisfactory, the Commission would be empowered to suspend waste exports to that country through delegated acts.

The proposed regulation would require exporters to make sure, prior to exporting waste that the facilities that will manage the waste in the country of destination have been subject to an audit, to be conducted by an independent and accredited third party (article 43). This audit, which would verify compliance with a number of criteria set out, should be repeated at least every three years. If an exporter receives plausible information indicating that the facility is no longer compliant, it must carry out an ad-hoc audit without delay. For waste exports to OECD countries, the proposal provides for a possible exemption from the audit requirements if an international agreement between the country concerned and the EU recognises that the facilities in that country will manage waste in an environmentally sound manner.[13]

On December 22nd, 2020, the EC adopted new rules on the export, import and intra-EU shipment of plastic waste amending the Regulation 1013/2006 on shipments of waste.

These new rules ban the export of plastic waste from the EU to non-OECD countries, except for clean plastic waste sent for recycling. Exporting plastic waste from the EU to OECD countries and imports in the EU will also be more strictly controlled. Exporting hazardous plastic waste and plastic waste that is hard to recycle from the EU to OECD countries will be subject to the "prior notification and consent procedure". Under this procedure, both the importing and exporting country must authorise the shipment.

These new rules amends the EU's Waste Shipment Regulation (Regulation (EC) No 1013/2006), and implement the decision taken by 187 countries in May 2019 at the 14th Conference of the Parties of the Basel Convention. This decision set up a global regime governing international trade in plastic waste for the first time, by including new entries on plastic waste in the Annexes of the Convention. This demonstrates that multilateral institutions are increasingly taking binding actions against plastic pollution. By banning the export outside the OECD of plastic waste that is difficult to recycle such as mixed or contaminated plastics, the EU is actually going further than the requirements of the Basel Convention.

In 2019, the EU exported 1.5 million tonnes of plastic waste, mostly to Türkiye and Asian countries such as Malaysia, Indonesia, Vietnam, India and China. The share of exported plastic waste to China has radically fallen since the country's adoption of restrictions on the import of plastic waste in 2018.[14]

On December 10th, 2020, the Commission proposed a new Batteries Regulation COM(2020) 798 - 2020/0353 (COD). This Regulation aims to ensure that batteries placed in the EU market are sustainable and safe throughout their entire life cycle.

[13] European Parliament (2022) Revision of the EU's Waste Shipment Regulation. Available at: https://www.europarl.europa.eu/RegData/etudes/BRIE/2022/729330/EPRS_BRI(2022)729330_EN.pdf
[14] EC (2020) Plastic waste shipments: new EU rules on importing and exporting plastic waste. Available at: https://environment.ec.europa.eu/news/plastic-waste-shipments-new-eu-rules-importing-and-exporting-plastic-waste-2020-12-22_en

The Commission proposes mandatory requirements for all batteries (i.e. industrial, automotive, electric vehicle and portable) placed on the EU market. Requirements such as use of responsibly sourced materials with restricted use of hazardous substances, minimum content of recycled materials, carbon footprint, digital passport, performance and durability and labelling, as well as meeting collection and recycling targets, are essential for the development of more sustainable and competitive battery industry across Europe and around the world.

Regarding batteries and waste batteries, which will repeal Directive 2006/66/EC and amend Regulation (EU) No 2019/1020, With the Proposal for the Regulation of the European Parliament and the Council, it is aimed that the world demand for battery/battery systems, especially electric vehicle batteries, will increase 14 times by 2030 and considering that 17% of this demand belongs to Europe, with the Draft EU regulation No. 2020/0353/COD prepared especially for lithium-based new generation batteries, which have a critical value chain with high cyclic potential it is also aimed to ensure competition and sustainability in battery production and recycling in EU countries by creating new environmental value instruments without causing any fragility in the EU market due to the demand of EU countries for lithium and rare earth elements in the coming years.

Providing legal certainty will additionally help unlock large-scale investments and boost the production capacity for innovative and sustainable batteries in Europe and beyond to respond to the fast-growing market.

With this proposal, the Commission also aims to boost the circular economy of the battery value chains and promote more efficient use of resources with the aim of minimising the environmental impact of batteries. From 1 July 2024, only rechargeable industrial and electric vehicles batteries with a carbon footprint declaration will be able to be placed on the EU market. for which a carbon footprint has been declared will be allowed to be placed on the market. Non-rechargeable batteries are planned to be removed from the EU market on 31 December 2030.To close the loop and maintain valuable materials used in batteries for as long as possible in the European economy, the Commission proposes to establish new requirements and targets on the content of recycled materials and collection, treatment and recycling of batteries at the end-of-life part. This would make sure that industrial, automotive or electric vehicle batteries are not lost to the economy after their useful service life.

To significantly improve the collection and recycling of portable batteries, the current figure of 45% collection rate should rise to 64 % in 2025 and 70% in 2030 so that the materials of batteries we use at home are not lost for the economy. Other batteries – industrial, automotive or electric vehicle ones – have to be collected in full. All collected batteries have to be recycled and high levels of recovery have to be achieved, in particular of valuable materials such as cobalt, lithium, nickel and lead. As of January 1, 2030, it is aimed to recycle at least Cobalt 12%, Lead 85%, Lithium 4% and Nickel 4% of the batteries subject to recycling. Also as of January 1, 2035, it is aimed to recycle at least 20% Cobalt, 85% Lead, 10% Lithium and 12% Nickel of the batteries subject to recycling.

The proposed regulation defines a framework (secondary use) that will facilitate the repurposing of batteries which energy storage capacity decreases to a certain extent after

being used for a while, but are not yet considered as waste,in electric vehicles so that they can have a second life, for example as stationary energy storage systems, or integration into electricity grids as energy resources.

The use of new IT technologies, notably the Battery Passport and interlinked data space will be key for safe data sharing, increasing transparency of the battery market and the traceability of large batteries throughout their life cycle. It will enable manufacturers to develop innovative products and services as part of the twin green and digital transition.

With its new battery sustainability standards, the Commission will also promote globally the green transition and establish a blueprint for further initiatives under its sustainable product policy.[15]

On 10 March 2020, the Commission laid the foundations for an industrial strategy that will support the twin transition to a green and digital economy, make EU industry more competitive globally and increase Europe's clear strategic autonomy. The strategy includes an SME strategy that aims to reduce bureaucracy and help Europe's SMEs do business, access finance and lead the digital and green transitions in the single market and beyond. The strategy also includes concrete steps to overcome obstacles to a well-functioning single market.

It was **updated in May 2021** to ensure that the EU's industrial target considers the conditions following the COVID-19 crisis, while ensuring that EU industry can lead the way in the transition to a green, digital, and resilient economy.

The COVID-19 crisis has strongly affected the EU economy. Its impact varies across ecosystems and the size of companies. The crisis revealed the interdependence of global value chains and demonstrated the critical role of a globally integrated and well-functioning Single Market.

Although the impact of the crisis differs between different ecosystems and companies, the key issues it highlights are:

- Borders that restrict the free movement of people, goods and services
- Disrupted global supply chains affecting the availability of essential products
- Demand disruption

The Industrial Strategy, updated to address these issues, proposes new measures to take into account the lessons learned from the crisis and sustain investment. These measures focus in particular on:

- The Resistance of the Single Market
- Strengthening the EU's Open Strategic Autonomy
- Accelerating the Twin Transition[16]

[15] EC (2020) Sustainable batteries for a circular and climate neutral economy. Available at: https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2312

[16] https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/europe-fit-digital-age/european-industrial-strategy_en

Apart from the current developments above, information on the **Proposal on the Substantiation of Green Claims** and **Measures to Reduce the Environmental Impact of Microplastic Pollution** from upcoming actions and initiatives by 2023 are presented below.

the Proposal on the Substantiation of Green Claims will require companies to verify claims made about the environmental footprint of their products/services using standard methods. The aim is to reduce "greenwashing" (giving companies a false impression of their environmental impact) by making claims credible, comparable, and verifiable across the EU. This will help investors make more sustainable decisions and increase consumers' trust in green labels and information.

The feedback process continues within the scope of the law proposal and public consultation. The initial impact analysis has been completed. However, full regulatory impact analysis and EU eco-label criteria for financial products that will help prevent “greenwashing” are in preparation. Commission adoption is planned for 2023.[17]

Measures to Reduce the Environmental Impact of Microplastic Pollution aim to combat microplastics that are unintentionally released into the environment. The focus will be on labeling, standardization, certification and regulatory measures for the main sources of these plastics. It aims to reduce environmental pollution and potential health risks by preserving scientific development and single market principles regarding the risks and occurrence of microplastics in the environment, drinking water and food and promoting competitiveness and innovation.

The feedback process continues within the scope of public consultation. Regulatory impact analysis started with an evidence-based call for opinion.[18]

2.1. General Progress in the EU

Progress on the circular economy is monitored by the European Commission via a framework consisting of 10 indicators, some of which are broken down in sub-indicators. These ten indicators are divided into four thematic areas: “production and consumption”, “waste management”, “secondary raw materials”, “competitiveness and innovation”.

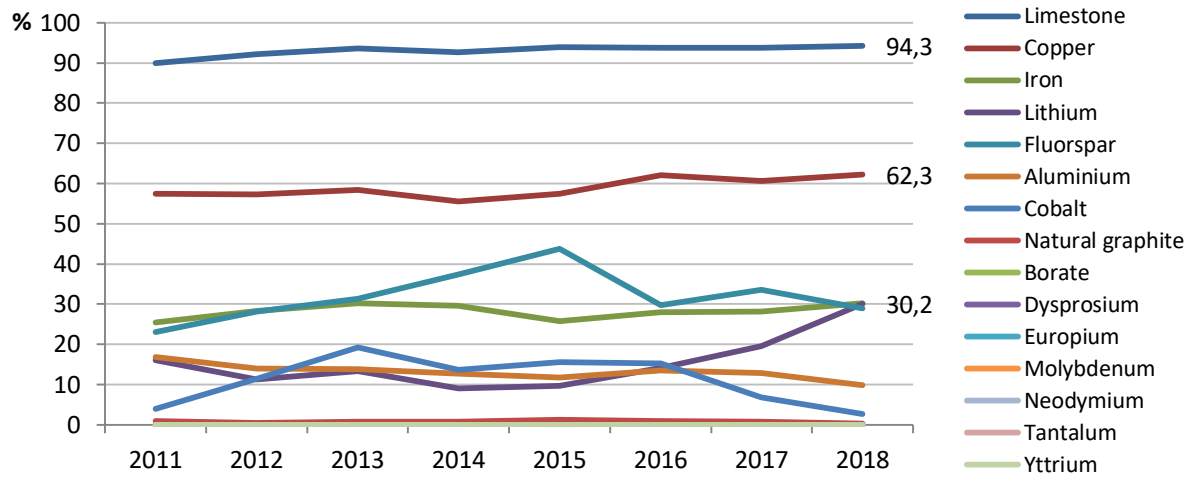
A. Production and consumption: Monitoring the production and consumption phase is essential for understanding progress towards the circular economy. Households and economic sectors should decrease the amount of waste they generate. In the longer term, this behaviour may contribute to an increasing self-sufficiency of selected raw materials for production in the EU. This area consists of four indicators:

1. Self-sufficiency of raw materials for production in the EU: This indicator measures how dependent the EU is on the rest of the world for various raw materials.

[17] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12511-Environmental-performance-of-products-businesses-substantiating-claims_en

[18] https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12823-Microplastics-pollution-measures-to-reduce-its-impact-on-the-environment_en

Figure 1 - EU Self-Sufficiency for Raw Materials[19]



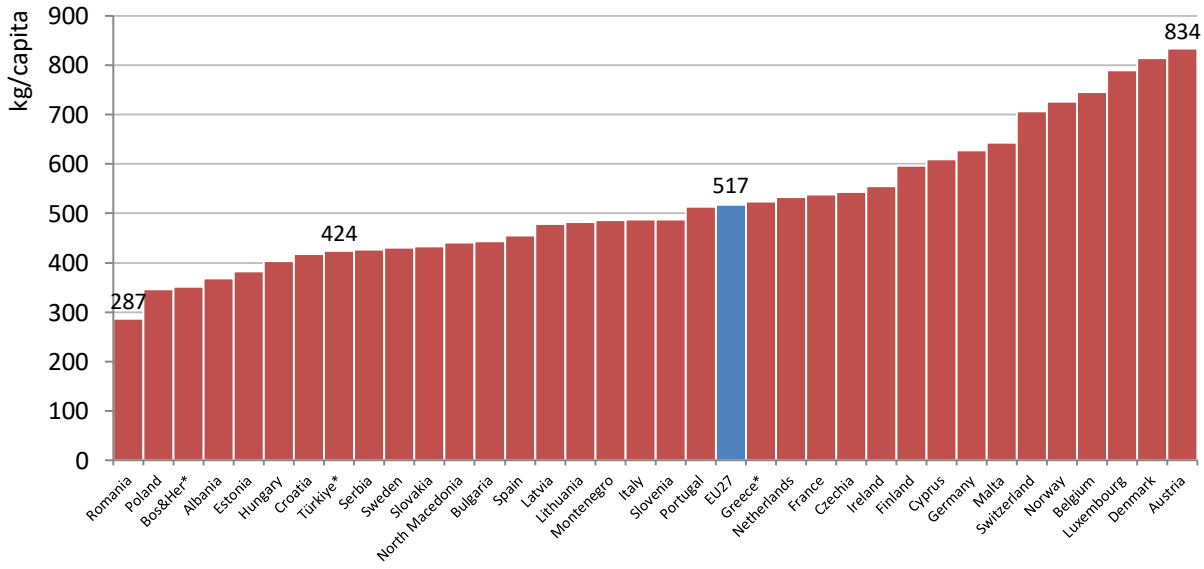
2. Green public procurement (as an indicator for financing aspects): This indicator will follow the share of major public procurements in the EU that include environmental requirements.

In addition to the indicators based on the available data capturing the main elements of circular economy, green public procurement is one of the new indicators in the process of being developed.

3. Waste generation (as an indicator for consumption aspects): This indicator presents the generation of municipal waste per capita; total waste generation (excluding major mineral waste) per GDP unit and in relation to domestic material consumption

The figure below on the generation of municipal waste per capita in the EU sets an example as an indicator from consumption aspect.

Figure 2 - Generation of Municipal Waste Per Capita in the EU (2020)[20]



[19] Eurostat (2022) EU Self-Sufficiency for Raw Materials. Available at: https://ec.europa.eu/eurostat/databrowser/view/cei_pc010/settings_1/table?lang=en

[20] Eurostat (2022) Generation of Municipal Waste Per Capita. Available data: https://ec.europa.eu/eurostat/databrowser/view/cei_pc031/default/table?lang=en

*2019

4. Food waste: This indicator represents the amount of food waste generated in the EU.

In addition to the indicators based on the available data capturing the main elements of circular economy, food waste is one of the new indicators in the process of being developed.

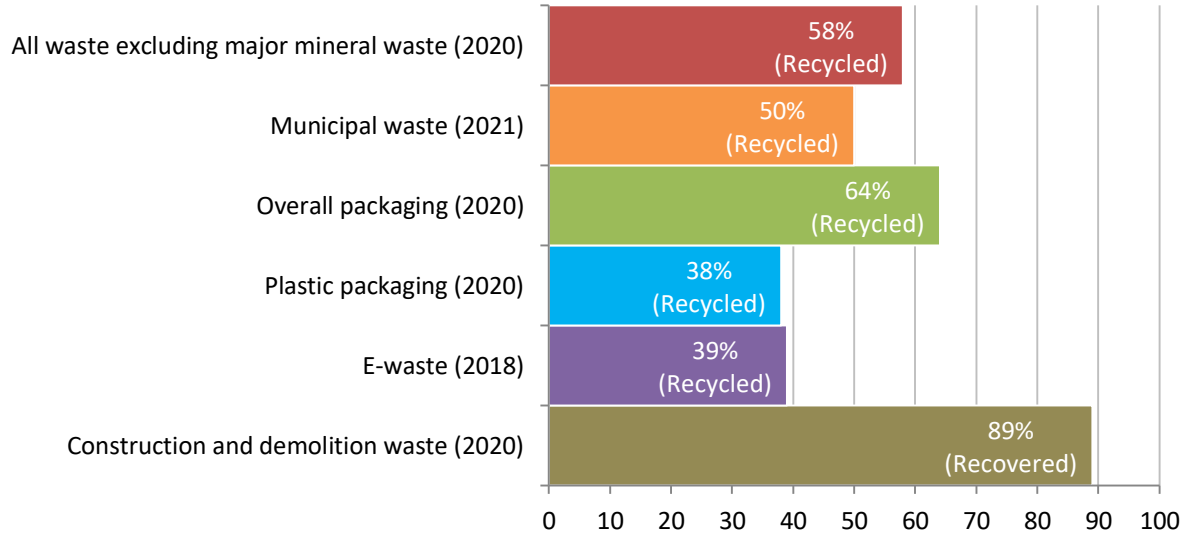
B. Waste management: Increasing recycling is part of the transition to a circular economy. This area focuses on the share of waste which is recycled and actually returned into the economic cycle to continue creating value. It consists of two indicators:

5. Recycling rates (the share of waste which is recycled): This deep-seated indicator shows the recycling rate of municipal waste and of all waste except major mineral waste

6. Specific waste streams (packaging waste, biowaste, e-waste, etc.): Recycling rates of overall packaging waste, plastic packaging, wood packaging, waste electrical and electronic equipment, recycled biowaste per capita and recovery rate of construction and demolition waste were monitored by the Eurostat for many years.

The figure below provides a short overview on the recycling or recovery rates of different waste streams in the EU.

Figure 3 - Recycling Rates of Different Waste Streams in the EU27[21]

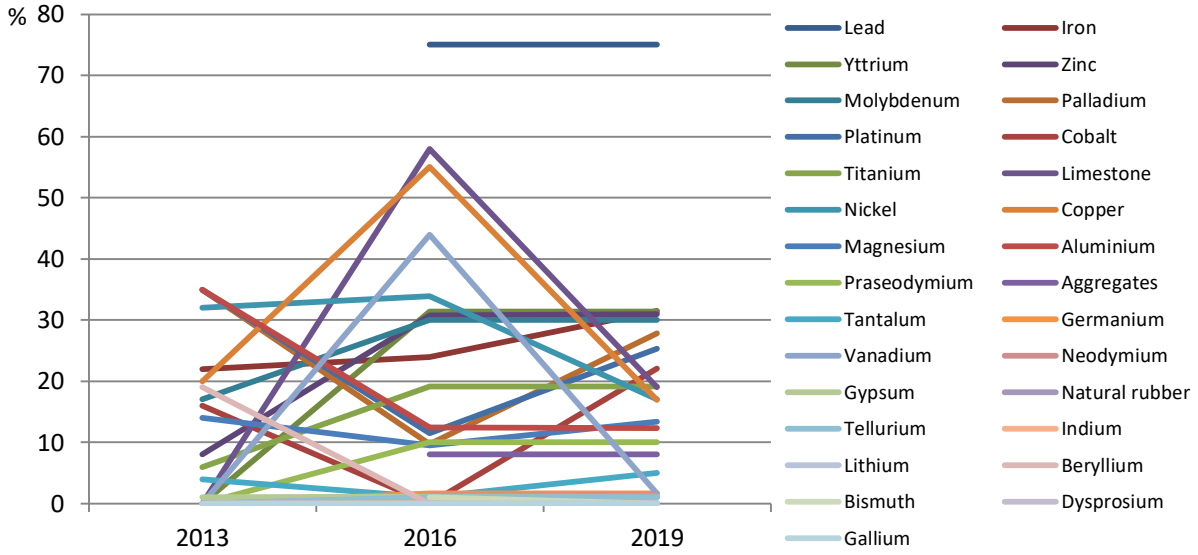


C. Secondary raw materials: To close the loop, material and products need to be re-introduced into the economy, for example in form of new materials or products. Recycled materials replace newly extracted natural resources, reduce the environmental footprint of production and consumption and increase the security of the future supply of raw materials. This field consists of two indicators:

7. Contribution of recycled materials to raw materials demand: This indicator measures, for a given raw material, how much of its input into the production system comes from the recycling of end-of-life products.

[21] EC (2022) Circular Economy Indicators. Available at: https://ec.europa.eu/eurostat/web/circular-economy/indicators

Figure 4 - End-of-Life Recycling Input Rates in the EU[22]



8. Trade of recyclable raw materials between the EU Member States and with the rest of the world: This indicator measures the quantities of selected recyclable waste categories and by-products that are shipped between the EU Members States (intra-EU) and across the EU borders (extra-EU). Five classes have been selected: plastic; paper and cardboard; precious metal; iron and steel; copper, aluminium and nickel. The indicator includes the following variables:

- Intra EU trade of selected recyclable raw materials (measured as the Imports from EU countries),
- Imports from non-EU countries and
- Exports to non-EU countries of selected recyclable raw materials (as regards extra-EU trade).

The indicator is based on International Trade in Goods Statistics (ITGS) published by Eurostat. The scope of the "recyclable raw materials" is measured in terms of relevant product codes from the Combined Nomenclature used in International Trade in Goods Statistics.

D. Competitiveness and innovation: The circular economy contributes to the creation of jobs and growth, as illustrated below. The development of innovative technologies improves product designs for easier re-use and promotes innovative industrial processes. This field consists of two indicators:

9. Private investments, jobs and gross value added: This indicator measures the private investments, number of persons employed, and gross value added in the circular economy sectors.

The indicator includes "Gross investment in tangible goods", "Number of persons employed" and "Value added at factor costs"[23] in the following three sectors: the recycling sector, repair

[22] Eurostat (2022) Contribution of recycled materials to raw materials demand - end-of-life recycling input rates (EOL-RIR). Available at: https://ec.europa.eu/eurostat/databrowser/view/cei_srm010/default/table?lang=en

and reuse sector and rental and leasing sector. For instance below figures display the number of persons employed related to circular economy sectors and percentage of the value added to Gross Domestic Product (GDP) respectively. Overall, EU27 countries generated almost 3.7 million CE related jobs and 1% CE related share in total GDP in 2019.

Figure 5 - Persons Employed Related to Circular Economy Sectors in the EU[24]

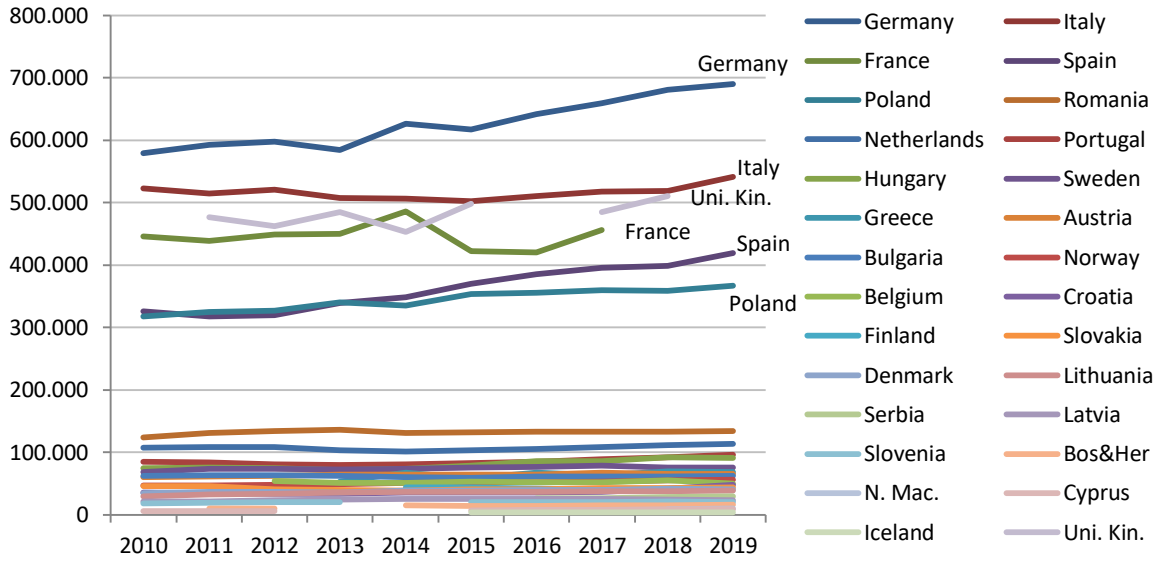
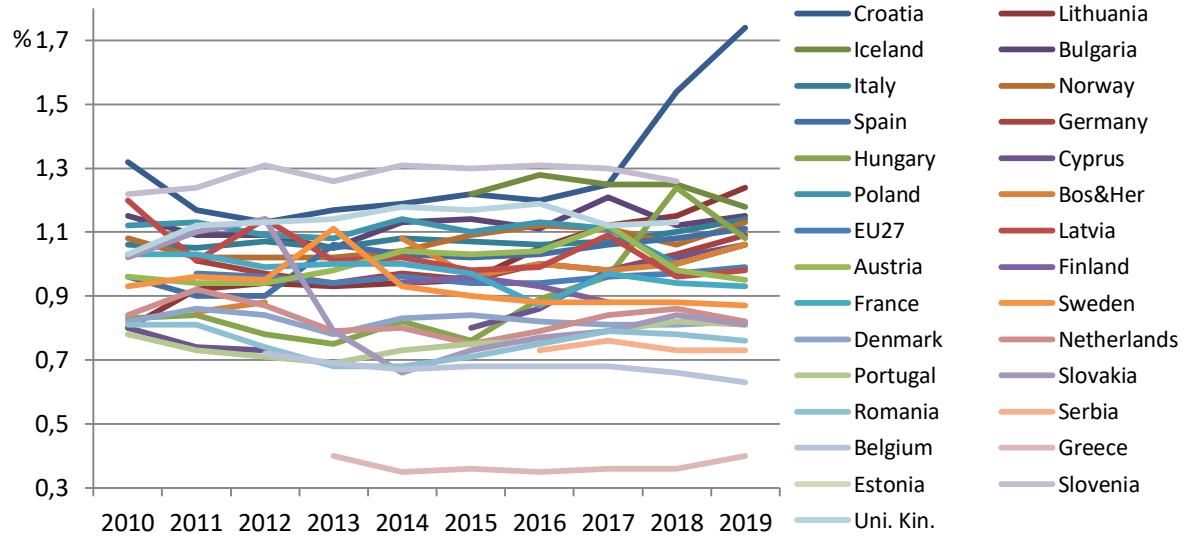


Figure 6 - Percentage of the Value Added to Gross Domestic Product in the EU (GDP)[25]



10. Patents related to recycling and secondary raw materials as a proxy for innovation: This indicator measures the number of patents related to waste management and recycling.

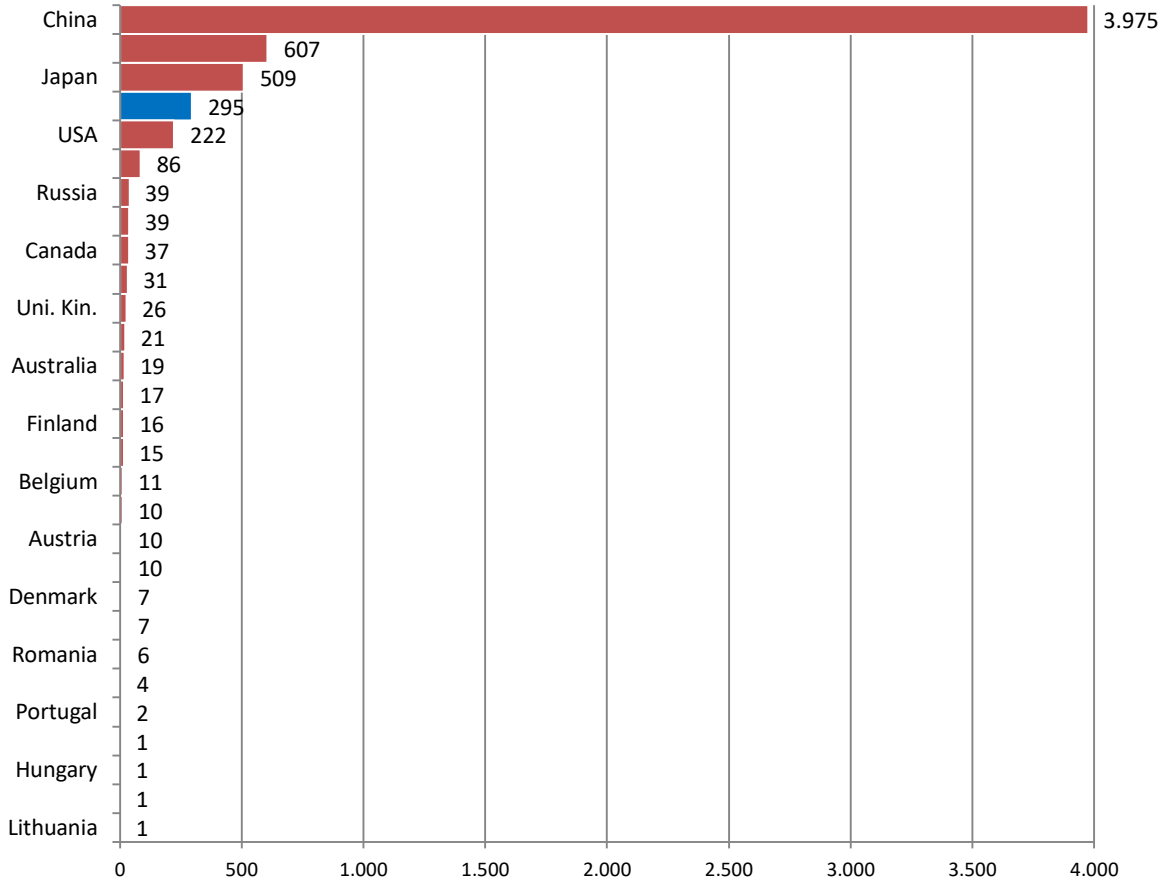
[23] The added value in factor cost is the gross income from operating activities after adjusting for operating subsidies and indirect taxes.

[24] Eurostat (2022) Private investments, jobs and gross value added related to circular economy sectors. Available at: https://ec.europa.eu/eurostat/databrowser/view/CEI_CIE010__custom_4084231/default/table?lang=en

[25] Eurostat (2022) Private investments, jobs and gross value added related to circular economy sectors. Available at: https://ec.europa.eu/eurostat/databrowser/view/CEI_CIE010__custom_4084231/default/table?lang=en

The attribution to recycling and secondary raw materials was done using the relevant codes in the Cooperative Patent Classification. The term 'patents' refers to patent families, which include all documents relevant to a distinct invention, thus preventing multiple counting. A fraction of the family is allocated to each applicant and relevant technology. [26]

Figure 7 - Number of Patents Related to Recycling and Secondary Raw Materials in the EU and Other Countries (2019)[27]



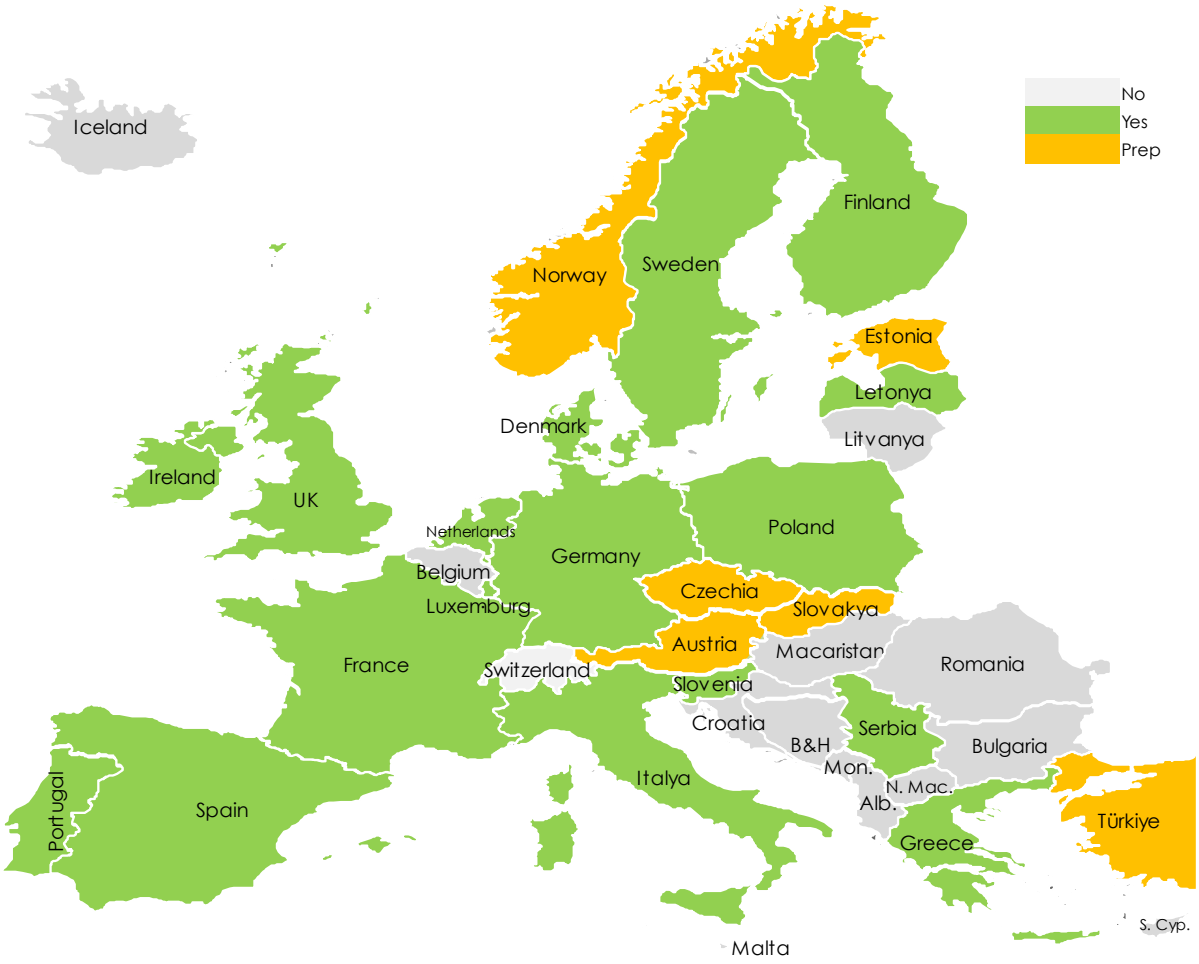
2.2. Member States' Efforts

Some member states have already published CE strategies, roadmaps and action plans. 16 countries among the EU prepared and started to implement their national strategies and action plans. 6 countries, including Türkiye, continue their efforts to prepare their national documents (see the map below). All strategies contain an overall objective, mainly economic and ecological reasons for implementing a CE strategy were mentioned and they focused primarily on production-related actions for implementation. In the following section, the efforts of three Member States, namely the Netherlands, France and Finland are examined thoroughly.

[26] EC (2022) Circular Economy Indicators. Available at: https://ec.europa.eu/eurostat/web/circular-economy/indicators

[27] Eurostat (2022) Patents related to recycling and secondary raw materials. Available at: https://ec.europa.eu/eurostat/databrowser/view/cei_cie020/default/table?lang=en

Figure 8 - National Strategies and Action Plans on the Circular Economy in the EU[28,29]



The circularity rate is the share of material resources used which came from recycled waste materials, thus saving extractions of primary raw materials. The circularity rate is part of the EU monitoring framework on the circular economy. In 2020, the EU's circular material use rate (referred to as the circularity rate) reached 12.8% (please see Figure 9). This means that almost 13% of material resources used in the EU came from recycled waste materials. Compared with 2019, the circularity rate increased by 0.8 percentage points (pp). The rate has maintained a stable growth trend since 2004 (8.3%), the first year for which data are available.

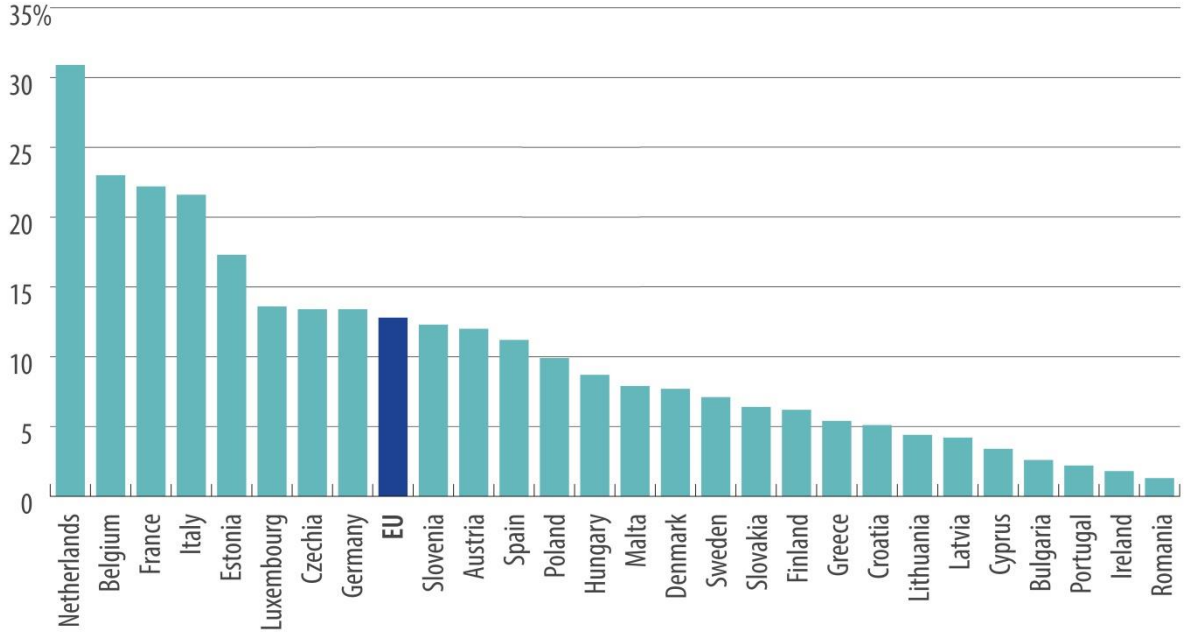
In 2020, the circularity rate was highest in the Netherlands (31%), followed by Belgium (23%) and France (22%). The lowest rate was recorded in Romania (1%), followed by Ireland and Portugal (both 2%). Differences in the circularity rate among the Member States are based not only on the amount of recycling of each country but also on structural factors in national economies.

[28] UNECE (2021) National action plans on the Circular Economy of UNECE member States .Available at: https://unece.org/sites/default/files/2021-06/National%20Action%20Plans%20of%20UNECE%20member%20States%20on%20the%20circular%20economy.pdf

[29] University of Graz (2021) A comparison of national circular economy strategies and roadmaps of EU countries and the resulting learning potential for Austria. Available at: https://unipub.uni-graz.at/obvugrhs/download/pdf/6473373?originalFilename=true

Depending on the main type of material, the circularity rate also presents some considerable differences, but small increases were registered in all 4 categories. In 2020, the circularity rate for metals was 25% (+0.7 pp compared with 2019), for non-metallic minerals (including glass) 16% (+0.7 pp), biomass (including paper, wood, tissue, etc.) 10% (+0.2 pp) and fossil fuels 3% (+0.5 pp).[30]

Figure 9 - Circular Material Use Rate in the EU, 2020 (%)[31]



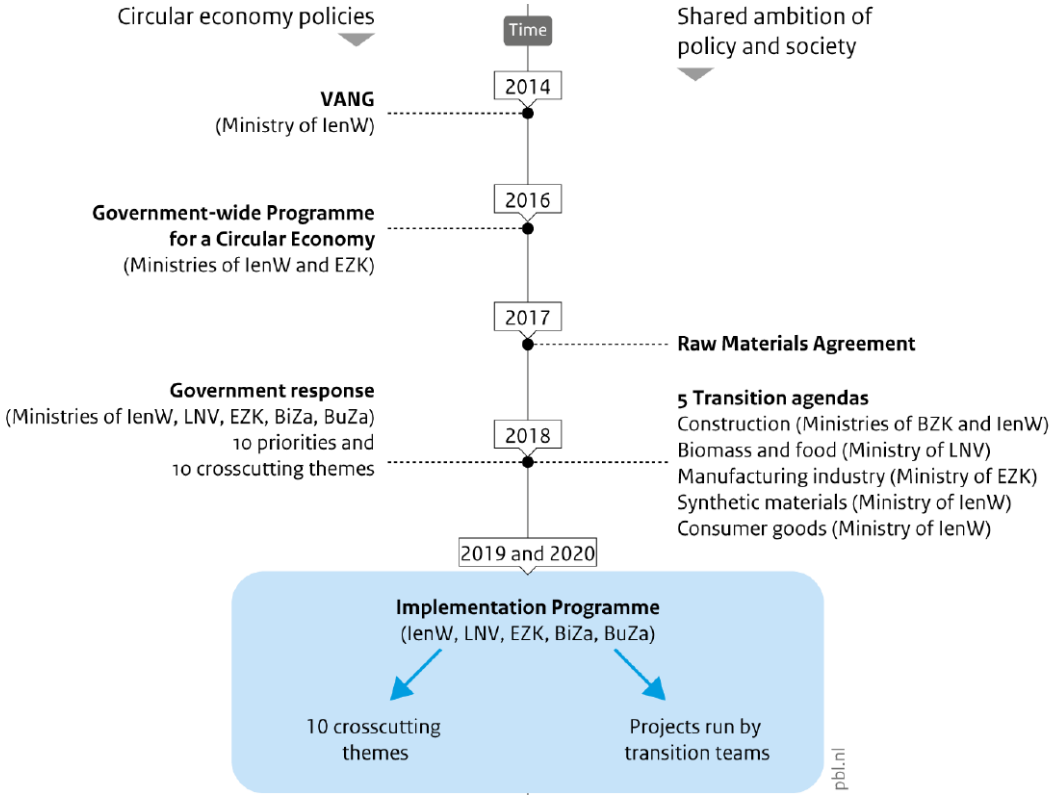
2.2.1. The Netherlands

The Dutch Government aims to achieve a fully circular economy by 2050 and sees monitoring as an important instrument to assess progress of the transition. The government and societal stakeholders in the Netherlands have formulated ambitions and goals for attaining a more circular economy.

Nederland Circulair 2050 is the first government-wide programme for the circular economy. It formulates the ambition to achieve a fully circular economy in the Netherlands by 2050. The programme covers all the material resources in the Netherlands, but has a specific target for abiotic resources (minerals, metals and fossil fuels): to halve the use of primary abiotic resources by 2030. This comes on top of existing targets for waste, such as the cap on the volume of waste and the target for separation of household waste.

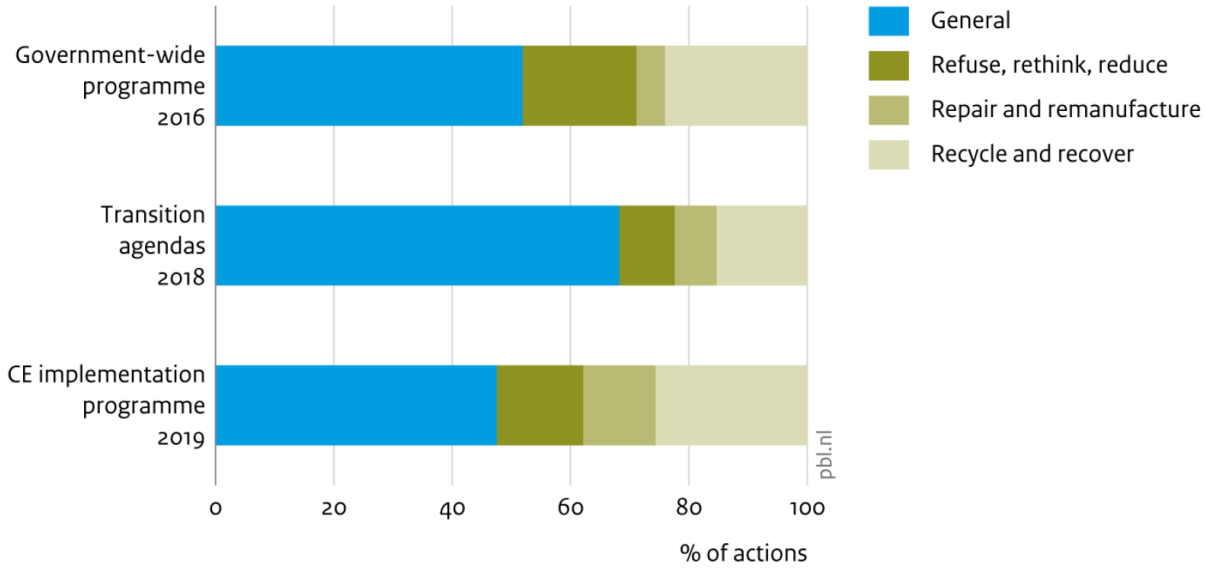
[30] Eurostat (2021) EU's circular material use rate increased in 2020. Available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211125-1
[31] Eurostat (2021) EU's circular material use rate increased in 2020. Available at: https://ec.europa.eu/eurostat/web/products-eurostat-news/-/ddn-20211125-1

Figure 10 - CE Policies in the Netherlands



The government-wide circular economy programme is still decidedly a document in which the government expresses its own ambition and presents plans for the transition towards a circular economy, but, in contrast, the Raw Materials Agreement, the transition agendas and the implementation programme prominently present a joint ambition of the parties involved . The realisation of the transition theme actions and projects in the implementation programme is therefore a joint responsibility. For the crosscutting themes in the implementation programme, the responsibility lies with the government.

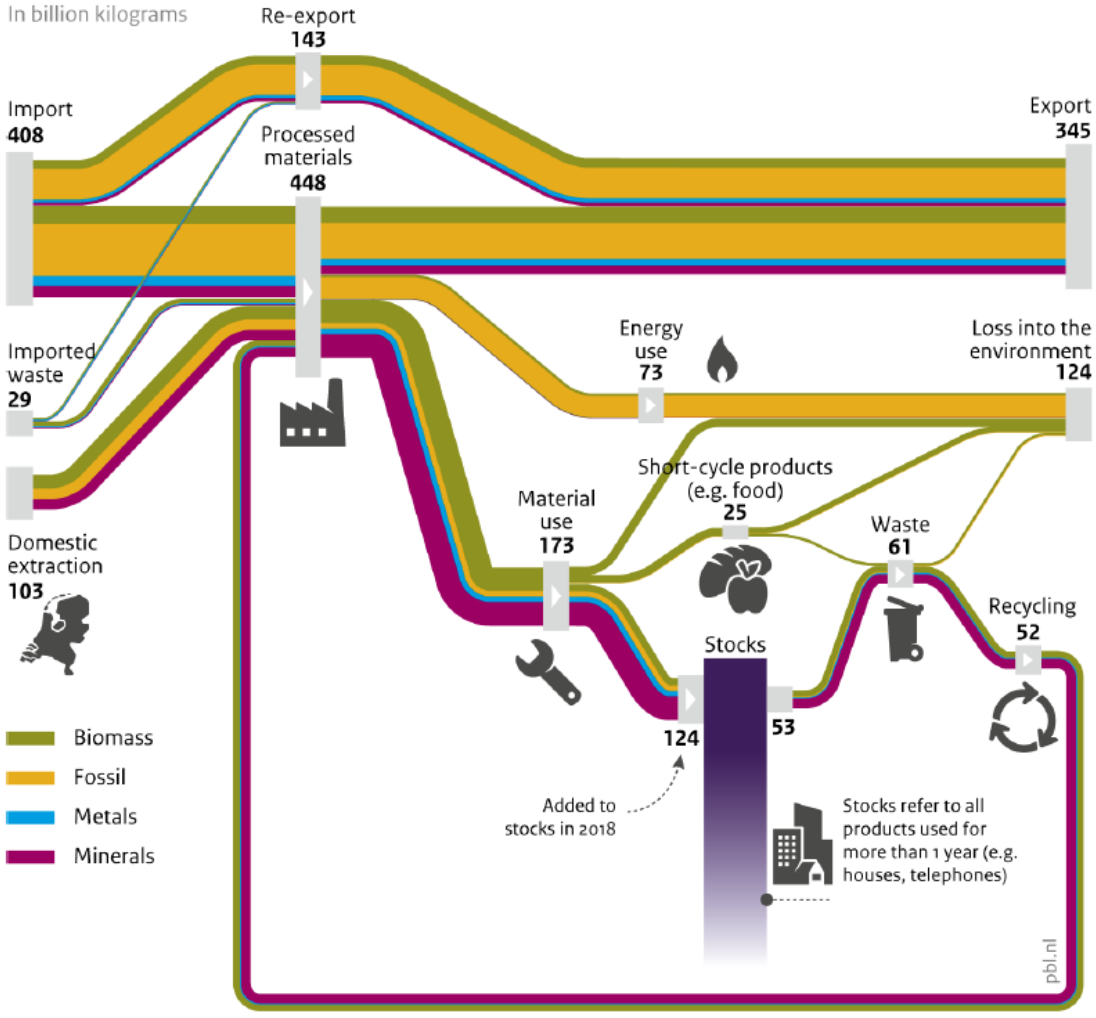
Figure 11 - Share of Actions per Dutch Circularity Strategy



According to Netherlands Environmental Assessment Agency (PBL), the Netherlands recycles 80% of its waste. This makes it one of the front runners in Europe, although it should be noted that this 80% often involves low-grade recycling. The use of raw materials for Dutch consumption is also a fifth lower than the EU average. EU circular economy policy is of great importance for the Netherlands, when it comes to taking further steps towards a circular economy. Setting requirements for the use of material resources in product design or the prevention of harmful substances in products particularly requires an EU approach. And if the European Union elaborates its plans for producer responsibility and requirements for product design and repair, this will ensure a more level playing field between Member States. The Netherlands would benefit more than average from this, because of its very open economy and ambitious waste policy of recent decades, which has recently been further developed into a circular economy policy.

In 2018, the Dutch economy used nearly 450 Mt in material resources and, in addition, over 140 Mt in transhipment (please see the figure below). These numbers include raw materials as well as parts and products. Over two thirds of these resources are imported. Almost half of all the materials used in the Netherlands are for domestic use; the other half is exported. This shows that the Dutch economy requires far more materials than are need for domestic use.

Figure 12 - Resource Flows of Dutch Economy (2018)



To encourage both the prevention of waste generation and the practice of higher-grade waste processing, the policy framework of the National Waste Management Plan (2017-2023)[32] has established concrete targets for the overall supply of waste in the Netherlands, for household waste and for waste generated by businesses, organisations and public authorities (see the table below). These targets apply to waste generated in the Netherlands (primary waste generated), excluding contaminated soil, dredging sludge, manure and radioactive waste. This category does not include imported waste, but does include Dutch waste that is exported.

Table 1: Overarching Dutch Objectives for Waste

Themes	Sub-themes	Objectives
Waste total	Waste supply (total primary waste generated)	No more than 61 Mt in 2023 and no more than 63 Mt in 2029
Waste total	Incineration and landfill	Halve between 2012 and 2022
Waste total	Preparation for reuse and recycling	At least 85% in 2023
Household waste	Waste supply	No more than 400 kg/cap/yr in 2020
Household waste	Residual waste supply	No more than 100 kg/cap/yr in 2020 and no more than 30 kg/cap/yr in 2025
Household waste	Separation	At least 75% separation in 2020
Waste from businesses, organisations and government authorities	Residual waste supply comparable to household waste	Halve between 2012 and 2022

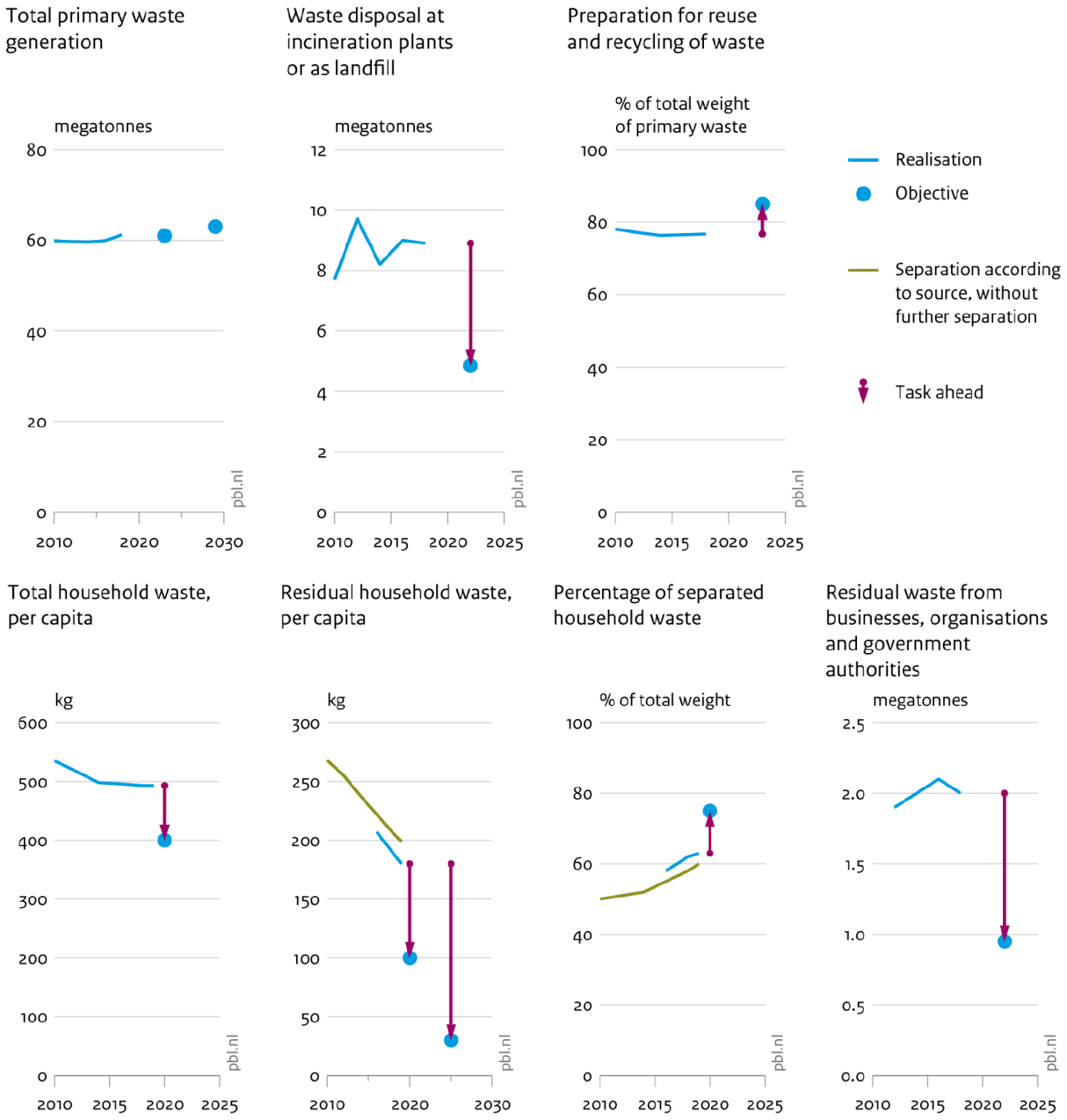
The figure below provides an overview of recent developments and the targets. Substantial policy efforts are still required to achieve most of those targets. The aim to reduce waste generated in the Netherlands in 2023 is likely to be attained. In 2018, the volume of Dutch waste was, at 61.2 megatonnes, almost within target. The target for preparation of waste for reuse and recycling might be met if policy efforts are intensified. For the past 10 years, the share of Dutch waste that is recycled has fluctuated around the same percentage; in 2018 it stood at 77%, but the target is 85%.

Expectations are that the other five targets will not be met. In the first place, the amount of Dutch waste that went to incineration plants or to landfill in 2018 totalled almost 9 Mt. While this is about 8% less than in 2012, it is still far from the target of halving the volume between 2012 and 2022. Secondly, the amount of household waste did decrease to 493 kg/capita in 2019, but the decrease rate has remained unchanged since 2014. It therefore does not seem likely that the 2020 target of 400 kg will be achieved. Thirdly, the amount of residual household waste (after separation at source and post-collection sorting) fell to 180 kg per capita in 2019. This is a substantial reduction compared to 2010 (from 268 kg to 199 kg after separation at source; data on post-collection sorting are not available for 2010), but it is still far above the 2020 target of 100 kg per capita. It is expected that this target will not be met in 2020, but that it will be met in 2024. This also implies that the tougher 2025 target of 30 kg per capita will not be achieved. In the fourth place, there is the share of household waste that is separated at the source; after years of remaining stable, it has risen steadily since 2014, but the 63% figure (after post-collection sorting) for 2019 is still far from the 2020 target of 75%.

[32] Dutch Ministry of Infrastructure and Water Management (2023) National Waste Management Plan (2017-2023). Available at: https://rwsenvironment.eu/subjects/from-waste-resources/national-activities/national-waste/

Finally, the waste from businesses, organisations and government authorities was in 2018 still double the 2022 target. Halving the amount within four years does not seem feasible.

Figure 13 - Realization towards Dutch Waste Objectives

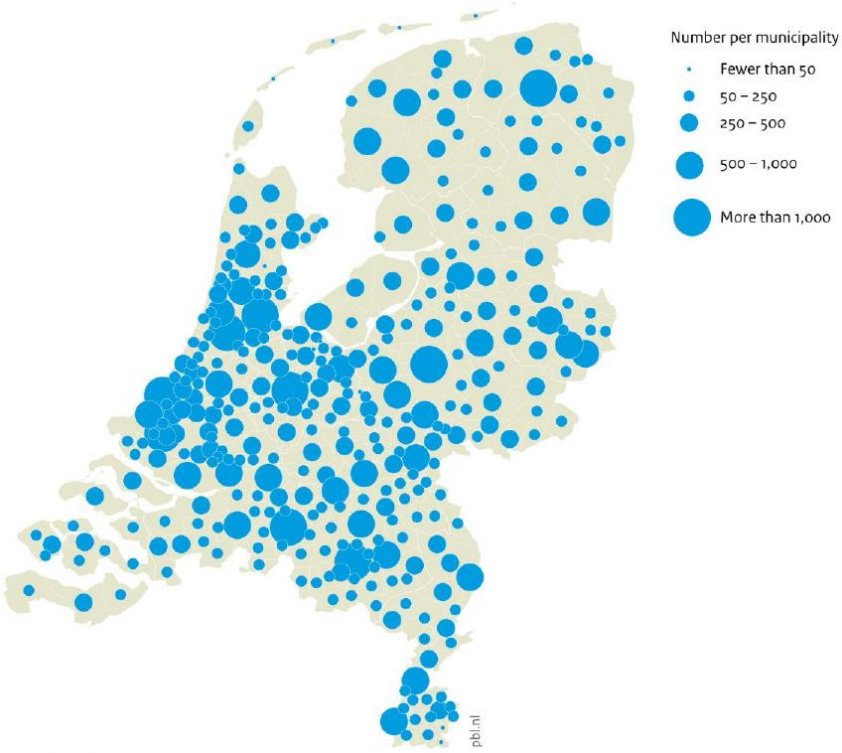


In addition to those presented in the table above, the Netherlands has targets for specific waste streams. The National Waste Management Plan, for example, has set further targets for preparation for reuse and recycling of 95% of construction and demolition waste and 85% of industrial waste by 2023. As for food — along the entire chain from farm to fork — the ambition is to halve waste by 2030 compared to 2015. Targets have also been set for various packaging materials. Many of these have already been met or are about to be met. All the packaging targets for 2017 have been reached, with the exception of those for glass. In 2020, the EC introduced new targets and measuring methods. The new targets applying to 2021 had already been achieved in 2017 with regard to the whole of packaging, and with regard to

wood, glass, and paper and cardboard packaging. The target set for 2023 for preparation for reuse and recycling of 95% of construction and demolition waste was achieved ahead of schedule, with 98% in 2016. For food waste, however, considerable efforts still need to be made. As the volume of food waste remained more or less stable between 2015 and 2018, progress towards the corresponding target is insufficient.

In 2018, there were more than 100,000 circular businesses in the Netherlands. This amounts to almost 6% of the total number of businesses for that year. A circular business is any business that applies one or several R-strategies in practice. The figure below shows their regional distribution.

Figure 14 - Circular Businesses in the Netherlands (2020)



As yet, circular business activities — such as recycling, repair and reuse — only cover a small part of the economy. In 2018, circular business activities added 4% of value to the economy, and 4% of employment is coupled to circular activities. Between 2010 and 2018, employment in circular activities increased by 5% and the added value of those activities by 23%. The changes are comparable to the Dutch economy as a whole, which saw a 7% increase in the number of jobs and a 21% increase in GDP over the same period.[33]

2.2.2. France

French roadmap for the circular economy (FREC)[34], published in April 2018, sets out the operational details of the transition to be made from a linear economic model based on a system of "take, make, dispose", to a circular model that will integrate the entire life cycle of

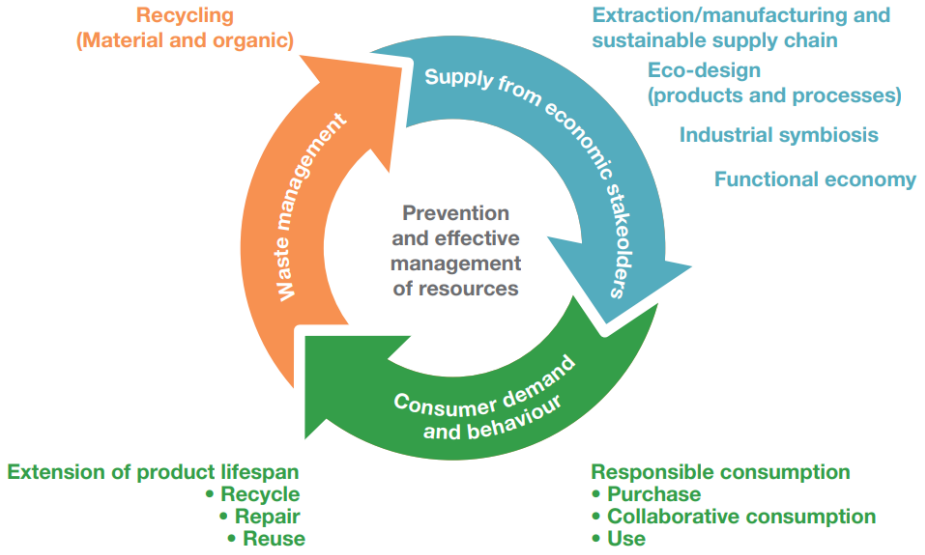
[33] PBL (2021) Integral Circular Economy Report 2021, Assessment for the Netherlands. Available at: https://www.pbl.nl/sites/default/files/downloads/pbl-2021-integral-circular-economy-report-2021-4582.pdf
[34] French Ministry of Ecological Transition (2018) French Circular Economy Roadmap. Available at: https://circulareconomy.europa.eu/platform/sites/default/files/frec_anglais.pdf

products, from their eco-design to waste management, including, of course, their consumption by limiting waste. It includes 50 measures to produce better, consume better, generate less waste and engage stakeholders (see Annex 2).

The law on the prevention of waste and the circular economy of February 10th, 2020 aims to speed up the change in the production and consumption model so as to limit waste and preserve natural resources, biodiversity and the climate. It is structured around five main areas: getting rid of disposable plastic, better informing consumers, preventing waste and promoting cooperative re-use, tackling premature obsolescence and better manufacturing.

French circular economy approach is described in terms of three policy areas and seven pillars. The indicators for monitoring the progress are intended to illustrate each of these areas and pillars.

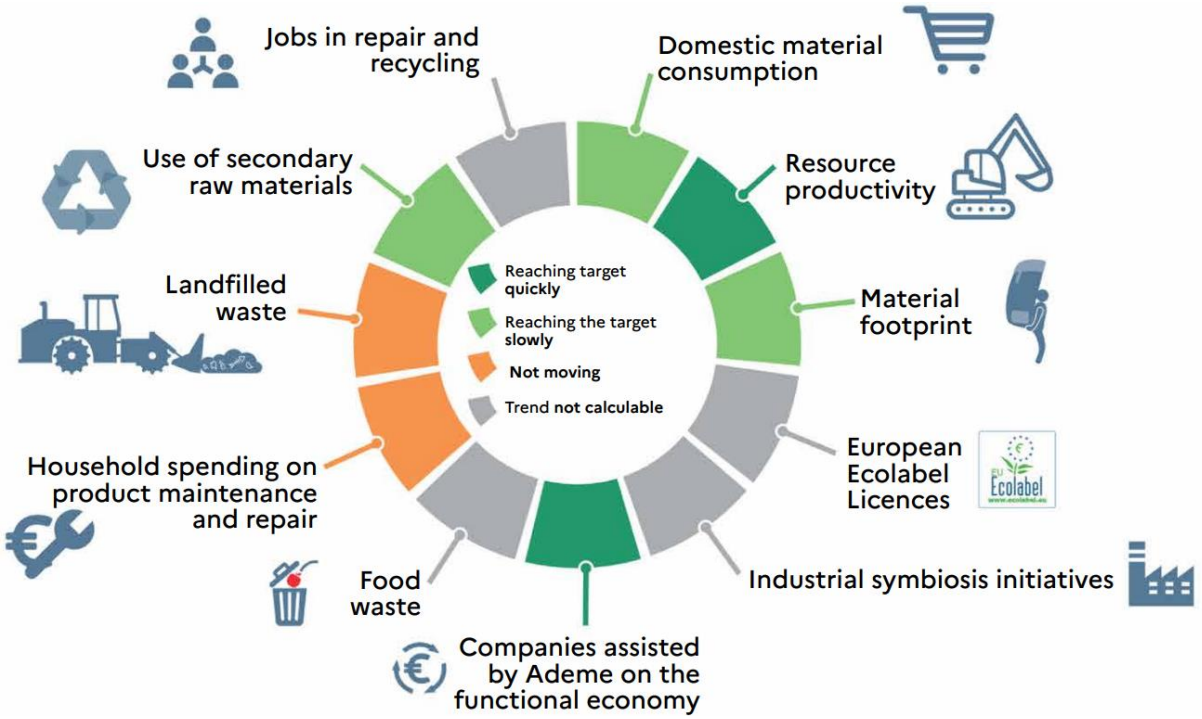
Figure 15 - Policy Areas and Pillars of French Circular Economy



In 2017, 10 key indicators covering different aspects of the circular economy were identified for monitoring the circular economy, as defined by the Law on Energy Transition for Green Growth of 2015. These indicators, which were deliberately restricted in number, were chosen because of their inclusive nature and, for the most part, their accessibility at European level. In 2021, it was decided to maintain these indicators as far as possible, to see how they developed over time.

- Six indicators focus on the upstream part of the circular economy cycle, centred on the supply side of the economy (extraction/manufacturing and sustainable supply chain, ecodesign, industrial symbiosis and the functional economy).
- Two indicators highlight consumer demand and behaviour (responsible consumption and extension of product lifespan).
- Two indicators focus on the downstream cycle, relating to waste management (recycling).
- The last indicator relates to jobs and covers two pillars: extending product lifespan and recycling.

Figure 16 - General Trends in French CE Indicators



Overall, the transition to a circular economy seems to be underway. However, certain improvements appear to be vulnerable and need to be strengthened: the indicators linked to the consumption of materials are improving over the long term, but they remain highly dependent on the economy. The international context also has a major impact, as shown by the closure of China's borders influencing the amount of waste going to landfill. Household spending on repairs (appliances and equipment) is growing slower than spending on new goods, although more frequent repairs seem to be emerging. If this proves to be the case, it will be a source of jobs, most of which cannot be relocated. The inclusion of secondary raw materials in production processes is generally increasing, but the positive developments do not apply to all materials and the circular material use rate remains low. Plastic and demolition waste are sources of materials that need to be better recovered.[35]

[35] French Ministry of Ecological Transition (2021) Key indicators for monitoring the circular economy. Available at: https://www.statistiques.developpement-durable.gouv.fr/sites/default/files/2021-08/datalab_key_indicators_circular_economy_august2021.pdf

Table 2: Trends in French Circular Economy Indicators and EU Comparison

Pillar of the circular economy	Indicator	Trends* (average annual growth rate)	Year	France figure	EU28 figure
Extraction / manufacturing and sustainable supply chain	① Domestic material consumption per capita	- 4.7% between 2010 and 2018 (- 0.6%)	2018	11.6 t/capita	13.5 t/capita
	② Resource productivity	+ 12.3% between 2010 and 2018 (+ 1.5%)	2018	€ 2.96 /kg	€ 2.30 /kg
	③ Material footprint	- 4.4% between 2010 and 2018 (- 0.56%)	2018	13.9 t/capita	14.0 t/capita
Eco-design (products and processes)	④ European ecolabel	non calculable	2019	342 licences (of which 208 tourist sites)	1,623 licences (of which 357 tourist sites)
Industrial symbiosis	⑤ Number of industrial symbiosis initiatives	non calculable	2020	152 initiatives	No EU data
Functional economy	⑥ number of companies and local authorities that have been supported by Ademe for the functional economy.	+ 161 companies between 2013 and 2018 (+ 68%)	2018	174 companies and local authorities supported since 2013	No EU data
Responsible consumption	⑦ Food waste	non calculable	2016	150 kg/year/capita	173 kg/year/capita
Extension of product lifespan	⑧ Household spending on product maintenance and repair (excluding vehicles)	+ 3% between 2010 and 2019 (+ 0.35%)	2019	€107/capita	No EU data
Recycling (material and organic)	⑨ Landfill tonnage trend	+ 1% between 2010 and 2018 (+ 0.10%)	2018	26 % of non-hazardous non-mineral waste goes to landfill (20 Mt, 300 kg/capita)	23% of non-hazard-ous non-mineral waste goes to landfill (162 Mt, 316 kg/capita)
	⑩ Use of secondary raw materials	+ 1 point increase in the circular material use rate between 2010 and 2017 (+ 0.87%)	2017	18.6% of the economy's material requirement is covered by recovered materials	11.7% of the economy's material requirement is covered by recovered materials
Extension of product lifespan and recycling	⑪ Jobs in repair and recycling	not calculable	2017	455,600 jobs 1.6 % of total employment	4 million jobs 1.7% of total employment

** Trends:*
Quickly reaching the target
Slowly reaching the target
Not moving
Trend not calculable

2.2.3. Finland

Finland aims to become a global pioneer in a world in which our economic competitiveness and well-being can no longer be based on the wasteful use of natural resources.

Finland has prepared a strategic programme to promote a circular economy. The aim is to transform the economy into one that is based on the principles of circular economy by 2035. With this programme, the Finnish Government wants to strengthen Finland's role as a leader in the circular economy. The transition into a circular economy is also a step towards

achieving the Government's carbon neutrality target by 2035. The Finnish Government adopted the resolution on promoting a circular economy on 8 April 2021.

The strategic programme to promote a circular economy sets out objectives for the use of natural resources. It sets the objectives and indicators, specify the measures to be taken and allocate the resources needed to promote the circular economy and achieve systemic change.

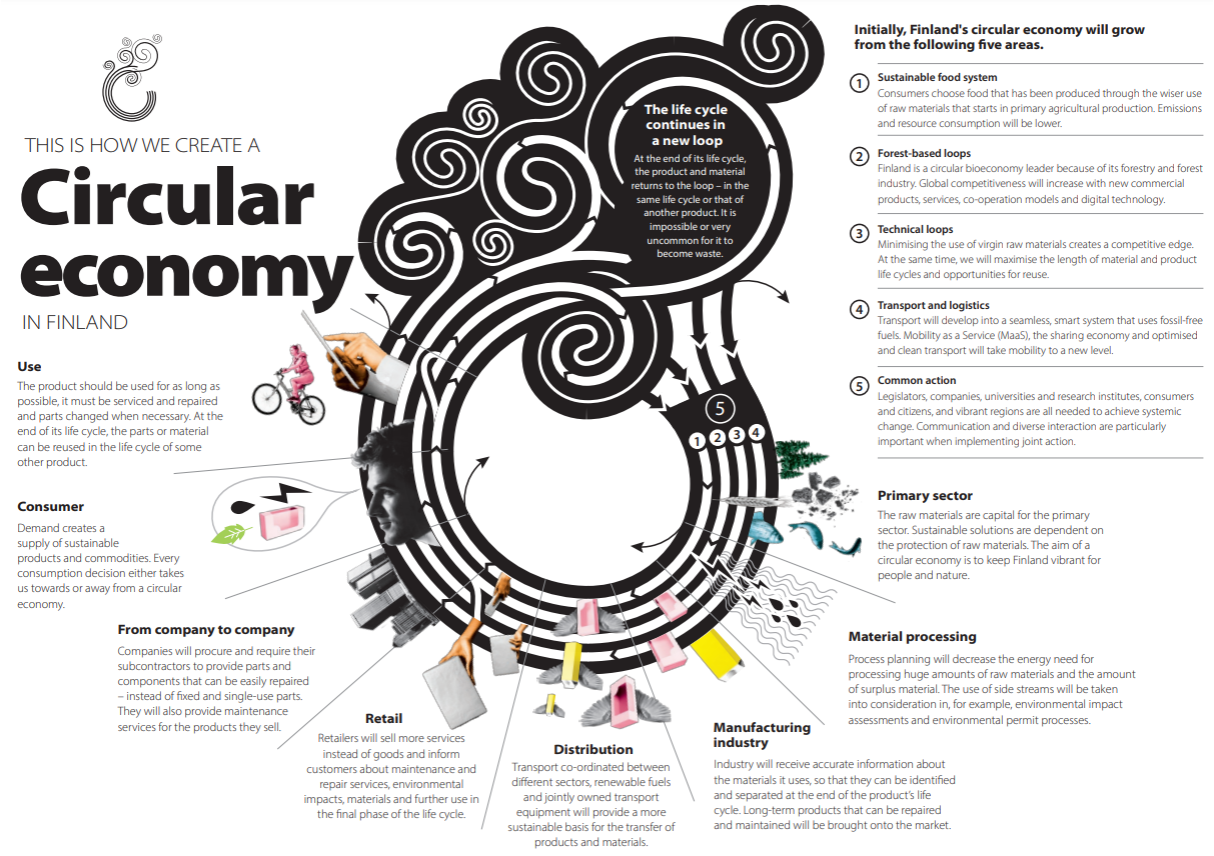
The vision of the Circular Economy Programme is "Finland in 2035: Our economic success is founded on a carbon-neutral circular economy society". Making this vision true requires sustainable and efficient use of natural resources. This will be guided by the following steps and objectives:

- The consumption of non-renewable natural resources will decrease and the sustainable use of renewable natural resources may increase to the extent that the total consumption of primary raw materials in Finland in 2035 will not exceed what it was in 2015. Natural resources used to manufacture products for export are not covered by the objective.
- The productivity of resources will double by 2035 from what it was in 2015.
- The circular material use rate (CMU) will double by 2035.[36]

Finland was the first country in the world to prepare a national road map to a circular economy in 2016, under the leadership of Finnish Innovation Fund (SITRA). Just like the first road map, the updated version (Roadmap 2.0) published in March 2019 also includes descriptions of the essential circular economy measures to which Finnish stakeholders have already committed themselves. There are measures under way in state administration, towns and cities, business life and the everyday lives of Finnish people. The road map includes almost 30 new actions (see Annex 3). In addition, the road map presents measures that still require implementing but which do not yet fall under the responsibility of any particular organisation.

[36] Finnish Ministry of Environment (2022) Strategic programme to promote a circular economy. Available at: https://ym.fi/en/strategic-programme-to-promote-a-circular-economy

Figure 17 - Finnish Road Map to a Circular Economy 2016-2025[37]



The roadmap to a circular economy is the result of efforts made across the entire country. It compiles the key operators' views on the essential changes and actions required for the transition to a circular economy. Sitra is responsible for the creation of the road map and the compilation of its results.

The roadmap includes the most effective circular economy measures and solutions that Finland proposes in order to tackle the challenges of climate change, the depletion of natural resources and urbanisation. The Road map 2.0 which was revised in 2019,[38] updates the solutions and hones the vision and strategic objectives;

1. Renewal of the foundations of our competitiveness and vitality, putting the focus of circular economy solutions on competitiveness and an economic growth strategy.

2. Making a shift to low-carbon energy; in addition, we need to promote the efficient use of energy and set more ambitious goals in our climate and energy policies.

3. Natural resources are regarded as scarcities, because to reach the climate targets of the Paris Agreement consumption and production in Finland can no longer be based on the limitless use of natural resources.

[37] SITRA (2016) Finnish Road Map to a Circular Economy 2016-2025. Available at: https://www.sitra.fi/app/uploads/2017/02/Selvityksia121.pdf
[38] SITRA (2019) Finland 2016-2025 Circular Economy Roadmap 2.0. Available at: https://www.sitra.fi/app/uploads/2019/03/kiertotalouden-tiekartta-tiivistelma-en2.pdf

4. Everyday decisions act as catalysts for change. Cutting our carbon footprint in half by 2030 requires the adoption of a new kind of approach to ownership, in terms of culture, taxation and income distribution.

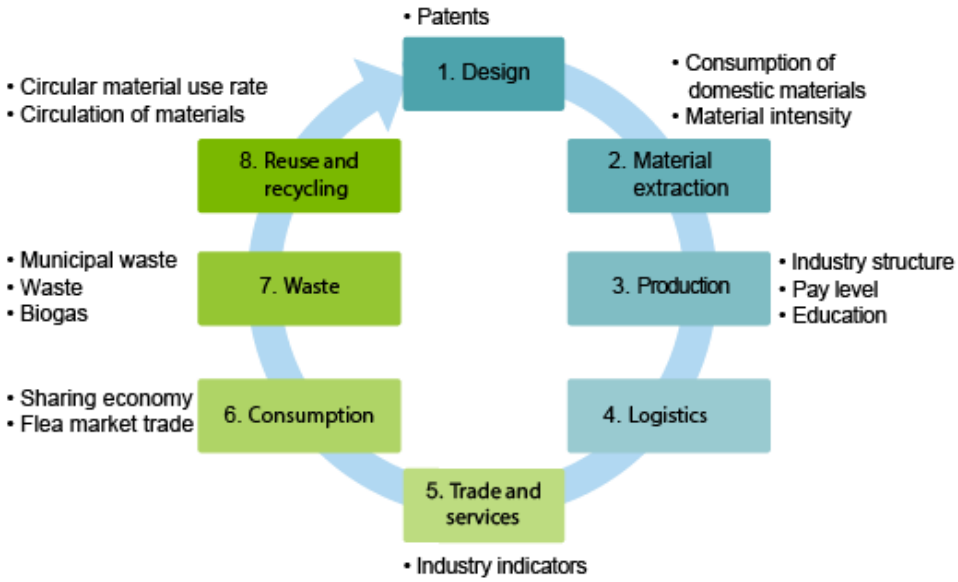
Good progress has been made in the implementation of the road map's measures, and it is regarded as a good way to formulate the actions required to become a pioneer.[39]

The indicators were selected to support the monitoring of the government's strategic programme and are regularly being updated. The set of indicators consists of eight activities including a total of 15 indicators. The division into activities has been made to help perception, and it should be noted that it is primarily a theoretical frame of reference that allows the specification of indicators. The division into activities is not meant to lead to strict boundaries between different indicators.

Existing data have been utilised in producing the indicators, which enables time series to extend backwards in time as well. In most of the indicators the time series covers the years 2013 to 2018, in some also more years than that. The existing long time series also allow for a limited retrospective examination of even new phenomena (such as the circular economy).

Some of the indicators have also been produced regionally, for example on the number of circular economy establishments, turnover and personnel. Some examples among those indicators are presented below.

Figure 18 - Finnish Circular Economy Indicators

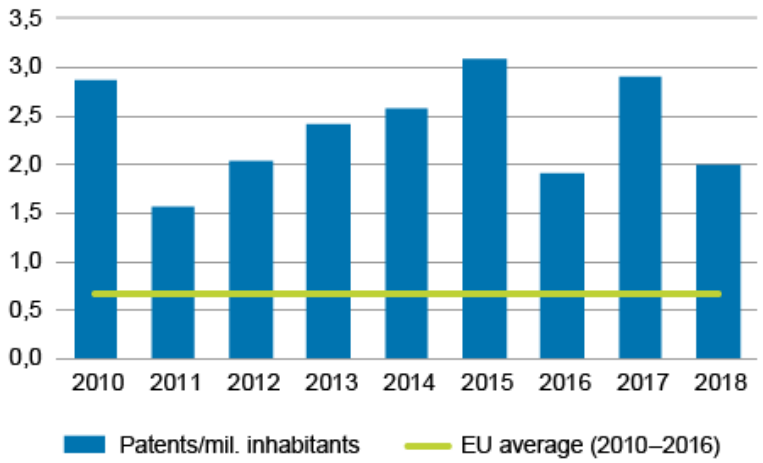


Patents related to the circular economy: The indicator includes registered patents that can be classified as circular economy patents per one million population.

[39] SITRA (2022) Finnish road map to a circular economy 2016-2025. Available at: https://www.sitra.fi/en/projects/leading-the-cycle-finnish-road-map-to-a-circular-economy-2016-2025/#what-is-it-about

As enterprises switch to a circular economy, they should also adopt new operating modes and produce innovations. The number of patents has varied much between 2010 and 2018. However, more patents related to the circular economy have been registered in Finland every year than the European average. The EU reference value has been calculated as an average for 2010 to 2016 when Eurostat has compiled statistics on patents. The EU average has remained almost unchanged in these years.

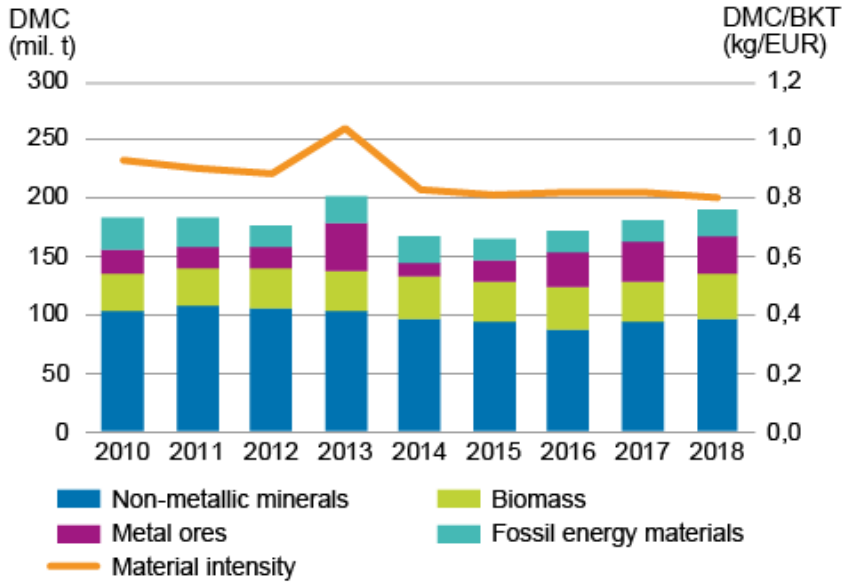
Figure 19 - Patents Related to the Circular Economy in Finland



Consumption of domestic materials and material intensity: The consumption of domestic materials includes materials taken into use from Finnish nature, to which the weight of imported goods is added and from which the weight of exports is subtracted. The material intensity is obtained as a ratio of domestic consumption of materials to GDP.

The use of natural resources is the use of domestic direct inputs, including materials taken from nature for further processing. When the weight of imported goods is added to direct inputs and export goods are correspondingly subtracted, the indicator domestic material consumption, or DMC, is obtained. Domestic material consumption is measured in tonnes and can be divided into four material groups: non-metallic minerals, metal ores, biomass and fossil energy materials in Finland.

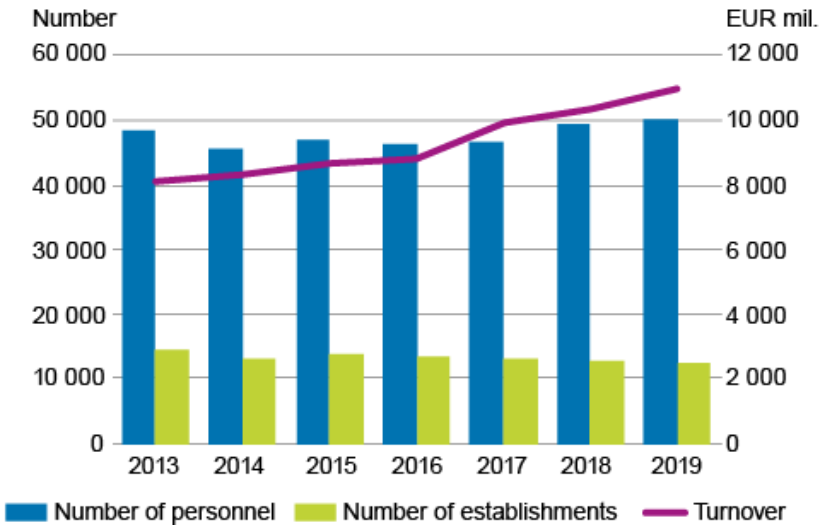
Figure 20 - Domestic Material Consumption by Material and Material Intensity in Finland



Between 2010 and 2018, domestic material consumption has varied from around 170 to 200 Mt. In the latest examined years, the figure has been growing slightly. On the other hand, GDP has also grown at the same time, leading to a decrease in material intensity, that is, materials have been used less relative to the volume of production. Material intensity has been falling in Finland for a long time, although in 2013, exceptionally active mining of metal ores made it rise momentarily.

Number, turnover and personnel of circular economy establishments: The indicator includes the number, turnover and personnel of establishments in industries classified as circular economy industries.

Figure 21 - Number, Turnover and Personnel of Circular Economy Establishments in Finland

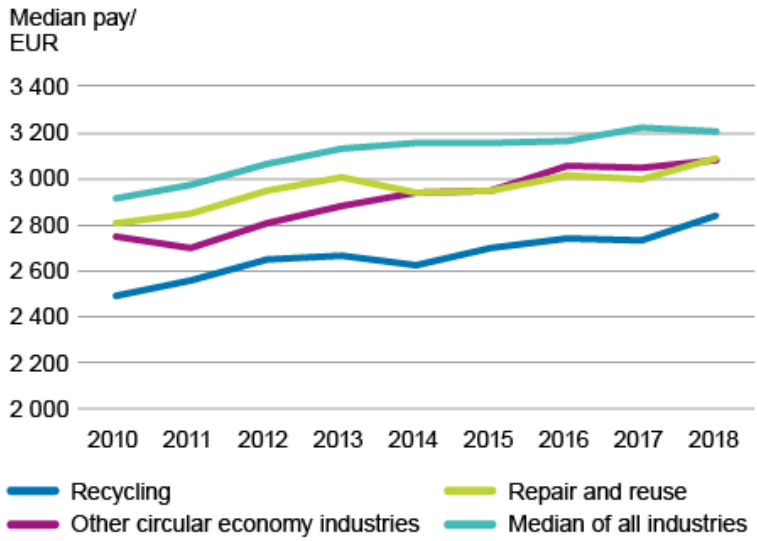


The turnover of circular economy industries has grown steadily in 2013 to 2019. The number of personnel has also grown slightly. By contrast, the number of establishments has fallen somewhat. The indicator data have been compiled from data on establishments of enterprises. The indicator includes all establishments reported to operate in the industries concerned.

Thus, the indicator also covers enterprises where only part of the activity belongs to the circular economy.

Pay level in circular economy industries: The pay level in circular economy industries can be measured by comparing median pay in circular economy industries to the median of pay in the whole economy.

Figure 22 - Median Pay of Circular Economy Industries and All Industries in Finland

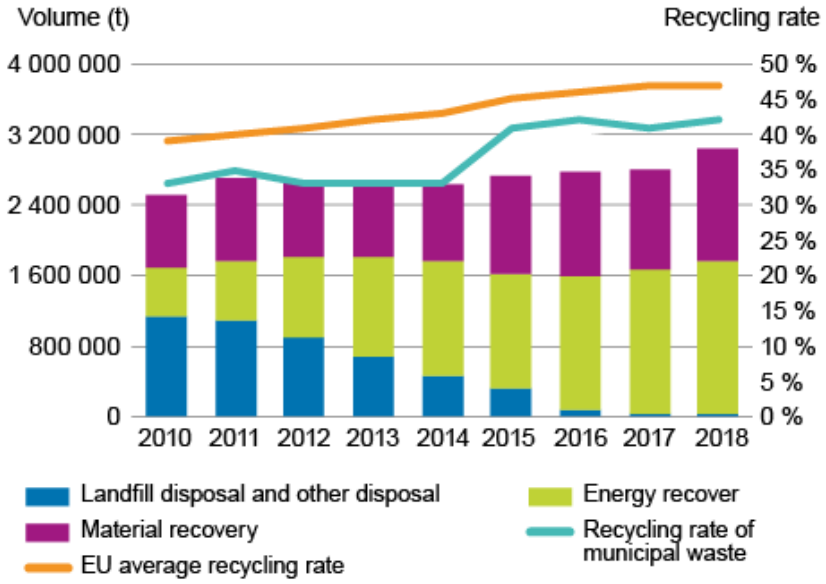


In circular economy industries, the pay development has largely followed the general pay development in 2010 to 2018. The pay medians of the circular economy are below the general pay level. In industries related to recycling, the median pay is lower than in others. The 2018 data show signs of growth in the pay medians of circular economy industries, while the growth of the general pay median halted.

Recovery of municipal waste: Municipal waste refers to waste generated in housing as well as similar waste from trade and services and corresponding waste from manufacturing support activities. In addition to the amount of municipal waste, its material and energy recovery of the municipal waste have been selected for the indicator.

If the product can no longer be repaired or reused, the next best option from the circular economy perspective is recycling as material, that is, recycled materials are made of the product's materials and at the same time the need for virgin raw materials decreases. If recycling is not possible, energy recovery is a better alternative than landfilling. This method should be seen as a substitute for landfill sites, not material recovery..

Figure 23 - Amount of Municipal Waste Divided by Recovery Methods and Recycling Rate of Municipal Waste and EU Average in Finland

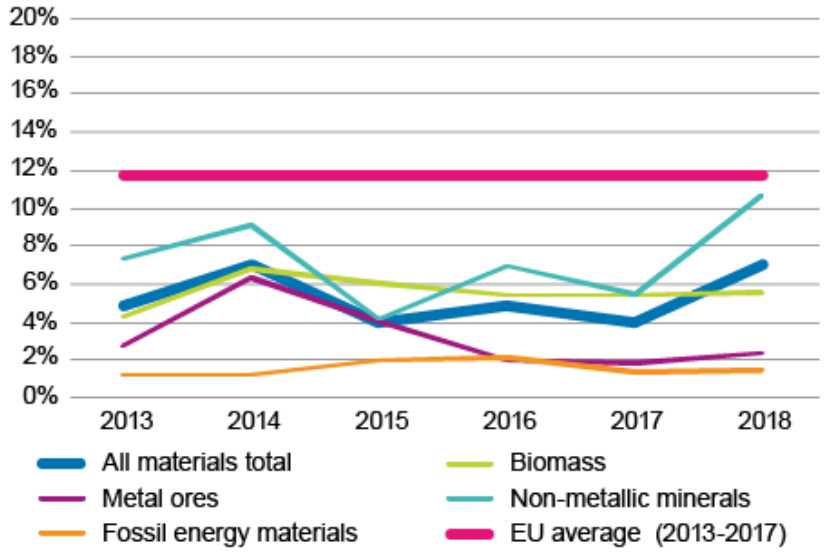


The amount of municipal waste has grown during the reference period. Material recovery of municipal waste has grown somewhat during the reference period, but energy recovery has increased significantly, to around 57% of all municipal waste. This is partly due to the landfill prohibition of organic waste that came into force in 2016, which has channelled waste to energy recovery.

The indicator on the recycling rate of municipal waste describes the share of material recovery of total waste. The recycling rate has also grown during the reference period. Finland's recycling rate is slightly below the EU average.

Circular material use rate: The circular material use rate (CMU) measures the ratio of the circular use of materials to the overall material use by feedback to the system. The calculation also includes imported and exported waste materials for recycling.

Figure 24 - Circular material use rate by material and in total in Finland and EU



The higher the circular material use rate, the more recycled materials have been able to replace the need for virgin raw materials and the smaller the burden on the environment. Reducing the use of virgin raw materials is a key element of the circular economy.

The indicator was compiled as a time series for 2013 to 2018 and additionally divided into materials according to domestic materials consumption: biomass, metal ores, non-metallic minerals and fossil energy materials. The circular material use rate in Finland was around 7% in 2018; the figure grew slightly from the previous years. Examined by material, the circular material use rate is highest for non-metallic minerals.

The Finnish circular material use rate is lower than the EU average. However, the economic structure of different countries has a significant effect on comparability - Finland has a high DMC compared to other EU countries due to the large volume of mining and quarrying.[40]

[40] Statistics Finland (2022) Indicators for the circular economy. Available at: https://www.stat.fi/tup/kiertotalous/kiertotalousliiketoiminnan-indikaattorit_en.html

3. NATIONAL PROGRESS TOWARDS EU CIRCULAR ECONOMY ACTION PLAN AND RELATED POLICIES

3.1. Corresponding Turkish Strategic Framework

3.1.1. National Context in relation to the EU CEAP

This part looks into the applicable national strategies, policies and action plans of relevance for (or corresponding to) the existing CE Strategic/Action framework. This analytical stage reveals the planned actions or targets already embedded in the national policy agenda which can lead to the CE objectives.

Actions of the recent Circular Economy Action Plan were taken as the basis of assessing the corresponding Turkish context. For each action, first the EU context and the current status were summarized and then the Turkish context was assessed. The progress of the actions of the first EU Circular Economy Action Plan 2015 in the EU and the Turkish context are also presented in Annex-1.

As can be seen from the table below, this assessment mainly includes the relevant legislation in Türkiye and governmental projects aiming at the related EU harmonization process. As a part of this assessment Türkiye's Green Deal Action Plan (Part 2-A Green and Circular Economy) was also reviewed and related actions were added to the Turkish context, if any.

Table 3: Turkish Context in relation to 2020 EU CEAP

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
A SUSTAINABLE PRODUCT POLICY FRAMEWORK		
Legislative proposal for a sustainable product policy initiative Calendar: 2021	Context: - A revision of the Eco-design Directive widening its scope beyond energy-related products - Propose additional legislative measures as appropriate. - Address the presence of harmful chemicals in products, such as electronics & ICT equipment; textiles; furniture; steel, cement and chemicals.[42] Status: - A proposal for a Regulation on Eco-design for Sustainable Products was published on 30 March 2022. The proposal extends the scope of the Eco-design framework to cover the broadest possible range of products. It foresees setting minimum criteria not only for energy efficiency but also for circularity. The framework will allow for setting a wide range of requirements, including: - Product durability, reusability, upgradability and reparability - Presence of substances that inhibit circularity - Energy and resource efficiency - Recycled content - Remanufacturing and recycling - Carbon and environmental footprints - Information requirements, including a Digital Product Passport[43]	- The Regulation on the Eco-design Requirements for Energy-Related Products, published by the Ministry of Industry and Technology, initially came into force in 7.10.2010. The aforementioned Regulation was revised recently and the "Regulation on the Environmentally Friendly Design of Energy-Related Products" published in the Official Gazette dated 05.02.2022 and numbered 31741 was put into effect with the Presidential Decision. This Regulation has been prepared within the framework of harmonization with EU legislation on the basis of the "European Parliament and Council Directive No. 2009/125/EC dated 21/10/2009 on establishing a framework for the setting of ecodesign requirements for energy-related products". In line with the current EU Eco-design Directive, its scope is limited with the energy-related products. Currently, implementing measures (in total 31 communiques), prepared by the Ministry of Industry and Technology, are available for 24 different groups of products/parts. These include, electrical goods such as lamps, various types of white goods, televisions, computers and servers, room air conditioning appliances, electric motors, external power supplies, etc.[44] - In line with the Procedures and Principles Regarding the Establishment and Operation of Waste Retrieval Centers and Zero Waste Practices dated 31.12.2021 and numbered 2595501, published by the Ministry of Environment, Urbanization and Climate Change, priority is given to the repair and reuse of unused products or components, if appropriate, and waste generation is

[41] https://ec.europa.eu/environment/strategy/circular-economy-action-plan_en
[42] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-sustainable-products-initiative
[43] https://ec.europa.eu/environment/publications/communication-making-sustainable-products-norm_en
[44] https://www.sanayi.gov.tr/mevzuat/teblig

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
		reduced by extending product life. - The Regulation on the Sale of Refurbished Products No. 31221 published by the Ministry of Trade on 22.08.2020 regulates the activities related to the renewal, certification and resale of used mobile phones and tablets. Second-hand mobile phones and tablets can be renewed by authorized renewal centers in accordance with the regulations determined by the Ministry of Trade or the standards determined by the Turkish Standards Institute. Refurbished products can be resold as refurbished products after they are certified and packaged.[45] In addition, the Regulation Amending the Regulation on the Sale of Refurbished Products was published in the Official Gazette dated 18.04.2023 and numbered 32167. With the regulation refurbished products included are the smart watches, computers (laptop, desktop), game consoles and modems.[46] According to the Environmental Law No. 2872, procedures and principles regarding the identification, production, import, usage areas and quantities in the process until they reach the waste level, labeling, packaging, classification, storage, risk assessment, transportation and export of hazardous chemicals are determined by a regulation to be issued by the MoEUCC by taking the opinions of the relevant institutions and organizations. Hazardous chemicals and goods containing these chemicals, which are determined to be placed on the market in violation of the legislation on dangerous chemicals are recalled and destroyed by institutions, organizations and businesses that put them on the market for sale and use. In addition, the Ministry of Trade may prohibit or control the import of certain fuels, substances, wastes, hazardous chemicals and goods containing these chemicals, by taking the opinion of the MoEUCC. - Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (23.06.2017), published by the Ministry of Environment, Urbanization and Climate Change, is in force in Türkiye.

[45] https://www.resmigazete.gov.tr/eskiler/2020/08/20200822-6.htm
[46] https://www.resmigazete.gov.tr/eskiler/2023/04/20230418-4.htm

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		- According to the Regulation on the Management of Waste Electrical and Electronic Equipment (WEEE) dated 26.12.2022 and numbered 32055, published by the Ministry of Environment, Urbanization and Climate Change; In the design and production of EEEs and their components, priority should be given to taking the necessary measures for the implementation of eco-design requirements, which can be used for a long time without becoming waste by extending the useful life of the products, allowing for repair and reuse, and facilitating their reuse, recycling or recovery after they are waste. In order to reduce the use of natural resources and raw materials and increase recycling, priority should be given to the use of recycled materials, especially in new design products, if technically appropriate. Collection, reuse, recycling and recovery targets have been determined in the WEEE Regulation, and it will be ensured that the "country target" is achieved together with all parties responsible for the management of WEEE in this Regulation. Again, in the WEEE Regulation, there are regulations for the facilities that will carry out the preparation for re-use activities, where the WEEE that has become waste is transformed into the designed state through cleaning, repair or control processes. Waste WEEEs (except for industrial monitoring and control instruments, medical device/active implantable medical devices/in vitro diagnostic device), renewable and renewed products in accordance with the standards set in TS EN 50614 standards, reusable electrical and electronic equipment (YKEEE) may be resold. - In the Annex-2 of the "Regulation on the Restriction of the Use of Certain Harmful Substances in Electrical and Electronic Equipment" dated 26.12.2022 and numbered 32055, published by the Ministry of Environment, Urbanization and Climate Change, maximum permissible concentration values by weight in homogeneous materials related to the use of Lead (Pb), Mercury (Hg), Cadmium (Cd), Chrome (Cr+6), Polybrominated Biphenyls (PBB) and Polybrominated Diphenyl Ethers (PBDE) have been included, and amendments have been made for the transition times

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		for the restriction of phthalates (DEHP, BBP, DBP and DIBP). Annex-3 of the aforementioned Regulation includes the "scope and dates of implementation" of the Applications Exempt from the Restriction, and Annex-4 includes the Applications Exempted from the Restriction Specific to Medical Devices and Monitoring and Control Devices. - Market surveillance and inspection of EEEs will be carried out in accordance with the provisions of the Framework Regulation on Market Surveillance and Inspection of Products, which was put into effect with the President's Decision dated 9/7/2021 and numbered 4269. It is also stipulated by which Ministries the market surveillance and inspection of EEEs within the scope of this Regulation will be carried out. The Regulation on the Control of End-of-Life Vehicles, the Control of Waste Batteries and Accumulators, and the Regulation on the Control of Packaging Waste, prepared by the Ministry of Environment, Urbanization and Climate Change and on the basis of Extended Producer Responsibility Principles, also introduce restrictions and/or prohibitions for certain chemicals in the relevant product groups. - Regarding the use of recycled content, the Environmental Law on 24.12.2020 states that “It is essential to use wastes to reduce the use of natural resources and raw materials and to increase recycling. A provision regarding “the use of waste or recycled materials obtained from wastes and the principles regarding compulsory use shall be determined by the regulation issued by the Ministry (MoEUCC)” has been added.

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		Related Planned Actions/ Türkiye's Green Deal Action Plan:[47] 2.1.2. Within the scope of the preparation of the National Circular Economy Action Plan, "Determining the technical criteria for the use of recycled secondary products and materials" (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.5.1. Harmonization of the new legislative framework of the EU Sustainable Product Initiative (Responsible Institution/Coordinator: Ministry of Trade) 2.5.2. Conducting sector-based informative activities subsequent to the announcement of the Sustainable Product Initiative and EU legislative framework (Responsible Institution/Coordinator: Ministry of Trade) 2.6.1. Tracking the revisions in the EU chemicals legislation and completing the process of harmonizing to EU legislation (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Legislative proposal empowering consumers in the green transition Calendar: 2020	Context: - Proposing a revision of EU consumer law to ensure that consumers receive trustworthy and relevant information on products at the point of sale, including on products' lifespan, the availability of repair services, spare parts and repair manuals; - Working on establishing a new 'right to repair' and considering new horizontal rights for consumers, such as availability of spare parts or access to repair and, in the case of ICT and electronics, to upgrading services; - Exploring possible further strengthening of consumer protection against green washing and premature obsolescence, and setting minimum requirements for sustainability labels, logos and	- According to the Turkish Consumer Protection Law (6502-28/11/2013), goods need to be released to the market with manuals including instructions on use, installation, maintenance and simple repair. If there are any risks to health and environment, relevant information and warnings should be provided. Producers/ importers are required to issue a guarantee certificate for certain goods. Guarantee period needs to be at least two years. In addition to the legal guarantee sellers, producers or importers can provide voluntary guarantees regarding product change, repair, maintenance, etc. Producers/ importers are required to provide after-sale services for maintenance and repair during the lifespan of the goods. Consumer Protection Law includes articles on consumer awareness raising and advertisements as well. According to the Law, regarding

[47] https://ticaret.gov.tr/haberler/yesil-mutabakat-eylem-plani-yayimlandi

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	information tools; - Exploring possible changes to guarantees in the context of the review of the 2019 Sale of Goods Directive; - Assessing how to bring the legal guarantee more into line with the estimated lifetime of a product. - Including more systematically durability, recyclability and recycled content in the EU Eco-label criteria and exploring the possibility to integrate the Product and Organisation Environmental Footprint methods in the EU Ecolabel. - Improving information for consumers on the durability and reparability of products, including through possible voluntary labelling; - Introducing a digital product passport, as well as for the development of a uniform repair score and the usage meters for certain product categories. [48] <u>Status:</u> - The Commission adopted its proposal for a directive on Empowering Consumers for the Green Transition on 30th March 2022. This includes most of the items listed above and emphasises: - Providing information on producer's commercial guarantee of durability for all types of goods, or the absence of such guarantee in case of energy-using goods. - Providing information on the availability of free software updates for all goods with digital elements, digital content and digital services. - Providing information on the reparability of products, through a reparability score or other relevant repair information, where available, for all types of goods. - A ban of certain practices related to the early obsolescence of goods.[49]	the consumer awareness raising, Ministry of National Education is required to make the necessary additions on the syllabus of the education institutions. The law bans fallacious and misleading advertisements and advertisers are responsible for proving that the claims made in the advertisements are correct. - According to the Environmental Law, a voluntary environmental label system is established In line with sustainable environmental goals, in all processes of the life cycle of products or services, starting from the use of natural resources and raw material supply, in order to prevent damage to species and habitats and deterioration of ecosystems, and to reduce negative effects on the environment, people, health, climate and natural life. The procedures and principles regarding the establishment and implementation of the environmental labelling system are determined by the MoEUCC. No activity can be carried out under the name of environmental label, except for the MoEUCC. - The Regulation on Environmental Labelling (19.10.2018), published by the Ministry of Environment, Urbanization and Climate Change, aims to promote the use of products and services with reduced environmental impact as well as increase the share of such domestic products in foreign markets where such labelling mechanisms are already in place. It is aimed to implement the EU-compliant standards for environmental labelling within the Turkish industry as part of the overall EU integration process. This regulation was developed to be in line with the Regulation (EC) No 66/2010 of the European Parliament and of the Council of 25 November 2009 on the EU Ecolabel. Environmental labelling system is voluntary for companies. Environmental labelling informs consumers on the environmental impacts (energy consumption, water consumption, waste generation, carbon emissions, hazardous chemicals use) of the products and indicates that the products do not contain hazardous materials. Environmental labelling criteria are identified by the Environmental Labelling Committee. Currently

[48] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-consumers-in-the-green-transition
[49] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2098

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		labelling criteria are available for ceramic coating, textile, tissue paper, laundry detergent, hand dishwashing detergent, personal care and cosmetics and glass products as well as touristic accommodation services. So far 9 companies became environmental label users for products from textile, ceramic coating and hand dishwashing detergent groups.[50] - "Guide on Advertisements Containing Statements Regarding the Environment" prepared based on the Consumer Protection Law No. 6502 and the Regulation on Commercial Advertising and Unfair Commercial Practices, published by the Ministry of Trade, was accepted as the principle decision numbered 2022/2 at the meeting of the Advertisement Board dated 13.12.2022 and numbered 328. The purpose of the guide is to guide all persons, institutions and organizations related to advertising in the compliance of environmental declarations and visuals included in commercial advertisements and commercial applications by advertisers, advertising agencies, media organizations with the relevant legislation.[51]
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.1.4. Dissemination of Türkiye Environmental Labelling System (prepare new criteria and application guide) (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Strategy and Action Plan to be developed within the scope of Technical Assistance Project for Evaluation of Türkiye's Potential for Transition to Circular Economy

[50] https://cevreetiketi.csb.gov.tr/
[51] https://tuketici.ticaret.gov.tr/data/63ada5bc13b876a1c8715f73/2023%C3%87evreye%20C4%B0li%C5%9Fkin%20Beyanlar%20C4%B0%C3%A7eren%20Reklaml.pdf

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Legislative and non-legislative measures establishing a new "right to repair" Calendar: 2021	<u>Context:</u> - Putting forward a legislative proposal on the right to repair - Entailing targeted amendments to the Sale of Goods Directive and a new right to repair, either within the directive or in a separate instrument - (Currently, the Sale of Goods Directive provides for products to be repaired during the two-year legal guarantee period if they turn out to be faulty, but does not, for instance, require manufacturers or sellers to repair products once the legal guarantee has expired or if the products break down for reasons not covered by the guarantee (e.g. due to improper use))[52] <u>Status:</u> - The proposal adopted by the Commission on 30th March 2022 underlines that sellers must provide relevant information on repairs, such as the reparability score (where applicable), or availability of spare parts, a repair manual, etc. - Legislative proposal is expected in the third quarter of 2022[53]	- According to the Consumer Protection Law, consumer has the right to claim free repairs if only the purchased product is faulty. It is not mandatory for other cases. Similar to the EU Sale of Goods Directive, free repairing is provided during the guarantee period. For the rest of the lifespan, maintenance and repair services are required to be provided as a part of the after-sale services. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparation of the National Sustainable Consumption and Production Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change and Ministry of Trade) National Circular Economy Strategy and Action Plan to be developed within the scope of Technical Assistance Project for Evaluation of Türkiye's Potential for Transition to Circular Economy
Legislative proposal on substantiating green claims Calendar: 2020	<u>Context:</u> - Requiring companies to substantiate environmental claims about their products with a standard methodology to assess their impact on the environment. (This would provide consumers and other buyers with reliable, comparable and verifiable information on environmental impacts of products.) - Presenting a legislative proposal to require environmental claims to be substantiated by using the EU Product and Organisation Environmental Footprint (PEF and PEO) methods, developed by the Commission's Joint Research Centre[54]	- According to the Environmental Law, a voluntary environmental label system is established in line with the sustainable environmental objectives of products or services, to prevent the damage of species and habitats and the deterioration of ecosystems in all processes of the life cycle, starting from the use of natural resources and the supply of raw materials, and to reduce the negative effects on the environment, people, health, climate and natural life. . The procedures and principles regarding the establishment and implementation of the environmental label system are determined by the MoEUCC. No activity can be carried out under the name of environmental label, except for the MoEUCC.

[52] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-right-to-repair
[53] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2098
[54] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-substantiating-green-claims

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	Status: - On 20 July 2020, the Commission published an inception impact assessment for a legislative proposal on substantiating green claims - The Commission adopted its proposal for a directive on Empowering Consumers for the Green Transition on 30th March 2022. This includes most of the items listed above and emphasises: - Ensuring that traders do not mislead consumers about environmental and social impacts, durability and reparability of products. - Ensuring that a trader can make an environmental claim related to future environmental performance only when this involves clear commitments. - Ensuring that a trader cannot advertise benefits for consumers that are considered as a common practice in the relevant market. - Ensuring that a trader can only compare products, including through a sustainability information tool, if they provide information about the method of the comparison, the products and suppliers covered, and the measures to keep information up to date. - A ban on displaying a sustainability label which is not based on a certification scheme or not established by public authorities. - A ban of generic environmental claims used in marketing towards consumers, where the excellent environmental performance of the product or trader cannot be demonstrated in accordance with Regulation (EC) 66/2010 (EU Ecolabel), officially recognised eco-labelling schemes in the Member States, or other applicable Union laws, as relevant to the claim. - A ban on making an environmental claim about the entire product, when it actually concerns only a certain aspect of the product.[55]	- The Regulation on Environmental Labelling, published by the Ministry of Environment, Urbanization and Climate Change, is in effect. It is in line with the standard TS EN ISO 14024 Environmental labels and declarations -Type I environmental labelling principles and procedures - Consumer Protection Law, bans fallacious and misleading advertisements and advertisers are responsible for proving that the claims made in the advertisements are correct. - "Guide on Advertisements Containing Statements Regarding the Environment" prepared based on the Consumer Protection Law No. 6502 and the Regulation on Commercial Advertising and Unfair Commercial Practices, published by the Ministry of Trade, was accepted as the principle decision numbered 2022/2 at the meeting of the Advertisement Board dated 13.12.2022 and numbered 328. The purpose of the guide is to guide all persons, institutions and organizations related to advertising in the compliance of environmental declarations and visuals included in commercial advertisements and commercial applications by advertisers, advertising agencies, media organizations with the relevant legislation.[56] **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparation of the National Sustainable Consumption and Production Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)

[55] https://ec.europa.eu/commission/presscorner/detail/en/ip_22_2098

[56] https://tuketici.ticaret.gov.tr/data/63ada5bc13b876a1c8715f73/2023%C3%87evreye%20%C4%B0li%C5%9Fkin%20Beyanlar%20%C4%B0%C3%A7eren%20Reklaml.pdf

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Mandatory Green Public Procurement (GPP) criteria and targets in sectoral legislation and phasing-in mandatory reporting on GPP Calendar: As of 2021	Context: - Support capacity building with guidance, training and dissemination of good practices and encouraging public buyers to take part in a "Public Buyers for Climate and Environment" initiative, which will facilitate exchanges among buyers committed to GPP implementation.[57] Status: - EU GPP criteria are developed to facilitate the inclusion of green requirements in public tender documents. While the adopted EU GPP criteria aim to reach a good balance between environmental performance, cost considerations, market availability and ease of verification, procuring authorities may choose, according to their needs and ambition level, to include all or only certain requirements in their tender documents. - Currently GPP criteria are available for cleaning products and services, computers, monitors, tablets and smartphones, electricity, data centers, server rooms and cloud services, food Catering services and vending machines, furniture, imaging Equipment, consumables, and print services, office building design, construction and management, paints, varnishes and road markings, public space	- Public Procurement Authority started a green procurement project in 2011 as a part of the EU harmonization process. Planning and training activities were implemented and a draft national action plan was prepared. However, no further steps were taken and no revisions were made on the Turkish Public Procurement Law (no: 4734).[59] - The only reference made to environment in the Public Procurement Law is that a positive EIA report must be obtained before the initiation of procurement proceedings where the related legislation requires an Environmental Impact Assessment (EIA) Report for a works project.[60] - Between 2011 and 2013, the Green Procurement Project, supported by the British Embassy Welfare Fund, of which the Public Procurement Authority is the beneficiary, was carried out. The aim of the project is to redefine the procurement approach of the Public Procurement Authority in the public and private sectors with an environmentally friendly and sustainable approach. Within the scope of the project, a draft of the National Green Procurement Action Plan and a draft of the Green Procurement Circular were created. The first steps of a "Green Procurement Commission" for public institutions and a "Green Procurement Initiative" for the private sector have been taken. [61]

[57] https://ec.europa.eu/environment/gpp/index_en.htm
[59] https://www.ihale.gov.tr/yesil_alim_projesi-114-1.html
[60] https://vergiraporu.com.tr/upImage/org/1159bfe1.PDF
[61] https://www.ihale.gov.tr/yesil_alim_projesi-114-1.html

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	maintenance, road design, construction and maintenance, road lighting and traffic signals, textiles and road transport.[58]	**Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.4. Conducting harmonization studies within the scope of the EU Circular Economy Action Plan by disseminating the Turkish Environmental Label System, researching cooperation opportunities with the EU (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparation of the National Sustainable Consumption and Production Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change and Ministry of Trade) National Circular Economy Strategy and Action Plan to be developed within the scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Review of the Industrial Emissions Directive (IED), including the integration of circular economy practices in upcoming Best Available Techniques reference documents	Context: - Assessing options for further promoting circularity in industrial processes in the context of the review of the directive which is the main EU instrument regulating pollutant emissions from industrial installations - Integrating circular economy practices in upcoming Best Available Techniques reference documents - Aiming to enhance the directive's contribution to the zero-pollution objective, as well as its consistency with climate, energy and circular economy policies Status: - On 5 April 2022, a proposal for the revision of the Industrial	- Environmental Permits Regulation (10.09.2014), published by the Ministry of Environment, Urbanization and Climate Change, is in effect. According to the regulation, industrial facilities are required to submit emission measurement report, acoustics report, technical information on wastewater discharge, wastewater treatment plant project approval as well as deep sea discharge technical information and project approval, if applicable. Permits and licenses are provided based on the assessment of these documents. - Several projects have been implemented by the MoEUCC for supporting the process of harmonizing the EU IPPC and IED Directives: o Determination of Industrial Emissions Strategy of Türkiye in Accordance with IPPC (DIES) (2020-2023) o IPPC-Integrated Pollution Prevention and Control, The

[58] https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm

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(BREFs) Calendar: As of 2021	Emissions Directive was published by the European Commission. The updates are intended to guide industrial investments towards Europe's goal of zero pollution, transitioning to a competitive and climate-neutral economy by 2050. - Together with the IED revision, the Commission is expected to put forward a proposal for a revision of the regulation on the European Pollutant Release and Transfer Register (E-PRTR). - (The register, publicly available, provides pollutant emission and waste data on Europe's largest industrial facilities.)[62], [63]	Technical Assistant Project (2012-2014) o IPPC-Integrated Pollution Prevention and Control Twinning Project (2010-2013) o Determination of Compliance Conditions and Requirements of Waste Processing Facilities within the scope of IPPC (IPPC-Waste Management) Project[64] o Sectoral projects were conducted for assessing compliance status and requirements of metal, cement and automotive sectors. - As a part of the EU harmonization process and based on the outcomes of the projects above, drafts were prepared for IPPC Regulation and IPPC Communiques by the Ministry of Environment, Urbanization and Climate Change on cement, textile, large combustion plants, leather processing and surface treatment in automotive industries.[65]
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.3.1. Preparing the national action plan and implementation schedule for implementing EU Integrated Pollution Prevention and Control (IPPC) legislation (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.2. Preparing both the general and sectoral national legislation that includes EU Integrated Pollution Prevention and Control (IPPC) legislation and Best Available Techniques reference documents (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparing national sustainable consumption and production action plan (Responsible Institution/Coordinator: Ministry of Environment,

[62] https://ec.europa.eu/environment/industry/stationary/ied/evaluation.htm
[63] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-revision-of-the-industrial-emissions-directive-(refit)
[64] https://webdosya.csb.gov.tr/db/strateji/icerikler/ifr_aa_26_subat_2021-20210226162303.pdf
[65] https://ippc.csb.gov.tr/en

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		Urbanization and Climate Change and Ministry of Trade) National Circular Economy Strategy and Action Plan to be developed within the scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Launch of an industry-led industrial symbiosis reporting and certification system Calendar: 2022	Context: - Facilitating industrial symbiosis by developing an industry-led reporting and certification system, and enabling the implementation of industrial symbiosis Status: - The launch is planned in 2022	- Industrial symbiosis programs and projects have been implemented in Türkiye for the last decade at industrial zone, regional and national levels - The most significant industry-led industrial symbiosis program is Business Council for Sustainable Development Türkiye (SKD Türkiye) Türkiye Material Marketplace (TMM)[66] - Many studies on industrial symbiosis have been conducted, although not industry-led. This concept has been on the agenda of Türkiye especially in the last 10 years. In this context, in addition to the Green OIZ Project carried out by the Ministry of Industry and Technology, projects supported/executed by various Regional Development Agencies, aiming to identify and realize industrial symbiosis opportunities, have also been implemented.
		Related Planned Actions Türkiye's Green Deal Action Plan: 2.1.3. Completing technical and administrative works for putting Green OIZ and Green Industrial Zone Certification system into practice (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) Circular Economy Network Opportunities Report to be developed

[66] https://donguselekonomiplatformu.com/tmm.html

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		within the scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
KEY PRODUCT VALUE CHAINS		
Electronics and ICT Circular Electronics Initiative, common charger solution, and reward systems to return old devices Calendar: 2020/2021	Context: - Proposing regulatory measures on chargers for mobile phones and similar devices (including the introduction of a common charger); - Proposing regulatory measures for electronics and ICT including mobile phones, tablets and laptops under the Eco-design Directive - Implementing the 'right to repair', including a right to update obsolete software - Improving the collection and treatment of waste electrical and electronic equipment (exploring options for an EU-wide take back scheme to return or sell back old mobile phones, tablets and chargers). - Developing a mandatory certification scheme for recyclers of electronics waste to guarantee efficient material recovery and environmental protection Status: - The Commission published a proposal for a common charger for electronic devices on 23 September 2021. With the final legislation signed on 23 November 2022 and published in the EU Official Journal as Directive (EU) 2022/2380, the legislative process has been completed. - On 22 March 2023, the Commission tabled a proposal for a directive on common rules promoting the repair of goods ("right to repair").[67]	- Regulation on Management of Waste Electrical and Electronic Equipment (WEEE) numbered 32055 and dated 26.12.2022, published by the Ministry of Environment, Urbanization and Climate Change, has been prepared within the framework of harmonization with the EU legislation, taking into account the EU WEEE Directive (2012/19/EU). According to the WEEE Regulation, in the design and production of EEEs and their components, priority should be given to taking the necessary measures for the implementation of eco-design requirements, which can be used for a long time without becoming waste by extending the useful life of the products, allowing for repair and reuse, and facilitating their reuse, recycling or recovery after they are waste. In order to reduce the use of natural resources and raw materials and increase recycling, priority should be given to the use of recycled materials, especially in new design products, if technically appropriate. Collection, reuse, recycling and recovery targets have been determined in the WEEE Regulation, and it will be ensured that the "country target" is achieved together with all parties responsible for the management of WEEE in this Regulation. Again, in the WEEE Regulation, there are regulations for the facilities that will carry out the preparation for re-use activities, where the WEEE that has become waste is transformed into the designed state through cleaning, repair or control processes. - Waste WEEEs (except for industrial monitoring and control instruments, medical device/active implantable medical devices/in

[67] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-circular-electronics/02-2022

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		vitro diagnostic device), renewable and renewed products in accordance with the standards set in TS EN 50614 standards, reusable electrical and electronic equipment (YKEEE) may be resold. - According to the Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate change, waste electrical and electronic equipment is collected in accordance with the collection plan of the local administrations and delivered to the authorized administration or delivered to the collection points, waste collection centers and/or waste processing facilities established for these wastes. It is expected that the collected wastes of the municipalities will primarily be utilized for material recycling and other recovery opportunities at the maximum scale. - In addition, in accordance with the WEEE Regulation, EEE producers can collect WEEE by creating collection systems such as deposit refund system, and at the same time, WEEE processing facilities are authorized to collect. The Regulation on the Sale of Refurbished Products No. 31221 published by the Ministry of Trade on 22.08.2020 regulates the activities related to the renewal, certification and resale of used mobile phones and tablets. Second-hand mobile phones and tablets can be renewed by authorized renewal centers in accordance with the regulations determined by the Ministry of Trade or the standards determined by the Turkish Standards Institute. Refurbished products can be resold as refurbished products after they are certified and packaged.[68] In addition, the Regulation Amending the Regulation on the Sale of Refurbished Products was published in the Official Gazette dated 18.04.2023 and numbered 32167. With the regulation, refurbished products include smart watches, computers (laptop, desktop), game consoles and modems.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the

[68] https://www.resmigazete.gov.tr/eskiler/2020/08/20200822-6.htm

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		circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparation of the National Sustainable Consumption and Production Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Electronics and ICT Review of the Directive on the restriction of the use of certain hazardous substances in electrical and electronic equipment and guidance to clarify its links with REACH and Eco-design requirements Calendar: 2021	Context: - A revision of EU rules on the use of hazardous substances in electronics. - Developing a legislative proposal to be accompanied by an impact assessment Status: - Expected in the fourth quarter of 2022[69]	- Waste Electrical and Electronic Equipment (WEEE) Control Regulation (WEEE) numbered 32055 and dated 26.12.2022, published by the Ministry of Environment, Urbanization and Climate change, has been prepared within the framework of harmonization with the EU legislation, taking into account the EU WEEE Directive (2012/19/EU). Pb, Hg, Cd, Cr6+, PBB, PBDE, DEHP, BBP, DBP and DIBP are allowed to be present in homogeneous materials in amounts not exceeding the maximum concentration specified in the regulation by weight.[70] - Regulation on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) (23.06.2017), published by the Ministry of Environment, Urbanization and Climate change, is in effect in Türkiye. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.6.1. Tracking the revisions in the EU chemicals legislation and completing the process of harmonizing to EU legislation. (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Batteries Proposal for a new regulatory	Context: - Aiming to develop rules on recycled content and measures to improve the collection and recycling rates of all batteries, ensuring the	- Waste Batteries and Accumulators (WBA) Regulation dated 31.08.2004, numbered 25569 was published by the Ministry of Environment, Urbanization and Climate change and entered into force as of 01.01.2005. The Regulation has been prepared based on the Directive on Batteries and Accumulators Containing Certain

[69] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-revision-of-eu-rules-restricting-the-use-of-hazardous-substances-in-electronics/02-2022
[70] https://www.resmigazete.gov.tr/eskiler/2022/12/20221226-2.htm

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framework for batteries Calendar: 2020	recovery of valuable materials and providing guidance to consumers Status: - On 10 December 2020, the Commission presented a proposal for a regulation repealing the existing Directive. The proposal includes: - Mandatory requirements for all batteries placed on the EU market - Requirements related to sustainability and safety (including restrictions on the use of hazardous substances, in particular mercury and cadmium; carbon footprint rules; mandatory recycled content targets for cobalt, lead, lithium and nickel; performance and durability parameters; removability and replaceability of portable batteries; safety of stationary battery energy storage systems) as well as to labelling and information - Addressing non-rechargeable batteries with a view to progressively phasing out their use where alternatives exist - Modifying requirements for the implementation of extended producer responsibilities (EPR) obligations - Requirements for the end-of-life management of batteries, setting new collection targets for waste portable batteries (65 % in 2025 and 70 % in 2030), and requiring to facilitate the repurposing of industrial and electric-vehicle batteries as stationary energy storage batteries. - Obligations of economic operators linked to product requirements and due diligence schemes; setting up of an electronic exchange system for battery information, with the creation of a 'Battery Passport'. - Provisions on mandatory green public procurement, on conformity assessment, notification of conformity assessment bodies, market surveillance and economic instruments. - On 09.12.2022, an interim political agreement was reached between the European Parliament and the Council on new rules regarding the batteries. Once the new law goes into effect, sustainability requirements regarding carbon footprint, recycled content, and performance and durability will be introduced gradually from 2024.[71,]	Dangerous Substances numbered 91/157/EEC. Directive 91/157/EEC was repealed with the 2006/66/EEC directive published by the European Union in 2006 and still in force. - With the expressed regulation, prohibitions and restrictions are imposed on the marking, labeling, production, and import of battery and accumulator products, and restrictions are imposed on the import and production of batteries according to the levels of dangerous substances such as mercury and cadmium. In addition, it is stated in the expressed regulation that accumulator manufacturers are obliged to take measures to minimize the number of harmful substances in the accumulators they produce or import. - Battery and accumulator manufacturers and those who market them are responsible for the collection, transportation and disposal of waste batteries and accumulators. - In accordance with the amendment made in 2014, the procedures and principles of market surveillance and inspection (PGD) of battery and accumulator products, such as checking whether the batteries and accumulators are to be placed on the market for the first time within the scope of the WBA regulation, whether they are produced in accordance with the relevant technical regulation during the stage of supply or distribution to the market or when the product is on the market, whether they are safe or not are carried out by the Ministry of Industry and Technology within the framework of the provisions of the Law No. 4703. - Battery producers are responsible for collecting and disposing certain percentages of the product amount placed on the market. In this direction, waste batteries are collected with a quota application, which is defined as the collection of waste batteries at a rate corresponding to the number of batteries entered into the market for the collection of waste batteries, and accumulators are collected with a deposit application. - The Draft Regulation on the Management of Batteries and

[71] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-revision-of-the-eu-battery-directive-(refit)

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	[72, 73]	Accumulators published by the Ministry of Environment, Urbanization and Climate Change, has been opened to the opinions of the institutions, to ensure the harmonization of the Waste Batteries and Accumulators Regulation, with the 2006/66/EC Directive, which is the consolidated EU legislation, and it is planned to be published in 2023. In addition, following the enactment of the Draft EU regulation, repealing Directive 2006/66/EC dated 10.12.2020 and numbered 2020/0353/COD and amending the Regulation (EU) numbered 2019/1020, for the Regulation of the European Parliament and of the Council on batteries and waste batteries, the compliance with the legislation within the scope of the duties and authorities of the Ministry of Environment, Urbanization and Climate Change will be examined and its transfer to national legislation will be evaluated. - Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, focuses mainly on the collection of the waste batteries and their delivery to the collection centers. Accordingly, waste batteries are collected in accordance with the collection plan of the local administrations and delivered to the authorized administration or they are delivered to the collection points, waste collection centers and/or waste processing facilities established for these wastes. It is expected that the collected wastes of the municipalities will primarily be utilized for material recycling and other recovery opportunities at the maximum scale.
		Related Planned Actions/ Türkiye's Green Deal Action Plan

[72] https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/689337/EPRS_BRI(2021)689337_EN.pdf
[73] https://ec.europa.eu/commission/presscorner/detail/en/ip_20_2312

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End-of-life vehicles Review of the rules on end-of-life vehicles Calendar: 2021	Context: - Revising of the current directives on end-of-life vehicles and on the type approval of motor vehicles with regard to their reusability, recyclability and recoverability. - Promoting more circularity by linking design issues to end-of-life treatment, considering rules on mandatory recycled content for certain materials of components and improving recycling efficiency. Status: - The legislative proposal, to be accompanied by an impact assessment, is expected in the fourth quarter of 2022.[74]	- End of Life Vehicles (ELV) Regulation (30.12.2009), published by the Ministry of Environment, Urbanization and Climate Change, is in effect. The purpose of the Regulation is to reuse-recovery of ELVs at least 95% of the average vehicle weight and reuse-recycle of ELVs at least 85% of the average vehicle weight. This regulation was developed to be in line with the Directive 2000/53/EC of the European Parliament and of the Council on end-of life vehicles. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Waste Oils Review of the rules on proper treatment of waste oils Calendar: 2022	Context: - Aiming to ensure that waste oils are correctly managed and to avoid contaminating the environment and to take advantage of its high recovery potential - Treating waste oils in accordance with the waste hierarchy to protect human health and the environment, ensuring waste oils are collected separately and those with different characteristics are not mixed, and they are not mixed with other kinds of waste or substances that would impede their treatment. Status: - Deadline for submitting a legislative proposal on measures for the treatment of waste oils has been identified as 31 December 2022[75]	- Waste Oil Management Regulation (21.12.2019), published by the Ministry of Environment, Urbanization and Climate Change, is in effect. It includes procedures related to temporary storage, collection, transportation, refining, energy recovery, and disposal of waste oil. - In accordance with the amendments made in 2020, refining facilities are required to analyze the waste oils by the refining plants before receiving them. Based on the level of PCB and chlorine content, waste oils are treated by the refining facilities or incinerated. Cleaner production technologies should be employed during the refining process. **Related Planned Actions/** Türkiye's Green Deal Action Plan:

[74] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-revision-of-eu-rules-on-end-of-life-vehicles-and-type-approval-of-motor-vehicles
[75] https://ec.europa.eu/environment/topics/waste-and-recycling/waste-oil_en

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		2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Packaging Review to reinforce the essential requirements for packaging and reduce (over)packaging and packaging waste Calendar: 2021	Context: - Reviewing Directive 94/62/EC27 to reinforce the essential requirements for packaging to ensure their reuse and recycling, uptake of recycled content and improve their enforceability. - Envisaging measures to reduce over-packaging and packaging waste (also in e-commerce), including by setting targets and other waste prevention measures - Making all packaging reusable or recyclable in an economically viable way by 2030, improving recyclability and minimising the complexity of packaging, increasing recycled content, phasing out hazardous and harmful substances, and promote reusing. - Using modern and efficient sorting equipment and separation technologies combined with a better eco-design of packaging, including the need to re-design packaging solutions based on improved LCA-criteria Status[76]: On 30 November 2022, a proposal to revise the EU legislation on EU Packaging and Packaging Waste was submitted.The proposed revision of the EU legislation on Packaging and Packaging Waste has targets stated below; • To reduce packaging waste by 15% by 2040 per Member State per capita, compared to 2018.	- The Regulation on Control of Packaging Waste (26.06.2021), published by the Ministry of Environment, Urbanization and Climate Change, came into force in 2021, repealing the previous regulation dated 2017. All amendments made in 2021 have been developed to comply with the EU Packaging and Packaging Waste Directive.The major points emphasized in the new regulation are recycling and recovery targets for packaging and the deposit system practices which will primarily be implemented for beverage packaging. The most striking concepts underlined are zero waste and circular economy. - Packaging and packaging wastes are required to be managed within a management system that includes deposit and zero waste systems, in accordance with circular economy and resource efficiency principles. - As part of Regulation on Control of Packaging Waste, Türkiye has developed new yearly recycling and recovery targets across the country whereby Türkiye is significantly making efforts to reduce waste, packaging waste, and increase the recycling rate. For instance, between 2026 and 2030 (for each year) Türkiye wants to achieve a 65% recycling rate. - One of the most important provisions in the 2017 (former) Regulation on Control of Packaging Wastes are; banning pricing plastic bags and in Turkish markets packaging used must be at least partially made from recycled materials. This regulation is significant because it tackles packaging waste and especially plastics packaging in line with the EU standards. With the

[76] Proposal Packaging and Packaging Waste (europa.eu)

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	• To foster reuse or refill of packaging, which has declined steeply in the last 20 years, companies will have to offer a certain percentage of their products to consumers in reusable or refillable packaging. There will also be some standardisation of packaging formats and clear labelling of reusable packaging. • To address clearly unnecessary packaging, certain forms of packaging will be banned (ex. Single use) • Many measures aim to make packaging fully recyclable by 2030. This includes setting design criteria for packaging; creating mandatory deposit return systems for plastic bottles and aluminium cans; and making it clear which very limited types of packaging must be compostable so that consumers can throw these to biowaste. • There will also be mandatory rates of recycled content that producers have to include in new plastic packaging. This will help turn recycled plastic into a valuable raw material – as already shown by the example of PET bottles in the context of the Single-Use Plastics Directive. In addition, a Communication on "an EU policy framework on biobased, biodegradable and compostable plastics" was published on the same date. This policy document is not legally binding. It provides explanations about biobased, biodegradable and compostable plastics and sets out the conditions under which their production and consumption will have a positive overall environmental impact. <u>Next steps</u> The proposal on packaging and packaging waste will now be considered by the European Parliament and the Council, in the ordinary legislative procedure.	amendment made in the Environmental Law No. 2872 in 2018, the provision of giving plastic bags to the user or the consumer at the sales points for a fee was added in order to prevent the environmental pollution caused by the efficient management of resources and to prevent environmental pollution caused by plastic bags. - According to the Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, non-hazardous recyclable paper, glass, metal, plastic wastes originating from houses or commercial, industrial enterprises and institutions that are similar in content or structure are collected in different collection equipment from other wastes and collected separately. - In line with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, places such as cafeterias, restaurants and restaurants, where disposable cups and beverages are supplied, primarily offer the reusable (reusable) cup option to the customers and make arrangements to encourage this practice. Similarly, places such as cafeterias, restaurants allow multi-use options to be preferred for disposable plates, forks, knives, and spoons. It ensures that materials such as straws and wet wipes are provided only when requested by the customers, and that these materials are not sent in package services unless the customer requests it. On the other hand, cargo companies and places selling packaged products should not use packaging with a volume and weight more than sufficient to ensure the required safety and health level, the materials used in packaging should be suitable for reuse and/or recycling, and the necessary measures should be taken to reduce the use of plastic. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry

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		of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Plastics Mandatory requirements on recycled plastic content and plastic waste reduction measures for key products such as packaging, construction materials and vehicles Calendar: 2021/2022	Context: - Implementing the new Directive on Single Use Plastic Products and fishing gear to address the problem of marine plastic pollution while safeguarding the single market: - Harmonised interpretation of the products covered by the Directive - Labelling of products such as tobacco, beverage cups and wet wipes and ensuring the introduction of tethered caps for bottles to prevent littering - Developing for the first time rules on measuring recycled content in products - Reinforcing EU Strategy for Plastics in the Circular Economy by stipulating essential requirements - New rules on packaging to improve the recyclability of plastics and increase the demand for recycled plastic content - Improving the separate collection of plastic waste Status: - Commission adopted EU plastics strategy and prepared the proposal for a Directive on single-use plastics in 2018. Directive on single-use plastics entered into force in 2019.	- Regulation on Control of Packaging Waste (26.06.2021), published by the Ministry of Environment, Urbanization and Climate Change, includes specific articles for plastic packaging as indicated above. These include reduction of the plastic bag usage, 55% annual recycling target. It is also underlined in the regulation that the MoEUCC might implement additional measures for reducing single-use packaging, plastic bags. - Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, requires wastes of different material types to be collected separately, including plastic wastes as well. In accordance with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, places such as cafeterias and restaurants where disposable cups are supplied primarily offer the option of reusable (reusable) cups to customers and make arrangements to encourage this practice. Similarly, places such as cafeterias, restaurants allow multi-use options to be preferred for disposable plates, forks, knives, and spoons. It ensures that materials such as straws and wet wipes are provided only when requested by the customers, and that these materials are not sent in package services unless the customer requests it.

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	- With the new circular economy action plan in 2020, revised legislative proposals on waste were brought to agenda. - Single-use plastic products that will have restrictions placed on them under the directive include cotton-bud sticks (with medical-use exceptions), cutlery, plates, straws, stirrers and balloon sticks were banned from the marketplace from 3 July 2021. - 77% of plastic beverage bottles must be collected separately for recycling by 2025, and 90% by 2029. All PET beverage bottles must incorporate 25% recycled content by 2025 and all plastic bottles must incorporate 30% recycled content by 2030. All single-use plastic beverage container caps and lids must be attached to the beverage container to ensure the entire product can be recycled and no material is lost during consumption (by 2024). [77]	**Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. "Determining technical criteria for the use of recycled secondary products and materials" within the scope of the preparation of the preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) EU Single-Use Plastics Directive Regulatory Impact Assessment Study to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Plastics Restriction of intentionally added microplastics and measures on unintentional release of microplastics Calendar: 2021	Context: - Restricting intentionally added microplastics and tackling pellets taking into account the opinion of the European Chemicals Agency; - Developing labelling, standardisation, certification and regulatory measures on unintentional release of microplastics, including measures to increase the capture of microplastics at all relevant stages of products' lifecycle; - Further developing and harmonising methods for measuring unintentionally released microplastics, especially from tyres and textiles, and delivering harmonised data on microplastics concentrations in seawater; - Closing the gaps on scientific knowledge related to the risk and occurrence of microplastics in the environment, drinking water and foods. Status:	- According to the Regulation on Control of Packaging Waste, published by the Ministry of Environment, Urbanization and Climate Change, Oxo-degradable plastic packaging made of plastic materials that include additives to catalyse the decomposition of plastic materials into micro particles are not regarded as biodegradable packaging. - Currently there are no other specific regulations regarding the restriction of microplastics. - Ministry of Agriculture and Forestry started the Microplastics in Surface Waters, Their Impacts and Control Methods Project in 2020. The project will be completed in 2022. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis

[77] https://ec.europa.eu/environment/strategy/plastics-strategy_en#:~:text=The%20EU's%20plastics%20strategy%20aims,the%20environment%20and%20human%20health.

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	- The initiative, to be accompanied by an impact assessment, will address the largest microplastics contributors in the current European context (accounting for nearly two thirds of total emissions), namely tyre abrasion; pre-production plastic pellets during their entire life-cycle; and synthetic textiles during their entire life cycle. - One of the key 2030 targets set in the Zero Pollution Action Plan for air, water and soil, put forward on 12 May 2021, is reducing by 30 % microplastics released into the environment. - The proposal to tackle microplastics unintentionally released into the environment is expected in the fourth quarter of 2022.[78]	studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) Single-Use Plastics and Marine Litter Roadmap to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Plastics Policy framework for bio-based plastics and biodegradable or compostable plastics Calendar: 2021	Context: - Addressing emerging sustainability challenges by developing a policy framework on: - Sourcing, labelling and use of bio-based plastics, based on assessing where the use of bio-based feedstock results in genuine environmental benefits, going beyond reduction in using fossil resources - Use of biodegradable or compostable plastics, based on an assessment of the applications where such use can be beneficial to the environment, and of the criteria for such applications. (It will aim to ensure that labelling a product as 'biodegradable' or 'compostable' does not mislead consumers to dispose of it in a way that causes plastic littering or pollution due to unsuitable environmental conditions or insufficient time for degradation.) Status: Communication for an "EU policy framework on biobased, biodegradable and compostable plastics" was published on 30 November 2022. This policy document is not legally binding. It provides explanations about biobased, biodegradable and compostable plastics and sets out the conditions under which their production and consumption will have a positive overall environmental impact.	- There are below provisions on biodegradable materials in articles 5 and 6 of the Regulation on Control of Packaging Waste (26.06.2021), published by the Ministry of Environment, Urbanization and Climate Change. Oxo-degradable plastic packaging made from plastic materials containing additives that catalyze the breakdown of plastic materials into microparticles are not considered biodegradable packaging. MoEUCC is responsible for identifying procedures and principles for ensuring the separate collection, treatment and recovery of biodegradable packaging wastes and for reducing the waste amount to be disposed at landfills. - **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment,

[78] https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-microplastics

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		Urbanization and Climate Change)
Textiles EU Strategy for Textiles Calendar: 2021	Context: - Applying the new sustainable product framework to develop eco-design measures, ensure that textile products are fit for circularity, ensuring the uptake of secondary raw materials, tackling the presence of hazardous chemicals, and empowering business and private consumers to choose sustainable textiles and have easy access to reuse and repair services; - Improving the business and regulatory environment for sustainable and circular textiles in the EU, in particular by providing incentives and support to product-as-service models, circular materials and production processes, and increasing transparency through international cooperation; - Providing guidance to achieve high levels of separate collection of textile waste, which Member States have to ensure by 2025; - Boosting the sorting, re-use and recycling of textiles, including through innovation, encouraging industrial applications and regulatory measures such as extended producer responsibility Status: Commission adopted the EU strategy for sustainable and circular textiles on 30 March 2022. The Strategy lays out the following actions: - Set design requirements for textiles to make them last longer, easier to repair and recycle - Introduce clearer information on textiles and a digital product passport - Empower consumers and tackle greenwashing by ensuring the accuracy of companies' green claims - Stop overproduction and overconsumption, and discourage the destruction of unsold or returned textiles - Harmonise EU Extender Producer Responsibility rules for textiles and economic incentives to make products more sustainable - Address the unintentional release of microplastics from synthetic textiles	- Integrated Pollution Prevention and Control Communique for Textile Sector (14 December 2011), published by the Ministry of Environment, Urbanization and Climate Change, is in effect. It was amended in 2015. Textile production facilities conducting washing, bleaching, yarn or fabric dyeing processes with a capacity over 10 tons/day are subject to this regulation. It aims to minimize the environmental impacts the textile production by employing resource and energy efficient processes and cleaner production technologies. The Communique includes a list of best available techniques (BATs) applicable for the relevant production processes and the companies are required to prepare their cleaner production plan based on the applicable BATs they choose from the list. This regulation focuses mainly on the production phase and does not cover the circularity approach as a whole. - On 30.12.2022, "Communique on Cleaner Production Practices in the Textile Sector" was published by the MoEUCC to minimize the negative effects of textile sector activities on the environment, to prevent air and water pollution, and to implement clean production technologies for reducing water and energy consumption. In addition, the communique aims to reduce water consumption and prevent unconscious groundwater consumption in the sector where water consumption is intense. - Textile products are among the product groups for which environmental labelling criteria are available in accordance with The Regulation on Environmental Labelling published by the Ministry of Environment, Urbanization and Climate Change. - In line with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, priority is given to the repair and reuse of unused products or components, if appropriate, and waste generation is reduced by extending the product life cycle. It is essential to collect the used textile products in order to extend their life, to deliver them to the needy and to ensure their reuse. Within the scope of separate collection of wastes, local administrations

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	- Address the challenges from the export of textile waste adopt an EU Toolbox against counterfeiting by 2023 - Publish a transition pathway by the end of 2022 - an action plan for actors in the textiles ecosystem to successfully achieve the green and digital transitions and increase its resilience [79]	ensure that collection equipment is placed for the collection of textiles/clothes. **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.5. Updating the cleaner production legislation of the textile sector which has a high water consumption (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.6. Developing a cleaner production legislation for leather sector which has a high water consumption (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.7. Organizing cleaner production trainings on cleaner production practices in textile and leather sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Strategy and Action Plan to be developed within the scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Construction and buildings Strategy for a Sustainable Built Environment	Context: - Addressing the sustainability performance of construction products in the context of the revision of the Construction Product Regulation, including the possible introduction of recycled content requirements for certain construction products, taking into account their safety and functionality;	- Regulation on the Control of Excavated soil, construction, and demolition wastes (18.03.2004), published by the Ministry of Environment, Urbanization and Climate Change, is in effect. The Regulation aims to regulate the general rules and the technical, administrative issues associated with the reduction, collection, temporary storage, transportation, recovery, valorisation and disposal of excavated soil, construction, and demolition wastes, in an environmentally friendly manner. The regulation identifies waste

[79] https://ec.europa.eu/environment/publications/textiles-strategy_en

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Calendar: 2021	- Promoting measures to improve the durability and adaptability of built assets in line with the circular economy principles for buildings design and developing digital logbooks for buildings; - Using Level(s) to integrate life cycle assessment in public procurement and the EU sustainable finance framework and exploring the appropriateness of setting of carbon reduction targets and the potential of carbon storage; - Considering a revision of material recovery targets set in EU legislation for construction and demolition waste and its material-specific fractions; (In the Waste Framework Directive, it was aimed to increase the non-hazardous construction and demolition wastes to at least 70% by weight by 2020; to ensure the safe management of hazardous materials by promoting selective demolition; to facilitate reuse and high-quality recycling by establishing separation systems; to reduce waste generation).80 - Promoting initiatives to reduce soil sealing, rehabilitate abandoned or contaminated brownfields and increase the safe, sustainable and circular use of excavated soils <u>Status:</u> - The Commission published an inception impact assessment in 2020 and the public consultation ended on 25 December 2020. - On 30 March 2022 Commission adopted the Proposal for a Regulation of the European Parliament and of the Council laying down harmonized conditions for the marketing of construction products, amending Regulation (EU) 2019/1020 and repealing Regulation (EU) 305/2011. This proposal is in line with the context given above and aims to boost the internal market for construction products and ensure that the regulatory framework in place is fit for making the built environment deliver on the sustainability and climate objectives on.[81]	reduction at source, separate collection, reuse and recovery of wastes as the major principles. It is also indicated that sorting of wastes at source is a key to obtain high quality secondary raw materials. - On the other hand, in the Regulation on the Demolition of Buildings (13.10.2021), published by the Ministry of Environment, Urbanization and Climate Change, it is stated that the main demolition cannot be started without the removal and removal of the productions containing asbestos and similar hazardous chemicals in the buildings and without selective demolition according to Regulation on the Control of Excavated soil, construction, and demolition wastes. It is stated that all kinds of waste, starting from the recyclable material, should be separated at the source with appropriate processes and temporarily accumulated, primarily reused, and if it is not possible, recovery should be ensured. - The two regulations above are in line with the EU Waste Framework Directive's objectives for reducing waste generation, selective demolition, reuse and recycling for construction and demolition waste. In addition, the non-binding Construction and Demolition Waste Protocol and Guide published by the European Commission focuses on improving areas such as waste identification, separation and collection, waste logistics, waste processing and quality management. The Regulation on the Demolition of Buildings is in compliance with this document with the above-mentioned aspects.[82] - In accordance with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, except for Insulation Materials Containing Asbestos (17 01 06), construction and demolition wastes are accepted to waste collection centers.

[80] https://ec.europa.eu/environment/topics/waste-and-recycling/construction-and-demolition-waste_en
[81] https://ec.europa.eu/docsroom/documents/49315
[82] https://ec.europa.eu/growth/news/eu-construction-and-demolition-waste-protocol-2018-09-18

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		- The Construction Products Regulation, published by the Ministry of Environment, Urbanization and Climate Change, prepared in parallel with the current Construction Products Regulation of the European Commission numbered 305/2011/EU, aims to design, build and demolish construction works by taking into account the sustainability of the use of natural resources and the following issues; a) Materials and parts of construction works must be reusable or recyclable after demolition. b) Construction works must be durable. c) Environmentally compatible raw materials and secondary materials should be used in construction works. The Regulation on Control of Soil Pollution and Point Source Contaminated Sites, published by the Ministry of Environment, Urbanization and Climate Change, aims to prevent soil contamination as a receiving environment, to identify areas where contamination is present or likely to occur, and to clean and monitor contaminated soils and sites. In polluted areas, polluters are responsible for covering expenses such as stopping pollution, determining the extent of pollution, and doing the necessary work to eliminate the effects of pollution. The Regulation on Regaining the Lands Degraded by Mining Activities, published by the Ministry of Environment, Urbanization and Climate Change and the Implementation Regulation of Article 16 of the Forestry Law published by the Ministry of Agriculture and Forestry, determines the procedures and principles regarding the rehabilitation of mine sites where natural structure has been terminated or abandoned.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)

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		2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Strategy and Action Plan to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Food: Initiative to substitute single-use packaging, tableware and cutlery by reusable products in food services As part of the Farm to Fork Strategy, a proposal for revision of EU rules on 'use by' and EU level targets for reducing food waste, to be submitted in the last quarter of 2022 and in 2023, respectively Calendar: 2021	Context: - Substituting single-use packaging, tableware and cutlery by reusable products in food services Status: - Directive on single-use plastics entered into force on 2 July 2019 and the Commission adopted guidelines on single-use plastics products on 31 May 2021 - Single-use plastic products that will have restrictions placed on them under the directive include cotton-bud sticks (with medical-use exceptions), cutlery, plates, straws, stirrers and balloon sticks were banned from the marketplace from 3 July 2021. - Commission adopted the latest Implementing Decision on 4 February 2022. It lays down rules for the calculation, verification and reporting on the reduction in the consumption of single-use plastic food containers and beverage cups[83, 84]	- Regulation on Control of Packaging Waste (26.06.2021), published by the Ministry of Environment, Urbanization and Climate Change, includes specific articles for plastic packaging. It is underlined that MoEUCC is responsible and has the authority for developing policies, regulations, procedures and principles regarding the production, supply and release and reduction of single-use plastics. According to the regulation, MoEUCC might implement additional measures for reducing single-use packaging. - In line with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, places such as cafeterias and restaurants, where disposable cups and beverages are supplied, primarily offer the reusable (reusable) cup option to the customers and make arrangements to encourage this practice. Similarly, places such as cafeterias, restaurants allow multi-use options to be preferred for disposable plates, forks, knives, and spoons. It ensures that materials such as straws and wet wipes are provided only when requested by the customers, and that these materials are not sent in package services unless the customer requests it. - According to the Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, it is essential to take the necessary precautions by the relevant parties throughout the production, supply chain and use of food and to prepare food waste prevention plans in order to prevent the formation of food waste. In addition, it is essential to prefer practices that encourage

[83] https://eur-lex.europa.eu/eli/dir/2019/904/oj
[84] https://ec.europa.eu/environment/topics/plastics/single-use-plastics_en

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		the redistribution of food for food donation and human consumption, and to take measures to ensure that food is primarily used for human consumption rather than using it in animal feeds or converting it into non-food products by processing. - The Ministry of Agriculture and Forestry published the National Strategy Document and Action Plan on the Prevention, Reduction and Management of Food Loss and Waste in Türkiye in 2020. The Strategy and Action Plan aims a Türkiye that contributes to sustainable food systems in terms of both consumption and production by preventing, reducing and managing food losses and waste. Policy document objectives; Türkiye's National Roadmap Towards Sustainable Food Systems is supported by other tools published by the Ministry of Agriculture and Forestry, such as the Guide to Combating Food Waste in Hotels, Restaurants and Other Mass Consumption Places, the Guide to Reducing Food Loss in the Logistics Sector, and the Guide to Composting from Food Waste and Waste.
		Related Planned Actions/ Türkiye's Green Deal Action Plan 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
LESS WASTE, MORE VALUE		
Waste reduction targets for specific streams and other measures on waste prevention	<u>Context:</u> - Revision of EU legislation on batteries, packaging, end-of-life vehicles, and hazardous substances in electronic equipment will be proposed with a view to preventing waste, increasing recycled	Among the General Principles, Duties, Authorities and Obligations of the Waste Management Regulation published by the Ministry of Environment, Urbanization and Climate Change, the following issues regarding waste reduction are included; It is essential to prevent and reduce by creating a product environmental

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Calendar: 2022	content, promoting safer and cleaner waste streams, and ensuring high-quality recycling. - Enhancing extended producer responsibility (EPR) schemes <u>Status:</u> - The Commission will put forward waste reduction targets for specific streams as part of a broader set of measures on waste prevention in the context of a review of Directive 2008/98/EC. - The Circular Economy Action Plan commits to significantly reducing total waste generation: it aims to halve the amount of residual (non-recycled) municipal waste by 2030, promote safer and cleaner waste streams, and ensure high-quality recycling. This initiative will integrate the initiative for the reduction of food waste, as the latter constitutes a significant share of municipal waste.[85]	design approach for waste generation and harmful substances in waste, with technologies that focus on more durable, reusable and recyclable products. It is essential to use environmentally compatible physical, chemical, biological or thermal technologies for the purpose of reducing the volume of municipal waste, partially recovering energy or material and final disposal. Zero Waste Program which is supported by Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, sets certain targets and tracks the improvements achieved. In order to prevent and reduce waste generation within the scope of the regulation, as a minimum; a) It is essential to design, produce and use durable, repairable, reusable and recyclable products by developing sustainable production and consumption models for the efficient use of resources. b) If there is an alternative, it is essential to prefer reusable products instead of single use/disposable products. c) It is essential not to use packaging with a larger volume and weight than is sufficient to provide the required level of safety and health for the consumer and the packaged product. ç) It is essential to repair and reuse products, primarily electrical and electronic equipment, textiles, furniture, packaging and construction materials. d) In order to prevent the formation of food waste, it is essential to take the necessary precautions by the relevant parties throughout the production, supply chain and use of food and to prepare food waste prevention plans. e) It is essential to prefer practices that encourage the redistribution of foods for food donation and human consumption, and to take measures to ensure that foods are primarily used for human consumption instead of

[85] https://docs.wbcsd.org/2020/11/WBCSD_Circular_Economy_Action_Plan_2020%E2%80%93Summary_for_business.pdf

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		using them in animal feed or converting them into non-food products by processing. f) It is essential to take measures to reduce the use of dangerous substances in products and materials, without prejudice to the legislation on products and materials. g) It is essential to reduce the generation of wastes that are not suitable for reuse or recycling.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.1.8. Providing information to the companies, primarily SMEs, o environmental labelling and waste management (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
EU-wide harmonized model for separate collection of waste and labelling to facilitate separate collection Calendar: 2022	Context: - Addressing the most effective combinations of separate collection models, the density and accessibility of separate collection points, including in public spaces, taking account of regional and local conditions ranging from urban to outermost regions. - Facilitating consumer involvement through different ways such as common bin colors, harmonized symbols for key waste types, product labels, information campaigns and economic instruments. - Seeking standardization and the use of quality management systems to assure the quality of the collected waste destined for use in products, and in particular as food contact material. - Providing guidance for separate collection of municipal waste Status: - Considering the risk of non-compliance with the municipal waste recycling targets, the Commission planned to organize high-level exchanges on the circular economy and waste and step up cooperation with Member States, regions and cities in making the best use of EU funds.	- Zero Waste Program which is supported by Zero Waste Regulation, published by the Ministry of Environment, Urbanization and Climate Change, aims to ensure more efficient use of resources, landfilling reduction, and increased recycling and reuse. It is based on establishing a Zero Waste Management System and starts with the separate collection of waste by type at the source. - In accordance with the Procedures and Principles Regarding Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, it is ensured that the wastes collected separately at the source are collected by local administrations without mixing them with each other. In this context, double/triple collection systems are established in streets and public areas, recyclable wastes, other wastes and biodegradable wastes are collected separately in triple systems. Glass waste and textile waste is collected separately for reuse or recycling. Separate collection of recyclable wastes, other wastes and biodegradable wastes is ensured with the triple system in wholesalers and market places. In addition, the zero waste logo and the phrase "Zero Waste Collection Vehicle" are used on collection/transport vehicles, and the colors and labels specified on the relevant website are followed.

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	- According to the action plan, development of the model was planned for 2022.[86]	- In line with the Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices, published by the Ministry of Environment, Urbanization and Climate Change, chain markets and sales points with a closed sales area of 400 m^2 and above, in case of sale with non-hazardous paper, glass, metal, plastic waste brought by consumers, batteries, electrical, set collection points by placing collection equipment according to the amount of waste and waste characteristics in easily visible and accessible places for the separate collection of small household appliances or textile wastes. Collecting equipment can be placed for small household electrical equipment and textile wastes brought by consumers, or a collection point can be established by receiving these wastes by the chain market. Sales points encourage consumers (such as in-store announcements, social media accounts) about the collection points they build through appropriate communication channels. If environmental precautions are taken and equipment in accordance with the legislation is preferred, collection equipment can be placed at the collection point for the collection of vegetable waste oils.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 2.1.8. Providing information to the companies, primarily SMEs, o environmental labelling and waste management (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) Guideline on the collection of recyclable waste in accordance with the circular economy concept to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Methodologies to track and	Context:	- Regarding the management of chemicals, Regulation on

[86] https://op.europa.eu/en/publication-detail/-/publication/bb444830-94bf-11ea-aac4-01aa75ed71a1/language-en/format-PDF/source-129395707

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minimize the presence of substances of concern in recycled materials and articles made thereof Calendar: 2021	- Supporting the development of solutions for high-quality sorting and removing contaminants from waste, including those resulting from incidental contamination; - Developing methodologies to minimize the presence of substances that pose problems to health or the environment in recycled materials and articles made thereof; - Co-operating with industry to progressively develop harmonized systems to track and manage information on substances identified as being of very high concern and other relevant substances, in particular those with chronic effects, and substances posing technical problems for recovery operations present along supply chains, and identify those substances in waste, in synergy with measures under the sustainable products policy framework and with the ECHA Database on articles containing substances of very high concern; - Proposing amending the annexes to the Regulation on Persistent Organic Pollutants, in line with scientific and technical progress and the international obligations under the Stockholm Convention; - Improving the classification and management of hazardous waste so as to maintain clean recycling streams, including through further alignment with the classification of chemical substances and mixtures where necessary. <u>Status:</u> - On 28 October 2021, the European Commission submitted a proposal for a regulation to Update the Rules on Persistent Organic Pollutants in Waste. Following the proposal, Regulation No 2022/2400, which revised Annexes IV and V of the EU POPs Regulation No. 2019/1021 on Persistent Organic Pollutants, was published on 23 November 2022. - To the extent possible, this initiative seeks to strike an optimal balance with the European Green Deal's goals of obtaining non-toxic material cycles, increasing recycling and circularity, and reducing greenhouse gas emissions. - The Regulation is to update the concentration limits set in	Registration, Evaluation, Authorization and Restriction of Chemicals (REACH) (23.06.2017) and Regulation on the Safety Data Sheets of Harmful Substances and Mixtures (13.12.2014), published by the Ministry of Environment, Urbanization and Climate Change are in effect. - Specifically relating to Persistent Organic Pollutants (POPs), Türkiye ratified the Stockholm and Basel conventions on POPs. Accordingly, the Regulation on Persistent Organic Pollutants (14.11.2018), published by the Ministry of Environment, Urbanization and Climate Change, has been in effect since 2018. PCB and PCT Control Regulation (27.12.2007) which identifies the methods and principles of disposing PCB containing goods, is another relevant regulation in this area. - National Implementation Plans for the Stockholm Convention on Persistent Organic Pollutants (POPs) was prepared in 2010 as the first national plan. Then in 2015 National Implementation Plan of Persistent Organic Pollutants (POPs) Management in Türkiye was drafted. In addition to such national plan development projects, several technical assistance projects were also implemented. [89, 90]

[89] https://cygm.csb.gov.tr/yonetmelikler-i-440
[90] https://onceliklikimyasallar.csb.gov.tr/ulusal-uygulama-plani-i-5189

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	Annexes IV and V of the POPs Regulation, which determine how wastes containing POPs are processed, in particular whether they can be recycled or disposed of, for certain substances and groups of substances. - This update aligns Annexes IV and V of the Regulation with the substances listed in the Stockholm Convention and Annex I of the POPs Regulation and introduces concentration limit values for them. It also adapts limit values for some already listed substances to scientific and technical progress.[87] [88]	
Harmonised information systems for the presence of substances of concern Calendar: 2021	<u>Context:</u> - Resorting to the new ECHA's SCIP database - Developing "Digital Product Passports" 91, 92	**Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.6.1. Following the changes in the EU chemicals legislation and completing the harmonization studies with the EU legislation (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)

[87] European Commission (2021) regulation proposal for the Update of the Rules on Persistent Organic Pollutants in Waste, available at: https://eur-lex.europa.eu/resource.html?uri=cellar:1d71994b-37cd-11ec-8daf-01aa75ed71a1. 0007.02/DOC_1&format=PDF

[88] Regulation 2022/2400 amending Annexes IV and V of the European Commission (2022) Directive on Persistent Organic Pollutants (2019/1021), available at: https://eur-lex.europa.eu/legal-content/EN /TXT/PDF/?uri=CELEX:32022R2400&from=EN

[91] https://echa.europa.eu/scip

[92] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_2013

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Scoping the development of further EU-wide end-of-waste and by-product criteria Calendar: 2021	Context: - Assessing the scope to develop further EU-wide end-of-waste criteria for certain waste streams based on monitoring Member States' application of the revised rules on end-of-waste status and by-products, and support cross-border initiatives for cooperation to harmonise national end-of-waste and by-product criteria; Status: - Directive (EU) 2018/851 of the European Parliament and of the Council of 30 May 2018 amending Directive 2008/98/EC on waste explains when waste ceases to be waste and becomes a secondary raw material (so called end-of-waste criteria), and how to distinguish between waste and by-products. - A study on the subject was published by the European Commission Joint Research Center (JRC) in March 2022. The aim of the study is to determine the priority waste or by-product streams for which the End of Waste Status and by-product criteria will be developed and to develop a short list for this. Accordingly, a total of 12 waste streams were included under the headings of plastic, textile, tire, mineral fractions of construction and demolition waste and paper and cardboard in the priority waste/by-product list. The waste streams shortlisted here are as follows: - Polyethylene terephthalate recovered/recycled from plastic waste - Low and high density polyethylene recycled/ recovered from plastic waste - Mixed plastic recycled /recovered from plastic waste - Recovered/recycled polystyrene and expanded polystyrene from plastic waste - Recycled/recycled polypropylene from plastic waste[93]	- The Project for Harmonization of the End-of-Waste (EoW) Criteria and Secondary Raw Material Concept with the Turkish Waste Legislation was implemented in 2017 in cooperation with the Ministry of Environment, Urbanization and Climate Change and the EBRD. It is planned to harmonize with the EoW concept, based on article 6 of the EU Waste Framework Directive, which regulates the "end of waste status" and the EoW criteria already developed for iron, steel and aluminum scraps, glass cullet and copper scrap. In the scope of the project, the criteria and conditions for the implementation of the EoW approach in Türkiye were researched with the participation of the relevant sector representatives. It is aimed to examine the EU legislation and to prepare a roadmap for Türkiye.[94] **Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.3. Preparation of the National Sustainable Consumption and Production Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change and Ministry of Trade) The IPA II fund-supported "Development of the End of Waste Concept in Turkey Project" officially started on 26.04.2023. The project aims to develop technical and institutional capacity to determine and effectively implement end-of-waste criteria (EoW) for certain waste streams in Türkiye in line with the Waste Framework Directive (2008/98/EC). Within the scope of the project, metal (iron, steel and aluminum) scrap, glass cullet, copper scrap as well as waste paper, biodegradable waste (compost and digested product), waste plastic and other 4 items specified in the Waste Framework Directive prepared by the Joint Research Center

[93] https://publications.jrc.ec.europa.eu/repository/handle/JRC128647
[94] https://webdosya.csb.gov.tr/db/strateji/icerikler/2018-kmd-web-20180731103811.pdf

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		(JRC) Technical Proposals prepared for other (textile, aggregate, tire, refused-derived fuel (RDF)) waste types will also be evaluated. The project is expected to contribute to the development of the market for high-quality recycled materials, reducing the use of natural resources and waste generation by promoting the use of secondary raw materials.
Revision of the rules on waste shipments Calendar: 2021	Context: - Ensuring that the EU does not export its waste challenges to third countries, considering that illegal shipments of waste remain a source of concern, - Taking actions on product design, quality and safety of secondary materials and enhancing their markets to make "recycled in the EU" a benchmark for qualitative secondary materials - Enhancing re-use and recycling of waste in the EU by a thorough review of EU rules on waste shipments - Restricting exports of waste that have harmful environmental and health impacts in third countries or can be treated domestically within the EU by focusing on countries of destination, problematic waste streams, types of waste operations that are source of concern, and enforcement to counteract illegal shipments. - Supporting measures at multilateral, regional and bilateral levels to combat environmental crime notably in the areas of illegal exports and illicit trafficking, strengthening controls of shipments of waste, and improving the sustainable management of waste in these countries. Status: - On 17 March 2022 European Commission adopted proposal for news rules on waste shipments - Covering all types of waste, the proposed regulation encompasses the following measures: - Strengthening the rules governing the export of waste.	- In accordance with Article 13 of the Environmental Law, the importation of hazardous wastes is prohibited. The Ministry of Trade may prohibit or subject the importation of certain fuels, substances, wastes, hazardous chemicals and goods containing these chemicals, by obtaining the opinion of the MoEUCC.[96] - According to the Waste Management Regulation, published by the Ministry of Environment, Urbanization and Climate Change, the import of wastes of economic value as of the sector may be allowed subject to control. The principles regarding these permits are determined by the regulations made by the Ministry of Trade in line with the opinion of the MoEUCC (Communiqué on Import Inspection of Wastes that are under control relating to protection of environment). - In December 2021, MoEUCC published the Waste Import Practices Circular in order to regulate the documents to be issued to the waste recovery/recycling facilities that will import certain non-hazardous wastes that are allowed to be imported, and the procedures and principles regarding the characteristics of the wastes to be imported. According to the circular; - It is essential that the materials/waste to be imported have a high recovery/recycling efficiency in order to contribute to the economy and to reduce the amount of waste that will go to final disposal. - It is obligatory to process the wastes to be imported at the importing facilities. It is prohibited to be sent to another facility and/or transferred to another natural/legal person without being processed at the importing facilities. - Only thermoplastic waste is allowed in the import of plastic waste. The import of thermoset plastic waste is prohibited.

[96] https://www.mevzuat.gov.tr/mevzuatmetin/1.5.2872.pdf

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	- More effectively addressing illegal waste exports. - Facilitating waste shipments in the internal market of the EU. - Classification of waste would be harmonised. Stricter conditions would be introduced for shipments of waste for incineration and landfilling.[95]	- Except for PET waste, import of plastic wastes is allowed only to heat treatment facilities. - It is obligatory to take necessary measures to ensure that the imported waste does not contain more than 1% foreign matter by weight. [97]
MAKING THE CIRCULAR ECONOMY WORK FOR PEOPLE, REGIONS AND CITIES		
Supporting the circular economy transition through the Skills Agenda, the forthcoming Action Plan for Social Economy, the Pact for Skills and the European Social Fund Plus Calendar: As of 2020	Context: European Skills Agenda[98] The European Skills Agenda is a five-year plan to help individuals and businesses develop more and better skills and to put them to use, by: • strengthening sustainable competitiveness, as set out in the European Green Deal • ensuring social fairness, putting into practice the first principle of the European Pillar of Social Rights: access to education, training and lifelong learning for everybody, everywhere in the EU • building resilience to react to crises, based on the lessons learnt during the COVID-19 pandemic The Pact for Skills[99] The European Commission has launched the Pact for Skills, a shared engagement model for skills development in Europe on November, 2020.	- KOSGEB aimed to determine the current situation of SMEs on green transformation with EU CEAP, to identify their problems and needs, to develop necessary strategies in this regard, to develop their capacities in line with these strategies and to meet their priority needs. R&D, P&D and Innovation Support Programs also include these subjects, and preliminary preparations have been made for the creation of new programs.[103]

[95] https://www.europarl.europa.eu/legislative-train/theme-environment-public-health-and-food-safety-envi/file-revision-of-the-regulation-on-shipments-of-waste-(refit)
[97] https://webdosya.csb.gov.tr/db/ced/icerikler/2021-25-sayili-genelge-20220103145138.pdf
[98] https://ec.europa.eu/social/main.jsp?catId=1223
[99] https://ec.europa.eu/social/main.jsp?catId=1517&langId=en
[103] Activity 1.1 – Institutional Visits and Market Survey Report, Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy Contract No EuropeAid/140562/IH/SER/TR, Date: 16th September 2022, Report Version No. 1

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	The Pact is the first of the flagship actions under the European Skills Agenda and is firmly anchored in the European Pillar of Social Rights. The European Pillar of Social Rights Action Plan[100] The Action Plan sets out concrete initiatives to turn the European Pillar of Social Rights into reality. It proposes headline targets for the EU by 2030. Action plan on the social economy On 9 December 2021, the European Commission adopted a new action plan on the social economy. With the action plan, the Commission put forward concrete measures to help mobilise the full potential of the social economy, building on the results of the 2011 Social Business Initiative and the 2016 Start-up and Scale-up Initiative. European Social Fund (ESF)[101], [102] The ESF restructured into the ESF+, which merges the existing ESF (including the Youth Employment Initiative (YEI)), the Fund for European Aid to the most Deprived (FEAD), the Employment and Social Innovation Programme (EaSI), and the EU Health Programme. ESF+ concentrates its investments on education, employment and social inclusion. Changing technology and the demand for reformed training and education programmes are important to the transition towards circularity and this remains an important element in ESF+. New jobs and other skills will be required in a more circular economy. Training and educational programmes to develop such skills for the circular transition are eligible for support from the ESF.	**Related Planned Actions/** Türkiye's Green Deal Action Plan: 2.1.7. Organizing training programs on cleaner production practices in textile and leather industry (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.8. Conducting trainings, awareness raising and support programs for achieving resource efficiency at regional level (Responsible Institution/Coordinator: Ministry of Industry and Technology and Development Agencies) 7.2.6. Providing trainings on sustainable agriculture techniques, conducting R&D projects, raising awareness and disseminating the related practices (Responsible Institution/Coordinator: Ministry of Agriculture and Forestry) 3.3.4. Conducting introduction and promotion activities for obtaining the maximum benefit from the existing financing opportunities – informing stakeholders on the available opportunities, increasing their capacities and promoting their applications; conducting international collaboration activities for benefitting from financing opportunities; helping institutions to benefit from the calls targeting Green Deal compliance related technologies within the Horizon Europe program (Responsible Institution/Coordinator: Related Institutions)

[100] https://ec.europa.eu/info/strategy/priorities-2019-2024/economy-works-people/jobs-growth-and-investment/european-pillar-social-rights/european-pillar-social-rights-action-plan_en

[101] https://ec.europa.eu/european-social-fund-plus/en

[102] https://www.circularcityfundingguide.eu/funding-types-and-their-applicability/grants-and-subsidies/european-structural-investment-funds/european-social-fund-esf/

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Supporting the circular economy transition through Cohesion policy funds, the Just Transition Mechanism and urban initiatives Calendar: As of 2020	Context: EU Cohesion Policy[104] It contributes to strengthening economic, social and territorial cohesion in the European Union. It aims to correct imbalances between countries and regions. It delivers on the Union's political priorities, especially the green and digital transition. The Just Transition Mechanism[105] The Just Transition Mechanism (JTM) is a key tool to ensure that the transition towards a climate-neutral economy happens in a fair way, leaving no one behind. It provides targeted support to help mobilize	- In the Regional Development National Strategy (BGUS) (2014-2023), it is aimed to transition to a more environmentally friendly economy and to achieve sustainable development goals in the long term, within the scope of the horizontal objective of "Supporting the Sustainable Environment and Green Economy". In this framework, policy priorities such as the transition to clean production and consumption systems at the regional level, eliminating infrastructure deficiencies in this area and increasing energy efficiency are included. Circular economy and related fields form an important basis in the work of the 4 Regional Development Administrations (DAP, DOKAP, KOP, GAP). Preparations for the new term BGUS and regional plans have started and the circular economy will be among the priority areas in the strategy.[107]

[104] https://ec.europa.eu/regional_policy/2021-2027_en
[105] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal/finance-and-green-deal/just-transition-mechanism_en
[107] Activity 1.1 – Institutional Visits and Market Survey Report, Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy Contract No EuropeAid/140562/IH/SER/TR, Date: 16th September 2022, Report Version No. 1

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	around €55 billion over the period 2021-2027 in the most affected regions, to alleviate the socio-economic impact of the transition. Circular Cities & Regions Initiative (CCRI)[106] As part of the EU Circular Economy Action Plan, the Circular Cities & Regions Initiative (CCRI) focuses on implementing the circular systemic solutions at local and regional level by providing assistance to cities and regions. The CCRI aims to increase synergies among projects and initiatives, disseminate relevant knowledge, and give greater visibility to best practices. It offers comprehensive support to stakeholders across Europe's cities and regions. The CCRI - Coordination and Support Office (CCRI-CSO), established in December 2021, is responsible for facilitating the implementation of the CCRI. It does so by creating synergies among relevant projects and initiatives, gathering and disseminating relevant knowledge, and providing visibility to examples of successful Circular Systemic Solutions.	**Related Planned Actions/** Türkiye's Green Deal Action Plan: - 2.1.9. Using, as far as possible, international financing resources and IPA funds for the activities/projects contributing to industry's transition to green and circular economy and carbon reduction (Responsible Institution/Coordinator: Ministry of Industry and Technology) - 3.3.2. Taking initiatives before the EU and member states to access EU financing opportunities for candidate countries on green transformation (Responsible Institution/Coordinator: Ministry of Foreign Affairs, Directorate for EU Affairs)
CROSSCUTTING ACTIONS		
Improving measurement, modelling and policy tools to capture synergies between the circular economy and climate change mitigation and adaptation at EU and national	Context: - Analyse how the impact of circularity on climate change mitigation and adaptation can be measured in a systematic way; - Improve modelling tools to capture the benefits of the circular economy on greenhouse gas emission reduction at EU and national levels;	- In the Draft Climate Change Law, prepared by the Ministry of Environment, Urbanization and Climate Change, one of the responsibility areas of the Ministry of Environment, Urbanization and Climate Change within the scope of reducing greenhouse gas emissions is stated as "ensuring the implementation of circular economy principles". In addition, it has been stated that it is obligatory to establish systems for the management of wastes generated in the region as a greenhouse gas reduction method in OIZs with the principle of circular economy.[108] - In this context, the circular economy will be determined as a principle by the Climate Change Presidency and this concept will

[106] https://research-and-innovation.ec.europa.eu/research-area/environment/circular-economy/circular-cities-and-regions-initiative_en
[108] https://iklim.gov.tr/yonetmelikler-i-24

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
level Calendar: As of 2020		be included in the long-term strategy and National Climate Change Action Plans. **Related Planned Actions/** Türkiye's Green Deal Action Plan 7.1.1. Preparation of the Report on Combating Against Climate Change (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 7.1.2. Preparation of 2023-2030 Climate Change Action Plan and 2050 Climate Change Strategy (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Regulatory framework for the certification of carbon removals Calendar: 2023	Context: Carbon removals [109, 110] In 30 November, the European Commission adopted a proposal for a first EU-wide voluntary framework to reliably certify high-quality carbon removals. To ensure the transparency and credibility of the certification process, the proposal sets out rules for the independent verification of carbon removals, as well as rules to recognise certification schemes that can be used to demonstrate compliance with the EU framework. To ensure the quality and comparability of carbon removals, the proposed regulation establishes four QU.A.L.ITY criteria: • Quantification: Carbon removal activities need to be measured accurately and deliver unambiguous benefits for the climate; • Additionality: Carbon removal activities need to go beyond existing practices and what is required by law;	- With the Regulation on the Monitoring of Greenhouse Gas Emissions published by the Ministry of Environment, Urbanization and Climate Change, in 2014, Communiqué on Monitoring and Reporting of Greenhouse Gas Emissions, Verification of Greenhouse Gas Emission Reports and the Communiqué on the Accreditation of Verifying Bodies, the procedures and principles regarding the monitoring, reporting and verification of greenhouse gas emissions originating from certain activities and the determination of the obligations of verification bodies and enterprises are determined.[111] - On the other hand, the Communiqué on Voluntary Carbon Market Project Registration was published by the Ministry of Environment, Urbanization and Climate Change, in 2013 regarding registering the projects for the Voluntary Carbon Market developed in our country and the follow-up of the carbon certificates obtained from these projects. With the Communiqué it is aimed to record and monitor the greenhouse gas emissions reduced as a result of the projects developed from the Voluntary Carbon Markets in Türkiye, and to

[109] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_7156
[110] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_7156

[111] https://iklim.gov.tr/yonetmelikler-i-24

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
	• Long-term storage: Certificates are linked to the duration of carbon storage so as to ensure permanent storage; • Sustainability: Carbon removal activities must preserve or contribute to sustainability objectives such as climate change adaptation, circular economy, water and marine resources, and biodiversity. The Commission proposal will now be discussed by the European Parliament and the Council, in line with ordinary legislative procedure. Based on the QU.A.L.ITY criteria, the Commission will develop tailored certification methodologies for the different types of carbon removal activities, supported by an expert group. The first meeting of the expert group is planned for the first quarter of 2023.	register the project owners with the carbon certificate to the MoEUCC system.[112] - The voluntary carbon market is a market established to facilitate individuals, institutions and organizations, and non-governmental organizations to voluntarily reduce and compensate their greenhouse gas emissions. Among the main standards used in this context are Gold Standard, VCS, VER+, etc. In this context, there are still more renewable energy facilities. - Studies are planned for the establishment of the Climate Change Directorate Emission Trading System and mitigation certification. - Within the scope of the 2022 Climate Council Commission Recommendations, many references have been made to the circular economy under many headings. Within the scope of carbon capture technologies, topics such as membrane, oxy-burning, chemical cycling, capture technologies directly from the atmosphere, as well as renewable energy and green hydrogen-based combustion technologies in high thermal processes, technologies such as microwave, infrared, plasma, etc. are included to reach low-carbon production in industrial sectors under the title of Clean and Circular Economy.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: 7.1.1. Preparation of the Report on Combating Against Climate Change (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 7.1.2. Preparation of 2023-2030 Climate Change Action Plan and 2050 Climate Change Strategy (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 7.2.5. Implementation and monitoring of carbon storage practices in sustainable land management and combating desertification and land degradation (Responsible Institution/Coordinator: Ministry of Agriculture and Forestry) 7.2.7. Identifying the amount of carbon captured and monitoring

[112] https://cygm.csb.gov.tr/gonullu-karbon-piyasasi-proje-kayit-tebligi-yayimlandi-duyuru-4318

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
		changes in carbon stocks through sustainable land management and best practices on desertification and land degradation (Responsible Institution/Coordinator: Ministry of Agriculture and Forestry)
Reflecting circular economy objectives in the revision of the guidelines on state aid in the field of environment and energy Calendar: 2021	Context: An EU-wide assessment of National Energy and Climate Plans (NECP)[113] Driving forward the green transition and promoting economic recovery through integrated energy and climate planning. NECPs are both a policy tool and an investment agenda that provide business and investors a forward-looking framework. They constitute a strong basis for Member States to design their green recovery and resilience strategies and deliver on broader European Green Deal objectives from a clean and circular economy to a zero pollution ambition.	- In the Climate Change Action Plan (2010-2023), published by the Ministry of Environment, Urbanization and Climate Change, objectives and actions were determined for different sectors, including energy. Within the scope of the actions, there are also topics related to support mechanisms. In relation to the circular economy, there are targets for waste recovery and reduction of stored waste. The Climate Change Presidency predicts that the circular economy will be directly involved in the new action plan. - Within the scope of the 2022 Climate Council Commission Recommendations, many references were made to the circular economy under many headings. Topics such as; under the heading of industry, within the framework of circular economy targets, studies on re-use, use of wastes as by-products, alternative raw materials, and determination of mandatory use rates of products obtained by recycling/recovery and developing support mechanisms for this; making the agri-food value chain sustainable and circular; under the title of Clean and Circular Economy, to reach low-carbon production in the industrial sectors, within the scope of carbon capture technologies, membrane, oxidation, chemical cycling, capture technologies from the atmosphere, as well as renewable energy and green hydrogen-based combustion technologies in high thermal processes, microwave, infrared, plasma, etc. are included.
		Related Planned Actions/ Türkiye's Green Deal Action Plan: - 3.1.1. Reviewing the national incentive system and identifying the needs, taking into account the incentive elements provided in the EU for promoting green transition – assessing the supports for green transition activities in line with updates on state aids

[113] https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1600339518571&uri=COM%3A2020%3A564%3AFIN

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
		(Responsible Institution/Coordinator: Ministry of Industry and Technology)
Mainstreaming circular economy objectives in the context of the rules on non-financial reporting, and initiatives on sustainable corporate governance and on environmental accounting Calendar: 2020/2021	Context: The corporate sustainability reporting directive (CSRD)[114] The European Commission presented the CSRD proposal on 21 April 2021 as part of the European Green Deal and the Sustainable Finance Agenda. The Council gave its final approval to the corporate sustainability reporting directive (CSRD) on November, 2022. This means that companies will soon be required to publish detailed information on sustainability matters. This will increase a company's accountability, prevent divergent sustainability standards, and ease the transition to a sustainable economy. The CSRD introduces more detailed reporting requirements and ensures that large companies and listed SMEs are required to report on sustainability matters such as environmental rights, social rights, human rights and governance factors. The CSRD strengthens the existing rules on non-financial reporting introduced in the Accounting Directive by the 2014 non-financial reporting directive (NFRD), which are no longer tailored to the EU's transition to a sustainable economy.	- **Related Planned Actions/** Türkiye's Green Deal Action Plan: - 3.2.1. Preparing a legislation for identifying the sustainability of the investments taking into account the taxonomy legislation of the EU and international organizations (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
LEADING EFFORTS AT GLOBAL LEVEL		
Leading efforts towards reaching a global agreement on plastics	Context: EU helps launch negotiations on landmark global agreement on plastic pollution The United Nations Environment Assembly agreed to launch	- Türkiye actively participates in the negotiations carried out within the scope of the United Nations Environment Assembly Intergovernmental Negotiation Committee on Plastic Pollution (INC) and closely follows the process. On 10.02.2023 Türkiye submitted its first written statement on potential options for legally binding international instrument to the committee secretariat. [116]

[114] https://data.consilium.europa.eu/doc/document/PE-35-2022-INIT/en/pdf

[116] https://wedocs.unep.org/bitstream/handle/20.500.11822/41906/WrittensubmissionofTu%cc%88rkiye.pdf?sequence=3&isAllowed=y

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
Calendar: As of 2020	negotiations on a legally binding global agreement to combat plastic pollution in March 2022. Next steps The decision mandates the holding of the first session of the Intergovernmental Negotiating Committee in the second semester of 2022 and establishes the ambition to conclude negotiations by 2024. The EU will continue to work with its allies and other partners aiming at a rapid conclusion of the negotiations[115]	**Related Planned Actions/** Türkiye's Green Deal Action Plan
Proposing a Global Circular Economy Alliance and initiating discussions on an international agreement on the management of natural resources Calendar: As of 2021	Context: Global Alliance on Circular Economy and Resource Efficiency (GACERE) GACERE has been initiated by the European Commission, on behalf of the EU, and by the United Nations Environment Programme (UNEP), in coordination with the United Nations Industrial Development Organization (UNIDO). Bringing together governments and relevant networks and organisations, the Global Alliance on Circular Economy and Resource Efficiency (GACERE) aims to provide a global impetus for initiatives related to the circular economy transition, resource efficiency and sustainable consumption and production, building on efforts being deployed internationally. GACERE members will do so by working together and advocating at the political level and in multilateral fora, in particular at the United Nations General Assembly (UNGA), the United Nations Environment Assembly (UNEA) and in G7/G20. Current members of the alliance; - European Union - Countries: Canada, Kenya, Republic of Korea, Chile, Morocco, Rwanda, Colombia, New Zealand, South Africa, Nigeria, Switzerland, India, Norway, Japan, Peru	- **Related Planned Actions/** Türkiye's Green Deal Action Plan 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)

[115] https://ec.europa.eu/commission/presscorner/detail/en/IP_22_1466

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
	- International organizations: United Nations Environment Programme: United Nations Industrial Development Organization - Strategic partners: Ellen MacArthur Foundation, Platform for Accelerating the Circular Economy, World Circular Economy Forum[117]	
Mainstreaming circular economy objectives in free trade agreements, in other bilateral, regional and multilateral processes and agreements, and in EU external policy funding instruments Calendar: As of 2020	Context: According to the rules in the EU's trade agreements, the EU and its trade partners must cooperate for a shift to a circular and resource-efficient economy, and deforestation-free supply chains.[118] The European Union is providing several funding programmes in order to support the transition to a circular economy, such as the European Structural and Investment Funds, Horizon 2020 and the LIFE programme.[119]	- The European Union–Türkiye Customs Union is a trade agreement between the European Union (EU) and Türkiye which is in effect since 1995. According to the agreement, goods may travel between the two entities without any customs restrictions. In addition to providing for a common external tariff for the products covered, the Customs Union foresees that Türkiye is to align to the acquis communautaire in several essential internal market areas, notably with regard to industrial standards. - The basis of the studies started by the Ministry of Trade for developing and implementing the Türkiye's Green Deal Action Plan was mainly the requirements associated with the Customs Union agreement. It was underlined that complying with the EU Green Deal related targets and regulations was critical for maintaining Türkiye's existing free trade rights. **Related Planned Actions/** Türkiye's Green Deal Action Plan: - 3.3.4. Conducting introduction and promotion activities for obtaining the maximum benefit from the existing financing opportunities – informing stakeholders on the available opportunities, increasing their capacities and promoting their

[117] https://ec.europa.eu/environment/international_issues/gacere.html
[118] https://policy.trade.ec.europa.eu/development-and-sustainability/sustainable-development/sustainable-development-eu-trade-agreements_en
[119] https://circulareconomy.europa.eu/platform/en/financing-circular-economy

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
		applications; conducting international collaboration activities for benefitting from financing opportunities; helping institutions to benefit from the calls targeting Green Deal compliance related technologies within the Horizon Europe program (Responsible Institution/Coordinator: Related Institutions) - Taking initiatives before the EU and member countries in order to accessing to the green transition related financing opportunities available for candidate countries
MONITORING THE PROGRESS		
Updating the Circular Economy Monitoring Framework to reflect new policy priorities and develop further indicators on resource use, including consumption and material footprints Calendar: As of 2021	Context: The monitoring framework on the circular economy as set up by the European Commission consists of ten indicators, some of which are broken down in sub-indicators. These indicators were selected in order to capture the main elements of a circular economy. The list is constructed to be short and focused. • Self-sufficiency of raw materials for production in the EU; • Green public procurement (as an indicator for financing aspects); • Waste generation (as an indicator for consumption aspects); • Food waste; • Recycling rates (the share of waste which is recycled) of specific waste streams (packaging waste, biowaste, e-waste, etc.); • Contribution of recycled materials to raw materials demand; • Trade of recyclable raw materials between the EU Member States and with the rest of the world; • Private investments, jobs and gross value added; • Patents related to recycling and secondary raw materials as a proxy for innovation. To ensure consistent reporting, Eurostat will regularly update the monitoring framework available in this website section. The European Commission will continue to elaborate the indicators which need	- Existing TURKSTAT data on wastes and material flows - Circularity assessments (development of Sankey diagrams and calculation of circularity rates) within the scope of Technical Assistance Project for Evaluation of Türkiye's Potential for Transition to Circular Economy. In this context, the use of waste data within the scope of the Mass Balance System of the Ministry of Environment, Urbanization and Climate Change, as well as TURKSTAT data. **Related Planned Actions/** Türkiye's Green Deal Action Plan - 2.1.2. Preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Monitoring Mechanism and Indicators to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

2020 CEAP ACTIONS	EU CONTEXT - STATUS[41]	TURKISH CONTEXT
	further developments, in particular regarding the methodology and/or data collections.[120]	

[120] https://ec.europa.eu/eurostat/web/circular-economy/indicators

3.1.2. Compliance with the EU's Circular Economy Policies

Current Turkish policy and legislative framework in comparison to the EU circular economy related regulations and directives are analysed in this section.

According to the 2022 Country Progress Report prepared by the EC, Türkiye is **partly aligned** with the relevant EU waste legislation while positive developments were noted on increasing capacity. The report underlines that Türkiye ratified the Basel Convention 2019 Amendment in February 2022 and the current notification procedure practices are in line with the Convention. The legislation on zero waste adopted in July 2019 and continued to be implemented. Preparations for the introduction of the deposit system started in 2022 and it is expected to be fully functional in mid-2023. Increase in alignment and capacity for sorting, recycling and medical waste treatment continued. The report also stresses the necessary for the implementation of waste management plans at local level. Legislation on ship recycling which would mirror the requirements of the EU Ship Recycling Regulation was not adopted that leads concerns regarding safety, sound waste management and environmental hazards in the ship recycling facilities registered in the EU list of ship recycling facilities.[121]

Türkiye has been making efforts on transition to circular economy via reducing the amount of waste and diverting waste away from landfills via increasing better source separation, collection and recovery practices. Zero Waste Project was initiated in 2017 in support of the existing national waste management plan and long-established waste management legislation. The Zero Waste Regulation, the first legal regulation developed rapidly after the Zero Waste Project started, was published in 2019. For the purpose of the project, the regulation determines the procedures and principles for establishments to establish an effective zero waste management system and zero waste certification.

Starting from the public institutions, regulation aims the gradual installation of the Zero Waste Management System country-wide by 2023. In 2022, installation has been completed in 150,000 institutional buildings. In 5 years, 62.2 billion Turkish Liras of economic gain was achieved from the recycled waste, and 3.9 million tons of greenhouse gas emissions were prevented. Regulation also meets the requirement on National Waste Prevention Programmes which was added to the EU Waste Framework Directive (2008/98/EC) in 2018.[122]

In the same direction with the key action areas the EU's New Circular Economy Action Plan like "Less Waste More Value", it is aimed to use resources more efficiently across the country, prevent or minimize waste generation, and separate waste at source and recycle it in case of generation. The National Waste Management Action Plan (2023-2035) has been prepared within the framework of circular economy principles in order to manage the waste generated in our country in accordance with sustainable development goals. It includes the principles of efficient use of limited resources, prevention of waste generation by reducing waste generation, reuse of generated waste, inclusion in recycling and recovery processes, and disposal of non-recoverable wastes with appropriate methods. The Plan aims to recover 35%

[121] EC (2022) Türkiye 2022 Country Progress Report. Available at: https://www.ab.gov.tr/siteimages/resimler/T%C3%BCrkiye%20Report%202022%20(1)(2).pdf
[122] MoEUCC (2022) Available at: https://csb.gov.tr/bakan-kurum-depozito-iade-sistemini-turkiyenin-dort-bir-yaninda-milletimizin-hizmetine-sunacagiz-bakanlik-faaliyetleri-36258

of the municipal waste in 2023. In 2022, the recovery rate has reached to 30,13%. In addition, with the Regulation on Landfilling of Wastes published in the Official Gazette dated 26/03/2010 and numbered 27533, the principle of using physical, chemical, biological or thermal technologies compatible with the environment was emphasized in order to ensure the recycling of municipal wastes in accordance with the zero waste management system. It has been stated that the pre-treatment facilities and capacities where these technologies are used will be constituted in such a way that at least 60% of the collected municipal waste by weight can be recovered in 2035, and the target of reducing the amount of waste to be disposed of by regular landfill has been set.

Table 4: The Current Status of Turkish Legal Framework in comparison to EU Circular Economy Related Policies

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
Waste Framework Directive (WFD) (2008/98/EC) (Amended by the Directive 2018/851)	Preventing or reducing the generation of waste, the adverse impacts of the generation and management of waste and by reducing overall impacts of resource use and improving the efficiency of such use, which are crucial for the transition to a circular economy	Mostly Aligned	58%	2023	MoEUCC	Waste Management Regulation (02.04.2015/29314)
Waste Oils	Separate collection and treatment (regeneration)	Aligned			MoEUCC	Regulation on the Management of Waste Oils (21.12.2019/30985)
Construction and Demolition Waste	Selective demolition, reducing, preparing for re-use, recycling and other material recovery	Aligned			MoEUCC	Excavation, Construction and Demolition Waste Regulation (08.03.2004/25406) Regulation on Demolition of Buildings (13.10.2021/31627)
Bio-waste	Separating and recycling at source, or collecting separately and not mixing with other types of waste Encouraging the recycling, including composting and digestion Promoting the use of materials produced from bio-waste	Aligned			MoEUCC	Regulation on Landfilling of Wastes (26.03.2010/27533) Notice on Composting (05.03.2015/29286) Notice on Mechanical Separation, Bio-drying and Biomethanization Plants and Fermented Product Management (10.10.2015/29498) Zero Waste Regulation

[123] This assessment benefits from the Progress Monitoring Report presenting the progress on transposition and implementation of the EU environmental legislation in Türkiye in the period April 2016 – April 2021 and updated by the TAT analysis of the compliance level based on the scanning current legislation (mevzuat.gov.tr & csb.gov.tr)

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
						(12.07.2019/30829) Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices (31.12.2021)
Medical/Healthcare Waste	Separate collection, temporary storage, transportation and disposal of medical wastes originating from health institutions	Aligned			MoEUCC	Regulation on Control of Medical Waste (25.01.2017/29959)
Waste Prevention & Waste Prevention Programmes	Adopting waste prevention programmes including specific food waste prevention programmes	Partly Aligned			Presidency of the Republic of Türkiye MoEUCC	National Zero Waste Programme Regulation Amending the Zero Waste Regulation (09.10.2021/31623) Notice on Refused Derived Fuel, Additional Fuel and Alternative Raw Materials (20.06.2014/29036) Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices (31.12.2021)
Waste Management Plans	Establishment of one or more waste management plans covering the entire geographical territory Setting out an analysis of the current	Mostly Aligned			MoEUCC	National Waste Management Action Plan (2023-2035) Zero Waste Regulation (12.07.2019/30829) (Provincial

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
	waste management situation					Zero Waste Management Plans)
Extended Producer Responsibility	Taking legislative or non-legislative measures to ensure that any natural or legal person who professionally develops, manufactures, processes, treats, sells or imports products (producer of the product) has extended producer responsibility (preventing waste, taking measures to support reuse, recycling or recovery after generation of waste)	Mostly Aligned			MoEUCC	Waste Management Regulation (02.04.2015/29314) Recovery Contribution Fee (GEKAP) Regulation (31.12.2019/30995) Authorization Procedures and Principles (04.05.2015/B.09.0.ÇYG.0.10.04-145.07-5993)
By-product	Taking appropriate measures to ensure that a substance or object resulting from a production process the primary aim of which is not the production of that substance or object is considered not to be waste, but to be a by-product if it complies with certain conditions	Partly Aligned			MoEUCC	Waste Management Regulation (02.04.2015/29314)
End-of-Waste	Taking appropriate measures to ensure that waste which has undergone a	Not Aligned		Related Project [124,125]	MoEUCC	

[124] EBRD funded "End-of-Waste (EoW) Criteria and Streamline Secondary Raw Materials Concept in the Turkish Waste Legislation" Project was completed in 2017. The project aimed at developing a general methodology and guidelines for developing the end-of-waste criteria according to the Turkish context. This was carried out through policy dialogue to support the implementation of the TMM platform (known today as the Türkiye Circular Economy Platform). The Project, of which the MoEUCC is the beneficiary, started as of the end of September 2017. Within the scope of the project, firstly, the possibilities for harmonization of the EoW Regulations published by the European Commission, and then the harmonization of other JRC documents were evaluated. As a result of the study, a guide was prepared by the project team as a roadmap

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
	recycling or other recovery operation is considered to have ceased to be waste if it complies with certain conditions					
Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (1907/2006)	Managing the risks from chemicals and providing safety information on the substances	Mostly Aligned		Upon Accession	MoEUCC	Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) Regulation (23.06.2017/30105)
Restriction of Hazardous Substances Directive (2011/65/EU, RoHS II)	Restricting the use of hazardous substances in electrical and electronic equipment to protect human health and the environment, including ensuring environmentally friendly recycling and disposal of waste electrical and electronic equipment.	Aligned	100%	2022	MoEUCC	Regulation on the Restriction of the Use of Certain Harmful Substances in Electrical and Electronic Equipment (26.12.2022/32055)
Waste Electrical and Electronic Equipment Directive (2012/19/EU, WEEE)	Based on the principles of circular economy and resource efficiency, preventing the formation of waste electrical and electronic equipment (WEEE), collecting WEEE separately in	Partly Aligned	67%	2022	Ministry of Environment, Urbanisation and Climate	Regulation on the Management of Waste Electrical and Electronic Equipment (26.12.2022/32055)Zero Waste

for the transfer of the EoW criteria to the national legislation. The first meetings of the project with the relevant sector representatives, the evaluations of Türkiye and the EU acquis, and the survey studies for the facilities were carried out.

[125] EU funded Technical Assistance for Development of End-of-Waste Concept in Türkiye Project will be started in 2023. The overall objective of this project is to reduce depletion of natural resources used in production processes and amount of waste generated by promoting usage of secondary raw materials and enhancing market for high quality recyclables. In order to contribute to the sustainable development, the contract will include technical assistance and institutional capacity building activities for identification and effective implementation of end-of-waste criteria for specific waste streams. Mainly, current situation in Türkiye will be assessed by means of demanding sectors of waste streams such as metal, scrap, glass cullet, copper scrap, waste paper, biodegradable waste, waste plastic, textile waste etc. Besides, draft technical regulations on establishing criteria determining when certain types of materials cease to be waste, will be prepared compatible with Turkish context. Also guiding documents as draft regulations, roadmap and guidelines will be composed as the national strategy.

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
	cases where it cannot be prevented, and determining reuse, recycling, recovery methods, and targets to reduce the amount of WEEE to be disposed of. Management of WEEEs within a specific management system, including a zero waste management system, in a way that does not harm the environment and human health. Setting the framework for the implementation of expanded producer responsibility for electrical and electronic equipment manufacturers.				Change	Regulation (12.07.2019/30829) Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices (31.12.2021)
Waste Batteries and Accumulators Directive (2006/66/EC) (Amended by the Directive 2018/849)	Prohibiting the placing on the market of batteries or accumulators containing certain levels of hazardous substances separate collection and minimisation of the disposal as mixed municipal waste in order to achieve a high level of recycling for all waste batteries and accumulators.	Partly Aligned	46%	2023	MoEUCC MoIT	Waste Batteries and Accumulators Regulation (31.08.2004/25569) (23.12.2014/29214) Zero Waste Regulation (12.07.2019/30829) Procedures and Principles Regarding the Establishment and Operation of Waste Collection Centers and Zero Waste Practices (31.12.2021)
Packaging and Packaging Waste Directive (94/62/EC) (Amended by the	Preventing the production of packaging waste and, as additional fundamental principles, at reusing packaging, at recycling and other forms of recovering packaging waste and, therefore, at	Mostly Aligned	92.67%		MoEUCC	Packaging Waste Regulation (26.06.2021/31523) Procedures and Principles Regarding the Establishment and

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
Directive 2018/852)	reducing the final disposal of such waste in order to contribute to the transition towards a circular economy.					Operation of Waste Collection Centers and Zero Waste Practices (31.12.2021)
Lightweight Plastic Bags Directive (2015/720)	Reducing the consumption of lightweight plastic carrier bags by taking measures including the use of economic instruments such as pricing, taxes and levies and marketing restrictions such as bans	Partly Aligned			MoEUCC	Packaging Waste Regulation (26.06.2021/31523) Procedures and Principles on Plastic Bags Fees (09.01.2019/66745475-145.07-6267) (31.12.2021/66745475-145.07-6267-2599505) (07.12.2022/66745475-145.07-5218975)
Single Use Plastics (SUP) Directive (2019/904)	Prohibiting the placing in the market, reduction in the consumption and separate collection of the single-use plastic products	Partly Aligned	13%	Not determined	MoEUCC	Packaging Waste Regulation (26.06.2021/31523) Recovery Contribution Fee (GEKAP) Regulation (31.12.2019/30995) Procedures and Principles on Plastic Bags Fees (09.01.2019/66745475-145.07-6267) (31.12.2021/66745475-145.07-6267-2599505) (07.12.2022/66745475-145.07-5218975) Zero Waste Regulation (12.07.2019/30829) Procedures and Principles Regarding the Establishment and Operation of Waste Collection

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
						Centers and Zero Waste Practices (31.12.2021)
Landfill Directive (1999/31/EC)	Progressive reduction of landfilling of waste, in particular of waste that is suitable for recycling or other recovery Preventing or reducing as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from landfilling of waste, during the whole life-cycle of the landfill	Mostly Aligned	88%	31.12.2035	MoEUCC	Landfill Regulation (26.03.2010/27533)
Mining Waste Directive (2006/21/EC)	Preventing or reducing as far as possible any adverse effects on the environment, in particular water, air, soil, fauna and flora and landscape, and any resultant risks to human health, brought about as a result of the management of waste from the extractive industries	Partly Aligned	79%	2025	MoEUCC	Mining Waste Regulation (15.07.2015/29417)
End of Life Vehicles (ELV) Directive (2000/53/EC) (Amended by the Directive 2018/849)	Prevention of waste from vehicles and, in addition, reuse, recycling and other forms of recovery of end-of life vehicles and their components so as to reduce the disposal of waste	Mostly Aligned	98%	2023	MoEUCC	End of Life Vehicles (ELV) Regulation (30.12.2009/27448) End of Life Tyres Regulation (25.11.2006/26357)
PCB/PCT Directive	Ensuring a controlled disposal of PCBs,	Mostly	97%	2025	MoEUCC	Regulation on the Control of

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
96/59/EC (Amended by the Regulation (EC) No 596/2009)	decontamination or disposal of equipment containing PCBs and/or the disposal of used PCBs in order to eliminate them completely	Aligned				PCB/PCT (27.12.2007/26739)
Sewage Sludge Directive (86/278/EC)	Utilization of sewage sludge in agriculture in such a way as to prevent harmful effects on soil, vegetation, animals and man, thereby encouraging the correct use of such sewage sludge	Aligned	100%	-	MoEUCC MoAF	Urban and Municipal Sewage Sludge on Soil Regulation (03.08.2010/27661)
Ship Recycling Regulation (1257/2013)	Preventing, reducing, minimizing and, to the extent practicable, eliminate accidents, injuries and other adverse effects on human health and the environment caused by ship recycling	Partly Aligned		Not determined	MoTI MoEUCC	Ship Dismantling Regulation (08.08.2004/25396)
Waste Shipment Regulation (1013/2006)	Establishing procedures and control regimes for the shipment of waste, depending on the origin, destination and route of the shipment, the type of waste shipped and the type of treatment to be applied to the waste at its destination	Mostly Aligned[126]		Upon accession	MoEUCC MoT	Waste Management Regulation (02.04.2015/29314) Basel Convention Decision of the Council on the OECD Legal Instruments Control of Transboundary Movements of Wastes Destined for Recovery Operations Communique on the Transport of Waste on the Highway (20.03.2015/ 29301)

[126] Compliance with the recovery rates specified in Article 63 of the Waste Shipment Regulation will be harmonized upon accession.

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
Industrial Emissions Directive (IED) (2010/75/EU)	Preventing or, where that is not practicable, reducing emissions from industrial activities into air, water and land and preventing the generation of waste, in order to achieve a high level of protection of the environment taken as a whole	Partly Aligned	42%	Not determined	MoEUCC	Integrated Environmental Permits Regulation (Draft)[127] Integrated Pollution Prevention and Control Regulation (Draft)[128] Waste Incineration Regulation (06.10.2010/27721)
Eco-label Regulation (66/2010)	Establishment and application of the voluntary EU ecolabel scheme	Partly Aligned		Upon accession	MoEUCC Turkish Standards Institution (TSE)	Environmental Labelling Regulation (19.10.2018/30570) (national eco-labelling system established based on EN ISO 14024 type I standard)
Eco-design Directive (2009/125/EC)	Improving the environmental performance of products focusing on significant environmental aspects throughout the life cycle of the products	Aligned		-	MoIT	Eco-design Regulation (05.02.2022/31741)
Eco-Management and Audit Scheme (EMAS) Regulation (1221/2009)	Establishment and implementation of environmental management systems by organizations Evaluation and improvement of the environmental performances of the	Not Aligned		Upon accession	MoEUCC	-

[127] https://ippc.csb.gov.tr/entegre-cevre-izni-konusunda-turk-yasal-mevzuati-i-3219
[128] https://ippc.csb.gov.tr/entegre-cevre-izni-konusunda-turk-yasal-mevzuati-i-3219

EU Legislation	Legislation Requirements	Legislative Alignment[123]	Progress Monitoring Score	Estimated Alignment / Implementation Date	Responsible Institution	National Legislation
	organizations					
Strategic Environmental Assessment Directive (2001/42/EC)	Ensuring the integration of environmental considerations in the preparation and adoption of plans and programs to ensure a high level of environmental protection and promote sustainable development Environmental assessment of certain plans and programs that are likely to have significant impacts on the environment	Mostly Aligned	72%	Not determined	MoEUCC	Strategic Environmental Assessment Regulation (08.04.2017/30032)

3.2. Circularity of the Country and Selected Sectors

Material flow analysis is an analytical method to quantify flows and stocks of materials or substances in a system. Material flow accounting (MFA) is the study of material flows on a national or regional scale. It is therefore sometimes also referred to as regional, national or economy-wide material flow analysis.

Eurostat has been using economy-wide material flow accounts (EW-MFA) as a statistical accounting framework describing the physical interaction of the economy with the natural environment and the rest of the world economy in terms of flows of materials. EW-MFA is one of the modules included in Regulation (EU) No. 691/2011 on European environmental economic accounts. It contributes directly to the Union's policy priorities on circular economy, green growth, and resource productivity by providing important information and statistical indicators on material use. [129]

As a consequence of the circular economy efforts and long-term goals of the EU, Eurostat has undertaken the role of providing easy access to the relevant data for citizens and policy makers in order to support the monitoring progress. Monitoring allows the European Commission and other policy makers to keep track of the progress made and assess the effectiveness of their actions. It also provides a clear signal to economic actors such as business and consumers on ongoing trends.[130]

Eurostat has taken EW-MFA as the basis for its circularity assessment methodology and has extended it by including different sets of data in addition to the EW-MFA related data. The three main data sources used by Eurostat for circularity assessments are:

- Economy-wide material flow accounts (EW-MFA)
- International trade in goods statistics (ITGS)
- Waste Statistics Regulation (WstatR) data

EW-MFA related data provide an aggregate overview, in thousand tons per year, of the material flows into and out of an economy. EW-MFA covers solid, gaseous, and liquid materials, except for bulk flows of water and air. Eurostat undertakes annual data collections which are covered by Regulation (EU) 691/2011 consolidated version (Annex III). It consists of domestic extraction, physical imports, physical exports, direct material inputs, domestic material consumption, emissions to air, waste disposal to environment, emissions to water, dissipative use of products and dissipative losses. EW-MFA data which are downloadable from Eurostat's online database[131], consists of 4 types of material flows, namely biomass, metal, non-metalic minerals and fossil fuels and mineral. [132]

International trade in goods statistics provides the import and export data included in EW-MFA. It measures the quantity of goods traded between member states and goods traded by Member States with non-EU countries. ‘Goods’ means all movable property including

[129] https://ec.europa.eu/eurostat/documents/3859598/9117556/KS-GQ-18-006-EN-N.pdf/b621b8ce-2792-47ff-9d10-067d2b8aac4b?t=1537260841000
[130] https://ec.europa.eu/eurostat/web/circular-economy
[131] https://ec.europa.eu/eurostat/data/database?node_code=env_mrp
[132] https://ec.europa.eu/eurostat/web/environment/material-flows-and-resource-productivity

electricity. The main classification for the European ITGS is the combined nomenclature (CN) [133]. CN and the EW-MFA categories of material flows are aligned with each other.

Waste statistics are collected from member states in accordance with the Regulation (EC) No 2150/2002 on waste statistics (WStatR). This re requires member states to provide data every second year on the generation, recovery and disposal of waste. The WStatR data set used for circular economy calculations are "treatment of waste by waste category, hazardousness and waste management operations".[134] It consists of waste treatment, waste disposal (landfill, incineration, other) and waste recovery (recycling, backfilling, energy). As waste data from the Regulation on waste statistics are not reported by material flow, it is necessary to align the waste categories with the four main material flow categories according to the correspondence table provided.[135]

Based on this framework, Eurostat offers two statistical products within the scope of the circular economy monitoring framework, across the EU and for member states. These are (1) Sankey Diagram for material flows and (2) Circular rate (circular material utilization rate).

(1) Sankey Diagram for material flows

A sankey diagram is a visualization used to depict a flow from one set of values to another. The things being connected are called nodes and the connections are called links. Sankey diagrams are generally used for depicting material, energy or cost flows; they consist of directed arrows that have a width proportional to the flow quantity. Thus it shows not only values but also information about the structure and distribution of the defined system.

Sankey diagram of material flows presents the flows of:

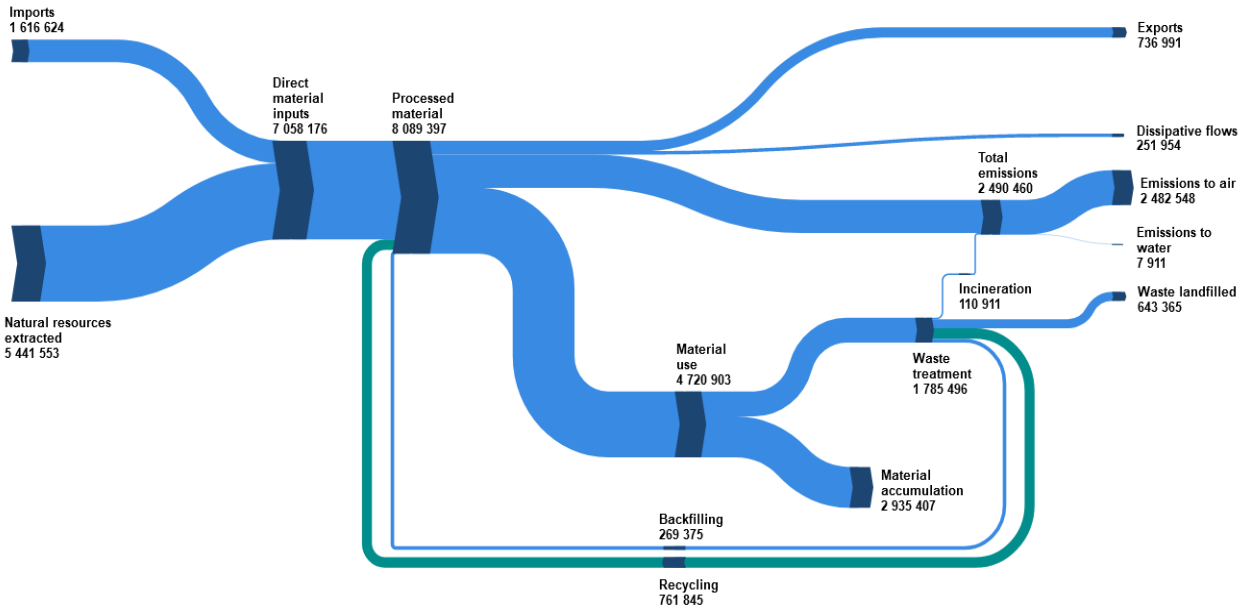
- materials extracted to make products or be used as a source of energy;
- products flowing in and out of economy;
- materials and products discarded into the environment as residuals, e.g. landfilled waste or air emissions, or recovered and fed back into the economy; this latter part closes the loop in the circular economy.

Infrastructure such as buildings, roads, and machinery are used over a long period during which they mount up in our societies, until they are eventually dismantled or taken out of use.

The Eurostat Sankey diagram of material flows shows the amounts of materials extracted, imported, recycled or disposed, as well as related emissions. The figure below shows the flows of material in the EU economy in 2021 in billion tons (GT). [136]

Figure 25 - Flows of Material in the EU Economy in 2021 (tonnes)[137]

[133] Glossary:Combined nomenclature (CN) - Statistics Explained (europa.eu)
[134] https://ec.europa.eu/eurostat/databrowser/view/env_wastrt/default/table?lang=en
[135] WStatR in MFA (europa.eu)
[136] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows&oldid=578489#Sankey_diagram_of_material_flows
[137] https://ec.europa.eu/eurostat/web/circular-economy/material-flow-diagram



These flows and quantities are analyzed and calculated on 4 main material types:

- Biomass
- Metal
- Non-metallic minerals
- Fossil fuels and materials

Looking at the core of the methodology, the aim is to make calculations by including all materials and products that enter the country's economy and are processed. Therefore, it is necessary to consider that all materials and products are included in these four main groups. Biomass and all materials and products of animal and plant origin are discussed under this heading. Fossil fuels and materials include both fossil fuels and materials and products derived from these fuel materials. For example, plastic is included in this group because it is a petroleum product.

In Annex A of the Economy-wide material flow accounts handbook published by Eurostat in 2018, MF1 shows the classifications under biomass and MF4 shows the classifications under fossil fuels and materials. “MF.1.1.9 Yarns” and “MF.1.5.4 Animal-based products (animal fibres and skins, furs, leather, etc.)” can be given as examples of the biomass group. “MF.4.3 Fossil-based products”, which includes polymer-based products and materials such as plastic and synthetic fibers, can be given as examples of fossil fuels and materials.[138]

Water and energy from renewable sources (solar, wind) are not included in Eurostat's Sankey Diagram method.[139] Each node and flow is explained below starting from the left hand side of the diagram:

[138] Eurostat (2018) Economy-wide material flow accounts handbook. Available at: https://ec.europa.eu/eurostat/web/products-manuals-and-guidelines/-/ks-gq-18-006
[139] European Commission (2022) Circular economy - material flows. Available at:. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows#Circularity_rate_.E2.80.93_methodology

- Imports are flows of products from the rest of the world economy into the domestic economy. This flow also includes waste sent for treatment (e.g. converted into secondary raw material) in the receiving country.
- Natural resources refer to the amount of material resources extracted from the natural environment by resident production units. This concept is called domestic extraction (DE).
- Direct material input (DMI) shows the direct input of material that is directly fed into the economy. It is the sum of domestic extraction and imports. DMI includes all materials of economic value, which are available for use in production (e.g. manufacture) and consumption (e.g. purchase of manufactured goods).
- Recycling of waste is defined in the Waste Framework Directive as any recovery operation by which waste materials are reprocessed into products, materials or substances whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations. As can be seen from the Sankey Diagram, it is the amount of secondary material obtained from wastes and diverted to the economy again. According to Eurostat, the input to recovery plants based on waste statistics is an acceptable proxy for the output from recovery plants i.e., the amount of secondary raw materials that result from these operations. This waste (code RCV_R) is approximated by the amount of hazardous and non-hazardous waste treated in recovery plants excluding amounts used for energy recovery and backfilling (recovery operations R2 to R11 as defined in the Waste Framework Directive 75/442/EEC) [140]
- Backfilling means a recovery operation where suitable waste is used for reclamation purposes in excavated areas or for engineering purposes in landscaping and where the waste is a substitute for non-waste materials, as given in the Commission Decision 2011/753/EU).
- Processed materials are defined as the sum of DMI and secondary material input, i.e. materials from recycling and backfilling.
- Domestic material consumption (DMC) measures the total amount of materials directly used by an economy and is defined as the annual quantity of raw materials extracted from the domestic territory, plus all physical imports minus all physical exports.
- Material accumulation corresponds to the difference between inputs and outputs in the economy in the form of e.g. buildings and infrastructures, machinery and durable goods. In EW-MFA this material accumulation is called net additions to stock.
- Exports are flows of products from the domestic economy into the rest of the world economy. This flow also includes waste sent for treatment (e.g. converted into secondary raw material).

[140] https://ec.europa.eu/eurostat/cache/metadata/en/env_ac_cur_esms.htm

- Emissions to air and emissions to water are the flows of solid, liquid and gaseous materials that are discharged into water bodies (rivers, seas, etc.) or emitted into the atmosphere;
- Dissipative flows are the materials which are dispersed into the environment -with current technology - as a deliberate or unavoidable consequence of product use, for example, mineral fertilisers and abrasion from tyres.
- Waste treatment node includes several outputs:
  - Incineration: waste is incinerated to extract energy. However, this also produces air emissions.
- Waste landfilled: disposal of waste including landfill and other operations (wild dumping, burial, injection into wells, etc.).
  - Recovery: operations involving waste materials being reprocessed into products, materials or substances to be reused either for their original purpose or other purposes. It includes recycling and backfilling operations.

Creating the economy wide Sankey diagram shows how the materials flow and if and to what extent the loop is closed. In Eurostat's Sankey diagram, only recycling and backfilling flows are deemed to close the loop of the circular economy.

(2) Circularity Rate

As there was no single summary indicator for the circularity of our economies at macroeconomic level, Eurostat developed an indicator for the EU monitoring framework for the circular economy. This indicator is called the 'circular material use rate' — referred to as the circularity rate — and it measures the contribution of recycled materials towards the overall use of materials. The circularity rate is the share of material resources used coming from recycled waste materials, thus saving primary raw materials from being extracted. A higher circularity rate means that more secondary materials replace primary raw materials, thus reducing the environmental impacts of extracting primary material.

It (CMU) is defined as the ratio of the circular use of materials (U) to an indicator of the overall material use (M):

$$CMU = U/M$$

with

$$U = RCV_R - IMPw + EXPw$$

with

RCV_R: Recycling, on the basis of the treatment operations defined in the Waste Framework Directive 2008/98/EC

IMP_W: amount of imported waste bound for recycling, and

EXP_W: amount of exported waste bound for recycling

and

$$M = DMC + U$$

Taking into consideration this methodology and the data required for its implementation, it was decided to develop the Sankey Diagram for Türkiye in general and to calculate the Circularity Rate in accordance. In parallel with this, it was decided to adapt the method and carry out sectoral studies with the data that can be obtained to make similar studies and calculations based on the priority of the value chains/sectors.

For this purpose, available data of TURKSTAT were assessed and additional and more detailed data were requested through the related institutional visits and the consequent official communications. It was seen that 2018 was the common year in terms of availability of different sets of data. As a result, the calculations were made using the three major sets of data of 2018 listed below:

- Material flow accounts, TURKSTAT
- Waste disposal and recovery facilities statistics, TURKSTAT
- Mass Balance System data, Ministry of Environment, Urbanization and Climate Change - Directorate General of Environmental Impact Assessment, Monitoring and Environmental Inspection (MoEUCC – DG EIA)

3.2.1. Circularity Assessment at National Scale

Most of the data required for the Sankey Diagram can be obtained from TURKSTAT's material flow accounts: Imports, natural resources, direct material input (DMI), domestic material consumption (DMC), exports, emissions to air and emissions to water and dissipative flows. For the waste treatment related data, two different sources were considered: TURKSTAT's waste disposal and recovery facilities statistics and Mass Balance System data provided by MoEUCC – DG EIA.

TURKSTAT's waste disposal and recovery facilities statistics: TURKSTAT indicates that this data is based on survey that was applied to licenced (or with temporary certificate of activity) waste disposal and recovery facilities as well as landfill, incineration and composting plants operated by or on behalf of municipalities. [141] This statistic provides incineration, waste landfilled and recycling data but does not include any backfilling data.

Table 5: TURKSTAT's Waste Disposal and Recovery Facilities Statistics

	tons
Waste treatment	104,452,603.0
Recycling [(a)]	**47,010,474.0**
Incineration (disposal and energy)	1,563,246.0
Waste landfilled	55,878,883.3

[(a)] Although the Sankey Diagram is based on "the amount of secondary material" obtained from wastes (output of recovery plants), Eurostat confirms that "the amount wastes processed for recycling" (input of recovery plants) is an acceptable proxy. Therefore, this data can be used for the recycling flow in the diagram.

[141] Atık Bertaraf ve Geri Kazanım Tesisleri İstatistikleri, 2018

Mass Balance System data provided by MoEUCC – DG EIA: This system includes all licenced facilities applying disposal and recovery processes. It includes the details of inputs (wastes and additives) and outputs (products, residues and process losses) for each facility, including the amounts and types of wastes/products and disposal/recovery methods (D's and R's). Although this provides quite an extensive data, there are certain issues which require attention while interpreting the data and additional efforts for obtaining the desired information:

- As the database includes only licenced facilities, total landfilled waste amount in this database does not refer to the whole amount at national level (less than TURKSTAT figure).
- Amount of wastes for which incineration (disposal and energy) and other disposal methods are applied is comparable with the TURKSTAT figure.
- As R12 is the exchange of waste for submission to any of the operations numbered R1 to R11, outputs of R12 are duplicated in the system.
- Residues are also duplicated in the system as residue of a facility/process is an input of another facility/process.
- As R1 means using the waste principally as a fuel or other means to generate energy, it should be excluded from recycling, however tyre pyrolysis which is listed as R1, generates secondary raw materials such as carbon black and steel wire, that fraction should be considered in the recycling.

In accordance with these limitations, an approach was developed for estimating the amount of total amount of recycled wastes:

Table 6: Estimated Amount of Recycled Wastes in Türkiye

	tons
Total waste input	101,651,809.2
Total waste input disposed (D's)	32,282,277.1
Total waste input recovered for energy (R1 except for carbon black and steel wire production)	689,815.8
Correction for R12 related duplication (exchange of waste for submission to the operations R1 to R11)	15,376,589.5
Correction for the residues related duplication [(a)]	7,727,200.9
Estimation for total amount of waste inputs recycled [(b)]	**> 45,575,925.8**

[(a)] D's, R12 and R1 (except for pyrolysis connected material products) are excluded.
[(b)] It is not possible to assess how much of the residues should be subtracted from the total amount of waste input. This is the amount if all residues are subtracted. The exact value should be higher than this.

On the other hand, as this database also includes the products of the recovery plants, it could be possible to calculate directly the amount of secondary raw materials obtained from wastes which is in fact the actual metric that the Sankey Diagram is based on. But there are issues associated with this approach as well. In addition to the above-listed items which need to be treated appropriately, additives, which have a significant amount, should also be taken into consideration while calculating the amount of products coming from wastes only.

Table 7: Calculated Amount of Secondary Raw Materials in Türkiye

	tons
Total product amount [(a)]	90,758,668.3
Total additives [(b)]	58,588,696.7
Loss from additives during the process [(c)]	11,204,655.0
Residues from additives [(d)]	579,967.2
Secondary raw materials	**43,954,593.7**

[(a)] D's, R12 and R1 (except for pyrolysis connected material products) are excluded.
[(b)] Majority of the additives are the raw materials used by cement, iron and steel, etc. plants.
[(c)] D's, R12 and R1 (except for pyrolysis connected material products) are excluded.
[(d)] Based on the recovery, waste and facility types, approximately 7.5% of the total residues was estimated to come from additives.

Assessing the three tables presented above, it can be seen that the values are comparable and compatible with each other. TURKSTAT data for "recycled waste amount" is 47.0 MT while a detailed (but a bit complex) analysis of the Mass Balance System data provided by MoEUCC – DG EIA indicates that total amount of wastes recycled should be higher than 45.6 MT which is line with the TURKSTAT value. Based on this, sticking to the TURKSTAT values for waste treatment values including recycling makes sense.

On the other hand, amount of secondary raw materials obtained by recycling (output of recycling plants) has been estimated as 44,0 MT. This value is the actual value to be used in the Sankey Diagram in accordance with the material flow approach, however Eurostat uses "the amount wastes processed for recycling" (input of recovery plants) as an acceptable proxy, due to the availability of such data.

In light of these assessments, it has been decided to conduct two alternative calculations for Sankey Diagram[142,143] and Circularity Rate[144].

Alternative 1: "Material flow accounts" and "waste disposal and recovery statistics" from TURKSTAT are used. Recycling is represented by the amount of wastes recycled as an approach adopted by Eurostat as well. Relevant calculations are shown in Table 8.

[142] https://ec.europa.eu/eurostat/documents/3859598/9117556/KS-GQ-18-006-EN-N.pdf/b621b8ce-2792-47ff-9d10-067d2b8aac4b?t=1537260841000
[143] https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Circular_economy_-_material_flows#Sankey_diagram_of_material_flows
[144] https://ec.europa.eu/eurostat/documents/3859598/9407565/KS-FT-18-009-EN-N.pdf/b8efd42b-b1b8-41ea-aaa0-45e127ad2e3f?t=1543310039000

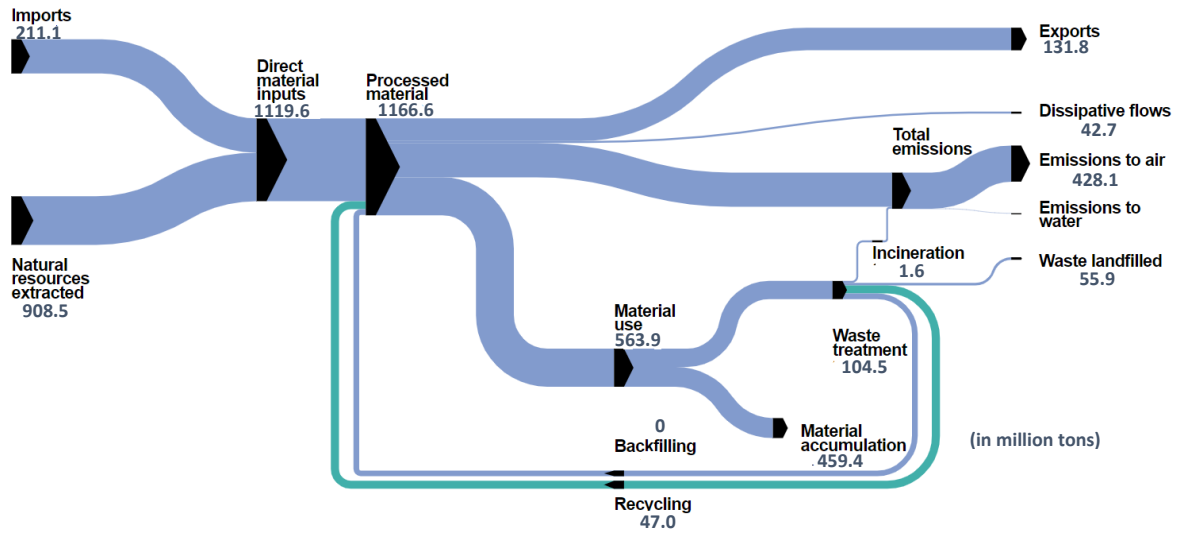
Table 8: Material Flow Accounts for Türkiye (Alternative 1)

ciye - 2018)	ton	million tons (MT)
Imported (I)	**211.051.230,0**	**211,05**
Extracted natural resource (Domestic production) (CE)	**908.533.524,7**	**908,53**
Direct material input (DMI)	1.119.584.754,7	**1119,58**
Recycled material	**47.010.474,0**	**47,01**
Used as backfilling	**0,0**	**0,00**
Processed material	1.166.595.228,7	**1166,60**
Exported (E)	**131.808.620,0**	**131,81**
Domestic material consumption	987.776.134,7	**987,78**
Overall emissions to air	**428.144.118,0**	**428,14**
Waste to the environment	**86.670,0**	**0,09**
Emissions to water	**0,0**	**0,00**
Material released into water	**624,0**	**0,00**
Dissipative material (in use)	**42.674.266,0**	**42,67**
Dissipative material (loss)	**9.208,0**	**0,01**
Domestic process residues	470.914.886,0	**470,91**
Overall emissions	428.231.412,0	**428,23**
Material use	563.871.722,7	**563,87**
Incinerated waste (disposal + energy)	**1.563.245,9**	**1,56**
Waste landfilled	**55.878.883,3**	**55,88**
Waste treatment	104.452.603,2	**104,45**
Material accumulation	459.419.119,5	**459,42**

	TURKSTAT Material Flow Calculations Data
	TURKSTAT Domestic Process Outputs
	TURKSTAT Waste incineration and recovery facilities statistics
	Calculated value
	There is no data. It is taken as zero.
dark color	Value from datasets
other	calculated

TURKSTAT Material Flow Calculations Data, TURKSTAT Domestic Process Outputs and TURKSTAT Waste incineration and recovery facilities statistics, which are stated to be used in these calculations, are given in Annex 4.

Figure 26 - Sankey Diagram of MFA for Türkiye (Alternative 1)



Since there is no data in any data source in these calculations, the backfilling was accepted as zero. This can be considered an area for improvement within the waste-related data collection framework. To have an idea on the impact of this assumption, the recycling to backfilling ratio of the EU has been taken and the calculations have been implemented accordingly. The backfilling would be 14.1 MT, this amount would add to processed material, material use and waste treatment amounts also; other values would remain the same.

As given in the relevant formula, using the related values given in the Sankey Diagram and making the corrections for imported and exported wastes, circularity rate of Türkiye for 2018 has been calculated as shown in Table 9.

Table 9: Circularity Rate of Türkiye (2018)

	thousand ton
Recycled material (R2-R11) (RCVR)	47010,47
Amount of imported waste bound for recovery (IMPw)	0,04
Amount of exported waste bound for recovery (EXPw)	0,01
Circular use of materials (U)	47.010,4
Domestic material consumption (DMC)	987776,13
Overall material usage (M)	1.034.786,6
	%
Circular Material Use Rate (CMU)	4,54

	TURKSTAT Waste incineration and recovery facilities statistics
	TURKSTAT Import Export Data
	Calculated value
	TURKSTAT Material Flow Calculation Data

TURKSTAT Material Flow Calculations Data, TURKSTAT Domestic Process Outputs and TURKSTAT Waste incineration and recovery facilities statistics, which are stated to be used in these calculations, are given in Annex 4.

Since the backfilling amount is not included in the circularity rate calculations, taking this value as zero does not affect the circularity rate.

Alternative 2: "Material flow accounts" and "waste disposal and recovery statistics" from TURKSTAT and Mass Balance System data from MoEUCC – DG EIA are used. Recycling is represented by the amount of secondary raw materials obtained from waste recycling, which is the actual data to be used in the MFA approach. Relevant calculations are shown in Table 7.

Table 10: Material Flow Accounts for Türkiye (Alternative 2)

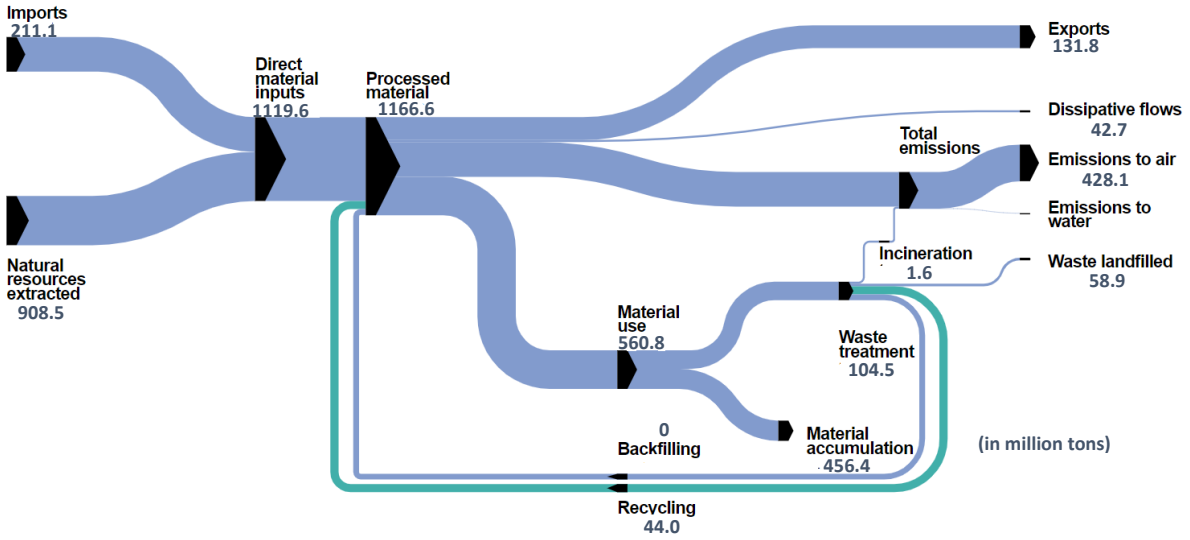
1	**Imported (I)**	211,051,230.0	211.05
2	**Extracted natural resource (Domestic production) (CE)**	908,533,524.7	908.53
3	Direct material input (DMI)	1,119,584,754.7	1119.58
4	**Recycled material**	43,954,593.7	43.95
5	**Used as backfilling**	0.0	0.00
6	Processed material	1,163,539,348.4	1163.54
7	**Exported (E)**	131,808,620.0	131.81
8	Domestic material consumption	987,776,134.7	987.78
9	**Overall emissions to air**	428,144,118.0	428.14
10	**Waste to the environment**	86,670.0	0.09
11	**Emissions to water**	0.0	0.00
12	**Material released into water**	624.0	0.00
13	**Dissipative material (in use)**	42,674,266.0	42.67
14	**Dissipative material (loss)**	9,208.0	0.01
15	Domestic process residues	470,914,886.0	470.91
16	Overall emissions	428,231,412.0	428.23
17	Material use	560,815,842.4	560.82
18	**Incinerated waste (disposal + energy)**	1,563,245.9	1.56
19	**Waste landfilled**	58,934,763.6	58.93
20	Waste treatment	104,452,603.2	104.45
21	Material accumulation	456,363,239.2	456.36

	TURKSTAT Domestic Process Outputs
	TURKSTAT Waste incineration and recovery facilities statistics
	Calculated value
	There is no data. It is taken as zero.
	MoEUCC Mass Balance Data
	TURKSTAT Waste incineration and recovery facilities Statistics and MoEUCC Mass Balance Data (assuming recycling output waste goes to landfill)

dark color	Value from datasets
other	calculated

The associated Sankey Diagram is shown in the Figure below.

Figure 27: Sankey Diagram of MFA for Türkiye (Alternative 2)



Using the related values given in the Sankey Diagram and making the corrections for imported and exported wastes, circularity rate of Türkiye for 2018 has been calculated with this approach as well, as shown in Table 8.

Table 11: Circularity Rate of Türkiye (2018)

	Thousand tons		
Recycled material (R2-R11) (RCVR)	**43954.59**		TURKSTAT Waste incineration and recovery facilities statistics
Amount of imported waste bound for recovery (IMPw)	**0.04**		TURKSTAT Import Export Data
Amount of exported waste bound for recovery (EXPw)	**0.01**		Calculated value
Circular use of materials (U)	43,954.6		TURKSTAT Material Flow Calculation Data
Domestic material consumption (DMC)	**987776.13**		
Overall material usage (M)	1,031,730.7		
	%		
Circular Material Use Rate (CMU)	**4.26**		

3.2.2. Circularity Assessment at Sectoral Scale

Assessments and calculations are currently being conducted for calculating the circularity rates of four main material flows (biomass, metal, non-metallic minerals and fossil fuels/materials) as well as the specific sectors identified.

3.3. Efforts by Key Stakeholders

Based on the previous information gathered from the institutional visits and market survey and taking into consideration the main headings of the EU Circular Economy Action Plan, efforts of the relevant stakeholders, including the main approach, activities and projects are presented in the following table.

Table 12: Efforts Related to the Circular Economy by Key Stakeholders in Türkiye

	Circular Economy Related Approaches and Activities	Circular Economy Related Projects
GENERAL	**The Ministry of Environment, Urbanization and Climate Change (MoEUCC)** has ensured that the concept of circular economy is included in the Environment Law. In this context, issues related to circular economy such as the dissemination of zero waste, the application of circular economy principles, the promotion of waste recovery and reuse of treated wastewater, the reduction of the use of plastic bags or packaging and disposable materials, and the application of deposits were emphasized. Among the duties of the MoEUCC are determining policies and strategies for circular economy in the 2022-2023 Strategic Plan of the MoEUCC, cleaner production and integrated pollution prevention studies, minimizing waste at source, classifying, collecting, transporting, temporary storage, recycling and reuse. Circular economy is one of the priority agendas of the Circular Economy and Waste Management Department, which is the beneficiary of this project, and the Circular Economy Policies Branch Directorate affiliated to this department, and a significant part of the studies are directly related to this issue. From other units/departments, **MoEUCC - Directorate General of Environmental Management, Air Management Department,** Management Department, especially within the scope of the duties and responsibilities of the Sustainability Strategy and Zero Pollution Branch Directorate, works on sustainable and green development topics such as the Green Deal, sustainable consumption and production, integrated pollution prevention and control, best available techniques,	**The Ministry of Environment, Urbanization and Climate Change, Circular Economy and Waste Management Office,** Technical Support Project for the Assessment of Türkiye's Potential for Transition to Circular Economy **The Ministry of Commerce, General Directorate of International Agreements and EU,** "Green Development in Türkiye and Sustainable Recovery Consultancy and Capacity Development Cooperation Program" **The Ministry of Industry and Technology, Directorate General of Strategic Researches and Productivity**, "Project to Develop the Database of National Life Cycle Assessment (UYDD)" **Ministry of Industry and Technology, General Directorate for Industrial Zones,** "Development of Green OSB Frame for Türkiye"

	clean production, eco-efficiency, zero pollution, green entrepreneurship, industrial symbiosis, waste heat utilization, eco-innovation, sustainability and green economy. The department carries out policy, strategy and legislation development processes in related fields. **The Ministry of Industry and Technology, Strategic Research and Efficiency Department**, in line with the "sustainable, environmentally and socially sensitive industry" approach of the Ministry of Industry and Technology, it works on resource efficiency, industrial symbiosis and life cycle assessment. **The Ministry of Agriculture and Forestry, General Directorate of Water Management**-carries out studies on Türkiye's water footprint assessment regarding the efficient use of water, sectoral water footprint calculation on the basis of a basin, reduction of blue and gray water footprint, water efficiency in industry, dissemination of alternative water resources and circular economy in the context of the evaluation of treated wastewater. **The Ministry of Trade, as the General Directorate for International Agreements and EU**, has been following the process closely since the publication of the Green Deal, ensuring the coordination for the creation of the Green Deal Action Plan, and the efforts to inform the stakeholders and build the necessary capabilities are continuing. In this context, possible risks for exporters are on the agenda of the Ministry of Trade in line with the EU Circular Economy Action Plan. Negotiation processes in related fields are also continuing. The Ministry contributes to the circular economy concept within the scope of the "Green Growth and Sustainable Recovery Consultancy and Capacity	

	Building Cooperation Program in Türkiye" carried out in cooperation with the World Bank under the coordination of the Turkish Presidency's Strategy and Budget Department. **The Presidency of Türkiye, Strategy and Budget Office** puts the circular economy on its agenda in connection with the objectives of sustainability, sustainable development, and, especially within the scope of waste management. It is foreseen that the circular economy will be directly included in the new development plan process. **Marmara Municipalities Union (MBB)** includes the concept of circular economy in its activities in line with its vision, mission, and strategic plan. The Center for Sustainability and Climate Change, which has a structure that includes circular economy-oriented studies, has been an important step. It is working towards increasing the awareness and capacity of the municipalities affiliated with the institution, which has already adopted the circular economy concept. It develops policy and legislative proposals in order to contribute to the development of sustainable and high-quality cities in the circular economy, carries out awareness and training activities, and carries out projects with municipalities on the issues of effective waste management, renewable energy resources, energy efficiency, and climate change. It contributes to the circular economy practice with these studies. **Turkish Standards Institution (TSE)** follows international developments and related standards related to the circular economy and carries out its activities in line with the demands. Currently, there are various standards related to the circular economy, especially for secondary raw materials. In addition, many standards originating from	

	ISO and CEN, which support the 12th Sustainable Development Goal "Sustainable Production and Consumption", are associated with the circular economy. **Turkish Industry and Business Association (TÜSİAD)** integrates the circular economy into its activities within the framework of the sustainable environment approach in its charter. "What will the European Green Consensus Circular Economy Action Plan Bring to the Turkish Business World?" report, published by TUSIAD in 2021, has been an important step in the evaluation of key value chains. The Attitude Paper on Transition to the Circular Economy in Türkiye, published in 2021, includes examples as well as recommendations for Türkiye's transition to a circular economy. Member companies of TÜSİAD such as Tüpraş, Sun Tekstil, Arçelik, Assan Aluminum, Assan Hanil, and İspak Ambalaj, shared their exemplary practices in the fields of industrial symbiosis, recycling of food residues, reduction of plastic use, in-plant recycling and use of secondary raw materials, product lightening, and environmentally friendly products. **İstanbul Chamber of Industry (ISO)** considers the risks that will pose for our country and the opportunities that new systems are likely to arise in international trade, within the framework of climate change and sustainability. It has determined one of the strategic areas that it focuses on within the scope of its vision as the circular economy. It carries out studies on informing and raising awareness of all institutions and organizations in our country, on issues such as resource efficiency in the value chain, sustainability, and clean production, which are among the objectives of the EU Green Deal, on the circular economy, and on creating	

	resources for individuals and institutions who want to act. In cooperation with SKD Türkiye, it carries out the Circular Economy and Resource Efficiency Platform Project supported by the Istanbul Development Agency. Sustainable Industry and circular economy, which is in line with the UN Sustainable Development Goals (SDGs), is at the forefront of the work carried out by the **Business Council for Sustainable Development Türkiye (SKD TÜRKIYE)** by accepting only institutional membership. With the EBRD funding support, SKD Türkiye launched the Türkiye Materials Marketplace project, a cloud-based platform designed to support the inter-industry reuse of materials in 2016, in order to raise awareness about the circular economy for the first time in our country and accelerate the transition to this new era. By establishing the Circular Economy Platform of Türkiye in 2020, it is aimed to meet the information/resource needs of companies in our country in the field of circular economy, offer measurement mechanisms, provide technical grant support, and develop cooperation opportunities. SKD Türkiye offers a knowledge hub, an e-commerce platform (TMM), measurement tools, training, financial opportunities, and consultancy services for companies that really want to accelerate their transition to the circular economy. Various projects for the circular economy are carried out in cooperation with different institutions. **Technology Development Foundation of Türkiye (TTGV)** has built an infrastructure in the field of circular economy with the projects and supports it has previously carried out in the fields of industrial symbiosis and resource efficiency. Recently, it has decided to refocus on these	

	issues and developed the Ekoreka program for EU CEAP sectors. In this context, they analyze the current situation in companies selected from Manisa OIZ, İzmir Atatürk OIZ and Ankara Sincan OIZ. In addition, topics such as climate technologies, and soil and water sustainability are also on their agenda.	
A SUSTAINABLE PRODUCT POLICY FRAMEWORK	**The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of Environmental Qualification Services,** The department was established to promote products/services with reduced environmental impacts from the raw material procurement process to the disposal process and to provide accurate, non-misleading, scientifically-based information to consumers. It applies the environmental label system and the Environmental Label Regulation, which is a voluntary reward system for products with high environmental performance and sensitive to human health. In this context, areas such as waste prevention in products and services, use of recycled raw materials, suitability for use to increase the shelf life and quality of the product, waste recovery, use of recycled packaging, waste minimization and not using disposable products are considered. **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Chemicals Management Department,** serves a common purpose with the circular economy within the scope of its activities aimed at reducing the use of harmful chemicals in the production of chemicals and mixtures.	**The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Air Management,** Project to Specify Türkiye's Industrial Emission Strategy within the Scope of Preventing and Controlling Integrated Pollution (DIES) **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Air Management,** Sustainable Consumption and Production National Action Plan (STÜ-UEP) and Road Map **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of Environment Competency Services,** Service Procurement for the Development of Türkiye Environment Label System **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of Environment Competency Services,** Project to Determine National Environment Labels in Self Care and Cosmetics Sector with Life Cycle

		Practices **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of Environment Competency Services,** Service Procurement for the Criteria Determination Studies in Four Product Groups within the Scope of Türkiye Environment Label System (TÇES) Development Project" **The Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of Environment Competency Services,** Service Procurement Additional Protocol for the Criteria Determination Studies within the Scope of Türkiye Environment Label System (TÇES) Development Project **Public Procurement Authority, Public Procurement Authority**, Green Purchasing Project **The Ministry of Energy and Natural Resources, Directorate of Energy Efficiency and Environment Department,** Project to Increase Energy Efficiency in Government Buildings **Ministry of Environment, Urbanization and Climate Change, Department of Environment Competency Services,** Project to Form Environment Labels in Tourist Accommodation Facilities Group within the scope of Sustainable Practice of Türkiye Environment Labels and Expanding Awareness

KEY PRODUCT VALUE CHAINS - Electronics and ICT	**Lighting Equipment Manufacturers Association (AGID)** is a structure built to manage the obligations imposed by the WEEE regulation on manufacturers/importers under a common organization. Establishing a sustainable e-waste collection system and ensuring the recycling of collected e-waste in the most efficient systems is the main goal by increasing the level of awareness about e-waste. Within the scope of its activities, the association carries out activities to increase awareness of lighting products and to enable them to act on integrating the circular economy and its requirements into all processes, from design to sales and after-sales. **Turkish Industry and Business Association (TUBİSAD)** establishes systems in our country to reveal the economic value of rapidly consumed information equipment and televisions with environmentalist approaches and carries out its activities as a leading institution in WEEE management. Increasing the awareness of the public throughout the country, moving the WEEE collection amounts to the rates within the scope of the regulation, considering the sustainable and environmental values, documenting and reporting that the collected WEEEs are recycled to certain standards and criteria are among TUBISAD's duties and are associated with the circular economy.	**The Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Mobile Digital Shaft Log Measurement Systems Research and Development Project (Local and National Device Production) **The Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Magnetometer Research and Development Project (Local and National Device Production) **The Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** IP Device Research and Development Project (Local and National Device Production) **The Ministry of Energy and Natural Resources, Directorate of Energy Efficiency and Environment Department,** Project to Increase Energy Efficiency and Awareness in the Household (Components for green purchasing of the government is also included in the project)
KEY PRODUCT VALUE CHAINS - Batteries and vehicles	**Automotive Manufacturers Association (OSD)** carries out studies for the harmony and competitiveness of the industry it represents, with the new rules it will bring with the European Green Consensus and Circular Economy Action Plan thanks to its efforts to develop policies, to	

	inform and guide relevant institutions in this direction, and to take part in policy implementations in order to increase national and international competitiveness in line with the common interests of the automotive industry in Türkiye, which it represents. **Portable Battery Manufacturers and Importers Association (TAP)** aims to establish efficient collection policies throughout the country so that all waste batteries collected can be evaluated in a circular economy. In this context, while the collected waste batteries are separated according to their types, the values obtained are supported to the circular economy. With its memberships at the international level on the circular economy, it develops exemplary studies within the scope of circular economy by establishing consensus with other countries and contributes to the circular economy by transferring its experiences to the projects carried out in our country. The efforts to minimize the environmental damage of end-of-life tires in the **Tyre Industrialists Association (LASDER)** regulation are included in the circular economy. In this context, the circular economy approach is positioned between waste producers and recycling/recovery companies to manage the processes after the tire becomes waste. Due to its position, it carries out information and dissemination activities related to the circular economy. **Turkish Oil Industry Association (PETDER)** carries out its activities to fulfil the producers' responsibility on the value chain of petroleum products (fuel oil, lubricating oils, LPG) from production to consumption. In accordance with its statute, it works to ensure that its members fulfil their legal obligations regarding the use of petroleum products	

	and mineral oils and the proper collection, transportation, storage and disposal of wastes arising after use.	
KEY PRODUCT VALUE CHAINS - Packaging	**Turkish Environment Agency,** the mission of the agency includes the establishment, operation, monitoring and control of deposit management systems at national level in line with the zero waste approach, increasing resource efficiency and reducing carbon intensity, and the institution aims to contribute to the transition to a circular economy. Within the scope of the **Turkish Packaging Manufacturers Association (ASD)** 2030 vision, "circular economy, recycling, climate change, carbon footprint, and European Green Deal" is the main agenda topic and is embraced by senior management. The efforts of ASD members to reduce the hazardous materials contained in the packaging, to produce from renewable materials, and to recycle packaging waste into the economy coincide with the principles of the circular economy.	**The Ministry of Environment, Urbanization and Climate Change, Directorate of Türkiye Environment Agency,** Research and Development Project to Determine the Approximate Cost of the Compulsory Deposit Management System and Prepare the Guide and Practical Guideline to Determine and Implement the Fees and Guarantees to be Applied Within the System **The Ministry of Environment, Urbanization and Climate Change, Directorate of Türkiye Environment Agency,** Research and Development Project to Determine the Minimum Standards for Public Return Points/ Centers and Verification Facilities and Determine the Investment and Operation Requirements with National, Regional and Local Numbers and Capacities **The Ministry of Environment, Urbanization and Climate Change, Directorate of Türkiye Environment Agency,** Project "to Determine and Develop the Environment, Strategy and Policies Suitable for Transition Process to Deposit Management System" in Kızılcahamam county.
KEY PRODUCT VALUE CHAINS - Plastics	**MoEUCC - Marine and Coastal Management Department,** within the framework of its duties for the protection of sea and coastal waters and their environment, the approach of preventing marine pollution with an integrated and ecosystem-oriented approach comes to the fore. In this context, the prevention of marine litter, which is one of the most important topics of the circular economy	

	agenda, is also one of the main working areas of the Department of Marine and Coastal Management. In this context, considering that 80% of marine pollution is of terrestrial origin, the focus is on the reduction of all kinds of waste/wastewater that reaches/may reach the seas within the scope of activities such as reducing waste at its source, reuse, recycling, clean production, etc. As an NGO working with a focus on the sea and its environment within the body of **TURMEPA (DenizTemiz Association) UNEP/MAP,** it mainly carries out awareness and training activities. The "Zero Waste Blue" project, which was initiated within the scope of the Zero Waste Movement, focuses on sustainability, climate change, marine ecosystem, and recycling with marine-oriented environmental training. It carries out its awareness-raising activities by including information on the circular economy for all age groups. With its waste collection boats, TURMEPA collects gray and black wastewater from boats and yachts in the open sea. It is stated that after these wastes are treated in wastewater treatment plants, they are reused for park-garden irrigation or as utility water. **Turkish Plastics Industry Foundation (PAGEV)** has a structure representing most of the plastics industry value chain. The circular economy has been on their agenda for a long time, as they closely follow sectoral developments in the EU. It provides the transfer of new technologies and opportunities to increase the capacities of its members, especially by concentrating on the production and design phases.	
KEY PRODUCT	**İstanbul Ready Made Garment and Apparel Exporters'**	**Ministry of Environment, Urbanization and Climate**

VALUE CHAINS - Textiles	**Association (İHKİB)** is the most important exporter union that operates to increase the export of ready-made clothing and apparel and represents 70% of the sector. In the transition to the circular economy, studies such as developing projects and organizing events are carried out to increase the institutional capacities, awareness, and activities of the companies. With the circular economy taking place in EU policies and strategies, and within the framework of the importance of the EU market in ready-made clothing and apparel exports, İHKİB carries out its studies on circular economy issues. Within the scope of strategy development, studies on digital product passport, expanded producer responsibility, digitalization, and environmentally friendly production technologies, which are important for the circular economy, are carried out and a road map is prepared. **Turkish Clothing Manufacturers Association (TGSD)** represents a member profile that covers half of the companies in the textile supply chain and especially exporting companies. It follows the principles of responsible business and standards, as well as the EU Green Deal and issues related to the circular economy. Studies on the green transformation of the industry, activities to measure and reduce the product carbon footprint, life cycle analysis studies, research on sustainable and alternative raw material use, recycling/recovery of products, and obtaining secondary raw materials are carried out. The circular economy issue has been discussed for a long time in education and awareness studies and the projects are carried out for the capacity development of the members.	**Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project for Clean Production Practices in Textile Sector
KEY PRODUCT	**MoEUCC, Directorate General of Vocational Services -**	**Ministry of Environment, Urbanization and Climate**

VALUE CHAINS - Construction and buildings	**Department Building Materials,** it ensures compliance with EU standards regarding building standards. Relevant developments within the scope of the circular economy in the EU are followed. **MoEUCC, Directorate General of Vocational Services - Department of Energy Efficiency and Installation,** the department states that energy efficiency and emission reduction in the construction sector and buildings are indirectly linked to the circular economy. In this context, encouraging the use of local architecture and local materials in buildings and the application of advanced construction technologies are issues that can intersect with the circular economy. The purpose of the Green Certificate Regulation for Buildings and Settlements is to develop evaluation and certification systems in order to reduce the negative effects of buildings and settlements on the environment by using natural resources and energy efficiently. **MoEUCC, Directorate General for Infrastructure and Urban Transformation Services- Department of Transformation Areas**, Emphasizing the importance of the management of construction and demolition wastes arising from construction activities within the scope of urban transformation, methodology development studies are carried out to carry out urban transformation applications where natural resource consumption is reduced, recycling is ensured, wastes are reintroduced into the economy, the value of products, materials and resources is kept in the economy as long as possible and the amount of waste is low. **The Union of Municipalities of Türkiye (TBB)** evaluates the connection of municipalities with the circular economy	**Change, Directorate General of Environmental Management, Department of Air Management,** Support to Develop the Road Map to Integrate Sustainable Consumption and Production into Housing and Building Sector **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Air Management,** Project to prepare National STÜ Action Plan including the STÜ models containing four main sectors “food, fishery and agriculture”, “housing and building”, “consumption goods” and “tourism”

	within the scope of waste management. Particularly with regard to the construction and demolition processes, the role of municipalities is related to the management of waste. It is possible to separate and use the iron, doors, and windows in the construction waste. Among the practices of municipalities that can be considered as circular business models, there are examples such as second-hand clothes banks and directing used clothes to those in need, zero waste markets, making pickles or compost from organic wastes of the marketplace and market, making cat and dog food from leftovers, repair workshops, and renting construction equipment. As a structure that represents most of the cement producers, **Turkish Cement Manufacturers' Association (TÜRKÇİMENTO)** closely follows the issues related to the Green Deal and the circular economy. The circular economy for the sector is implemented within the framework of the use of alternative raw materials and the production of green cement (CEM V). Currently, approximately 1-2% of the total input in cement production is provided from wastes as an alternative raw material. Although Refused Derived Fuel (RDF) is not included in the framework of the circular economy, it is an issue that comes to the fore in this context. TÜRKÇİMENTO took part in the project of Fostering Industrial Symbiosis for a Sustainable Resource Intensive Industry Across the Extended Construction Value Chain (FISSAC) supported within the scope of EU Horizon 2020. **The Turkish Contractors Association** stated that they are working to raise awareness in the sector in line with the importance of the circular economy and that they aim to	

	build a bridge between the sector and regulatory institutions. They underlined that they have a holistic perspective from green building design to material production within the scope of sustainability.	
KEY PRODUCT VALUE CHAINS - Food, water nutrients	Within the scope of the research activities of **the Ministry of Agriculture and Forestry** in food, water, agriculture, and related fields, many issues intersect with the circular economy. Among the projects and studies carried out by the Ministry, the Evaluation of Reuse Alternatives of Used Water, Industrial Water Efficiency according to NACE codes, and Türkiye's National Roadmap towards Sustainable Food Systems, Türkiye's National Strategy Document and Action Plan on the Prevention, Reduction and Management of Food Loss and Waste draw attention. Supports provided to farmers include organic and organo-mineral fertilizer support. Good agricultural and organic farming practices carried out by **the Ministry of Agriculture and Forestry, General Directorate Of Plant Production, the Good Agricultural Practices and Organic Agriculture Department** in line with climate change, environment and sustainability goals, support the circular economy principles. In this context, certification is made on the basis of the determined control points and support is given to the producers. The mission of the **Ministry of Agriculture and Forestry, the General Directorate of Agricultural Research and Policy (TAGEM)** is to ensure the sustainable use of agricultural and ecological resources. As emphasized by the Department of Agricultural Economics and Project Management, within the scope of the TAGEM Master Plan,	**Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** With the bilateral cooperation established information was obtained on phosphorus recovery in waste water treatment facilities carried out in Denmark and turning treatment facilities into bio-refinery and institutional capacity to operate wastewater treatment facilities within the framework of circular economy was developed. **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project to Prepare Ergene Basin Treatment Sludge Management Plan **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project to Prepare Gediz Basin Treatment Sludge Management Plan **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project to Prepare Türkiye’s Treatment Sludge Management and Action Plan

	which is being prepared in 2022, it is planned to include targets and strategies for the circular economy and related issues. **The Soil and Water Resources Research Department** focuses on the assessment of agricultural biomass potential in Türkiye. **Animal Health, Food, and Feed Research Department,** on the other hand, carries out studies for the evaluation of agricultural waste and residues in the food and feed industry. **The General Directorate of EU and Foreign Relations** focuses on the activities carried out **by the Ministry of Agriculture and Forestry** in line with the objectives of food safety, reducing losses in the supply chain, preventing waste and raising consumer awareness in the 11th Development Plan, in the context of preventing food loss and waste. **FAO** contributes to the circular economy with its activities in the food, agriculture, fisheries, and forestry sectors, effective and sustainable use of soil and water resources, sustainable transformation of food systems, strengthening supply chains in agriculture and food products, reducing food loss and waste, disposal of persistent organic polluting pesticides. In different regions of Türkiye, projects related to biodiversity, sustainable management of forest and water resources, and sustainable food systems come to the fore. Especially The National Strategy Document on prevention, reduction, and monitoring of food loss and waste and its Action Plan, prepared in cooperation with the Ministry of Agriculture and Forestry, has been an important step in terms of food losses, which is one of the priority areas of the circular economy. **Federation of Food & Drink Industry Associations of**	**Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Studies to determine feasible, competitive and encouraging clean production possibilities in yeast sector were carried out (SANTEM project) **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Studies on Sustainable Management of Waste Water Originating in Olive Oil Facilities are carried on. **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Sustainable Management of Milk Whey **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** "Project to Reuse Treated Waste Water" **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project to Investigate Public- Private Sector Cooperation in Building and Operation of Waste Water Treatment Facilities **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Water and Soil Management,** Project to Investigate the Building and

	Türkiye (TGDF) is a structure that represents associations operating in different fields in the food industry. Their mission is to develop all food and beverage companies in a sustainable manner, regardless of their level, to increase their quality and competitiveness in the national and international arena, and to built an environment that will meet the needs of consumers. TGDF participated in the project carried out with the slogan "Save Food" aimed at reducing food loss and waste. **The Food Rescue Association** carries out activities to raise awareness about food waste, to work on legislation, and to strengthen the capacity of NGOs working on this issue, with Surplus Food, a structure and social enterprise that represents the private sector. With the platform they have established, they offer discounted sales to products with overstock, damaged packaging, and approaching expiration dates, thereby preventing food from becoming waste according to the food recovery hierarchy. In order to prevent food loss and waste of unsold foods, it cooperates with different stakeholders in the value chain and carries out projects in the private sector in the concept of food banking in order to deliver the remaining consumable foods to the needy. Foods that cannot be donated are evaluated for use as biogas or animal feed. In addition, it carries out symbiosis applications specific to various food wastes. The work of the Food Rescue Association and Surplus Food on the value chain contributes directly to the circular economy.	Operability of Waste Water Treatment Facilities with Public Private Sector Cooperation by Means of Exemplary Feasibilities (KÖİF) **Ministry of Agriculture and Forestry, Directorate General of Water Efficiency/ Department of Research and Assessment / Water Efficiency Work Group,** Industrial Water Efficiency according to NACE Codes Project **Ministry of Agriculture and Forestry, Directorate General of Water Efficiency/ Department of Research and Assessment / Water Efficiency Work Group,** Project of Assessing Reuse Alternatives of Used Water **Ministry of Agriculture and Forestry, Directorate General of Water Efficiency/ Department of Research and Assessment / Water Efficiency Work Group,** Project of Assessing Drinking Water Sources and Treatment Facilities in Türkiye **Ministry of Agriculture and Forestry, Directorate General of EU Foreign Affairs,** Protect Your Food Own Your Table **Ministry of Agriculture and Forestry, General Directorate of Animal Health, Department of Food and Feed Research,** A number of research projects on using Agricultural Waste and Discards in Food and Feed Industry **Ministry of Agriculture and Forestry, General Directorate of Agricultural Research and Policies, Department of Soil and Water Resources,** Project to Use Sustainable Biomass to Support the Development of

		Turkish Economy by Means of Green Growth **Ministry of Agriculture and Forestry,** Türkiye Bio-economy Strategy Document Study **Ministry of Environment, Urbanization and Climate Change, Directorate General of Environmental Management, Department of Air Management,** Project to prepare National STÜ Action Plan including the STÜ models containing four main sectors "food, fishery and agriculture", "housing and building", "consumption goods" and "tourism"
LESS WASTE, MORE VALUE	**MoEUCC, Directorate General of Environmental Impact Assessment, Permit and Inspection · - Department of Permit and License,** issue environmental permits and licenses for waste pre-treatment and recycling activities in accordance with the relevant legislation, within the scope of circular economy. **MoEUCC - Directorate General of Environmental Impact Assessment, Permit and Inspection, Department of EIA, Monitoring and Environment Auditing** emphasizes that the elements related to the circular economy in the current legislation are included in the audit processes and that new elements that will come to the policy and legislation in the future will be integrated into the audit content in the same way. **MoEUCC, Directorate General of Environmental Management, - Water and Soil Management Department**, in line with the relevant policies of the MoEUCC and the relevant measures in the 11th Development Plan, adopts the approach that wastewater is	**Ministry of Environment, Urbanization and Climate Change, General Directorate of Environment Management Department of Sea and Shore Management,** Zero waste blue movement **Ministry of Industry and Technology,** "Project to Develop Industrial Symbiosis Road Map for Türkiye" **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Searching and Assessment of Mineral Deposits and Industrial Wastes in Terms of Advanced Technology Elements **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Briquette Production from Azdavay Coals by Adding Cellulosid Material **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Obtaining Clean Coal with Chemical Methods and

	an alternative water source and the implementation of circular economy principles in wastewater management. In this context, capacity building and legislation studies are carried out for the evaluation of wastewater and treatment sludge, the conversion of wastewater treatment plants into biorefinery plants, the use of treatment sludge as soil improver, the recovery of organic substances such as phosphorus from wastewater. Water and Soil Management Department also carries out studies in the fields of sustainable production and consumption principles, cleaner production, and best available techniques. **MoIT - General Directorate of Industrial Zones**, within the framework of the eco-industrial park approach, Green OIZ transformation and within the scope of the Green OIZ Certification System, includes issues related to circular economy such as resource efficiency and industrial symbiosis. **MoAF - The Feed Department of the General Directorate of Food and Control** develops the legislation for the use of appropriate food wastes in feed production, taking into account the feed safety criteria, and thus the department contributes to the efficient evaluation of food waste. **MoENR - The Department of Natural Resources** carries out studies for the use of natural resources within the scope of a sustainable and circular economy, focusing especially on the evaluation of mining wastes and the recovery of critical materials within the framework of its mission of "Building a future that will enable the natural resources under the rule and disposal of the Republic of Türkiye to be utilized in a sustainable, innovative and international	Recycling of Metals with Industrial Value **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Obtaining Metallurgical Coke from the Mixture of Imported Coals Used in Ereğli Iron and Steel Facilities and Armutcuk Noncoking Coal **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** General Directorate of Tki Regional Directorate of Gli Establishment Kütahya- Tavşanlı- Tunçbilek Ömerler Launder Exit Enrichment and Economic Pre-Assessment Study **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Determination of the Current Conditions of Abandoned Mine Sites and Pre-Study of the Proposals for Rehabilitation **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Method Development Studies for Location Selection and Waste Disposal **The Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration**, "Project to Research Rare Earth Elements of Türkiye and Develop Innovation Capacity" **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Environmental Impact of Mineral Deposits Operated and Abandoned in Eastern Black Sea Region Together with

	competitive power and brought into the economy". **MoENR - General Directorate of Mineral Research and Exploration,** conducts research on reducing foreign dependency on energy raw materials, management, and planning of our own natural resources, especially strategic and critical raw materials, obtaining various raw materials that can be associated with the circular economy from wastes as secondary raw materials and evaluating mining wastes. **MoENR - The General Directorate of Mining and Petroleum Affairs (MAPEG)** also carries out projects related to the evaluation of mining wastes, evaluates the secondary resources within the scope of determining the aggregate need and the resources that can meet this need, taking into account the marble wastes, and joint studies are carried out with MTA. **MoENR - Turkish Energy, Nuclear and Mineral Research Agency Institutional (TENMAK)** carries out R&D and P&D studies for the recovery of waste and residual waste and the efficient use of critical resources. It especially focuses on R&D projects for precious metal recovery from rare earth elements and electrical and electronic wastes. **United Nations Development Programme (UNDP)** prioritizes the intersection of projects with the circular economy and still contributes to the circular economy with its work in waste management and industrial symbiosis. In particular, the "Industrial Symbiosis Project in the İzmir Region" carried out in cooperation with the İzmir Development Agency (İZKA) draws attention.	Existing Land Structures **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Obtaining Molybdenum from Copper Ore and Wastes **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Recovery of Mine Sites to Nature Yeniköy Lignite Enterprise (YLİ) Yaylıtepe Site Example **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research on Obtaining End Product from Coal Char Argils **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research for the Potentials for Obtaining Lithium Components from Kırka Boron Facility Argil Wastes **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Usability of Pyrophylite and Andesite Powder as Alternative Raw Material in Ceramic Structures **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research of Dewatering Means of Eti Maden Kırka Boron Operations Concentrator Facility Wastes **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Air Ducted Briquette and Building Material Production from Tunçbilek Waste Pools **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,**

	Organized Industrial Zones Supreme Council (OSBÜK) considers studies in the field of circular economy important. It has been stated that there are different practices related to the circular economy in OIZs. Among the examples, the waste treatment facilities established in the OIZ and the project carried out with Vodafone for the collection and evaluation of electronic waste are mentioned. The green transformation efficiency of OIZs is also mentioned. **Evaluable Waste Materials Industrialists Association (TÜDAM)** is a structure formed by the combination of collection, separation, and recycling facilities. Their vision is to contribute to the 2053 carbon-neutral target and the circular economy at the highest level. TUDAM's road map will be developed in a short time and the circular economy will also be included in this context. **Recovery Industrialists Association (GEKSANDER),** similarly, includes recycling companies within its body and evaluates and markets the products obtained by recycling, collection, storage, transportation, and reprocessing of waste and discusses issues related to and during these transactions. It has been stated that the sector has previously understood and applied the circular economy due to its field of activity. **Recycling and Recovery Industrialists Association (GEKADER)** is a structure that has mainly plastic recycling facility members. Their work focuses on the recycling of plastic waste, the production of secondary raw materials, and especially their marketing abroad. Work has begun on establishing a recycling OIZ, in which recycling facilities will be located.	Research for the Potentials of Using Thermal Power Plant Coal Ashes to Be a Source for Rare Earth and Other Elements with Economical Importance **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research for the Producibility of Building Materials from Natural Stone Wastes **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research for the Potentials for Obtaining Lithium Components from Kırka Boron Facility Argil Wastes **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research on Obtaining End Product from Coal Char Argils **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Rehabilitation of mine sites Ege Linyitleri İşletmesi (ELİ) – Soma Işıklar tallow site **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Development of determining geo-technical and waste problems of natural stone sites and block reinforcement technologies **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Research of fly ash characteristics and environmental impact: Usability in synthetic zeolite production **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,**

	Electrical and Electronics Recycling and Waste Management Association (ELDAY) manages the collection and recycling processes of end-of-life WEEE. In this way, it contributes to the recycling of WEEE as a secondary raw material to the economy. It has been stated that the sector is aware of the circular economy, which is the field of activity, and studies are carried out with its members.	Determination and assessment of the existing environment characteristics of potential mine sites **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Düzce City Aggregate Source Planning **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Utilization of Burdur City Marble Discards **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Mine Waste Management Project **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Waste Drilling Mud Characterization **Ministry of Energy and Natural Resources, Directorate General of Mineral Research and Exploration,** Waste Management and Zero Waste Project **Ministry of Energy and Natural Resources, Head of Natural Resources Department,** Projects to determine the potentials of advance technology elements in mine waste/ residue/ tallows and determine lithium and other element potentials in geothermal resources **Ministry of Energy and Natural Resources, Directorate of Energy Efficiency and Environment Department,** "Project to Assess the Waste Heat Potential of Türkiye"
MAKING THE CIRCULAR	**Small and Medium Enterprises Development and Support Administration (KOSGEB)** puts the issue of	**Ministry of Environment, Urbanization and Climate Change, General Directorate of Infrastructure and**

ECONOMY WORK FOR PEOPLE, REGIONS AND CITIES	circular economy on its agenda in line with its objectives of sustainable growth and raising productivity levels for SMEs. It includes issues related to sustainability and circular economy in its capacity building activities and supports for SMEs. Such activities are included within the scope of the EU Program for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME). Within the scope of the Institution's R&D, P&D and Innovation Support Program, there is the title of "Supporting R&D and Innovation and P&D Projects for Reducing Carbon Emissions". **MoIT - General Directorate of Development Agencies** ensures that circular economy and related issues are included in the studies and strategies prepared by the development agencies and Regional Development Administrations, which it coordinates, and that these issues are prioritized. In the Regional Development National Strategy (BGUS) (2014-2023), it is aimed to transition to a more environmentally friendly economy and to achieve sustainable development goals in the long term, within the scope of the horizontal objective of "Supporting the Sustainable Environment and Green Economy". In this framework, policy priorities such as the transition to clean production and consumption systems at the regional level, eliminating infrastructure deficiencies in this area and increasing energy efficiency are included. Circular economy and related fields form an important basis in the work of the 4 Regional Development Administrations (DAP, DOKAP, KOP, GAP). Preparations for the new term BGUS and regional plans have started, and the circular economy will be among the priority areas in the strategy.	**Urban Transformation Services**, Our City Konya project **Ministry of Environment, Urbanization and Climate Change, General Directorate of Infrastructure and Urban Transformation Services,** Methodology development study to reduce the effect of debris wastes resulting from urban transformation within the scope of Urban Resilience Project **Ministry of Industry and Technology, Directorate General of Development Agencies,** Sustainable Youth Energy (RE-YOU) Operation **Ministry of Industry and Technology, Directorate General of Development Agencies,** Thrace Productive SME s Project **Ministry of Industry and Technology , KOSGEB**, COSME (European Union Competitiveness of Establishments and SMEs Program) Türkiye Project

	The Southeastern Anatolia Project Regional Development Administration was established in 1988 with a decree law and considers the concept of circular economy as an important pillar in many of its completed or ongoing projects. Within the scope of projects such as "Integrated Resource Efficiency in Agriculture and Agro-Based Industry", "Use of Renewable Energy Resources and Energy Efficiency", "State of the Art and Gap Analysis of Precision Agriculture", "Organic Agriculture Clustering Project" in the GAP region, the perspective on the circular economy is based. Pilot projects are carried out to increase productivity by conducting value chain analysis in terms of many subjects such as raw materials, energy, water, waste recycling, and logistics, from seed to final product, specifically for 7 agricultural products that are dominant in the Southeastern Anatolia Region. **United Nations Industrial Development Organization (UNIDO)** has been carrying out projects and programs related to clean production and green entrepreneurship for many years. The Global Cleantech Innovation Programme (GCIP) is a program to support entrepreneurs and start-ups in the field of clean technologies in cooperation with TÜBİTAK. Projects for the evaluation of various wastes, especially biomass, are carried out and planned with different institutions. **The Union of Chambers and Commodity Exchanges of Türkiye (TOBB) Sectors and Entrepreneurship Department** stated that the circular economy has an important place in their agenda. In this context, especially members are informed and training is provided. The Union's Waste Council directly works on the circular	

	economy, and it also takes part in its activities in the field of entrepreneurship. For example, the Women Developers of the Future Project, carried out in cooperation with Turkcell, was carried out only on the topics of green transformation, carbon footprint calculation, and circular economy. **Turkish Enterprise and Business Confederation (TÜRKONFED)** has a large member base, the majority of which are SMEs, with segments based on sector, scale, business, and region. It aims to increase the productivity levels of SMEs while ensuring their sustainable growth, with the activities they carry out with the aim of raising awareness of green transformation for SMEs and creating policy. The circular economy is also on the agenda in the preparatory work for the transition to a low-carbon economy, which is carried out specifically for SMEs.	
CROSSCUTTING ACTIONS	**MoEUCC - Presidency of Climate Change,** in line with the net zero emission target and the principle of circular economy, combating climate change and determining green development policies, preparing strategies and action plans are among its duties, and the circular economy is considered as one of the carbon reduction tools. **Business 4 Goals (B4G)** has determined the circular economy as a priority concept that cuts horizontally on climate change and disaster resilience, preparing businesses for the future, and inclusive growth, which are its main areas of work and carries out studies on this topic. It carries out climate change studies by focusing on the circular economy model and creating collaborations in order to strengthen the contribution of the private sector to the fight against climate change, encourage responsible production	**Ministry of Industry and Technology, Directorate General of Development Agencies,** Best For Energy (Support for Efficient and Sustainable Transition in Energy) Project **Ministry of Energy and Natural Resources, Department of Energy Efficiency and Environment,** "Strategic Sector Cooperation Project Agreement Efficient Heating and Cooling Project" **Ministry of Energy and Natural Resources, Department of Energy Efficiency and Environment,** Project "to Enhance the Capacity of ETKB (Ministry of Energy and Natural Resources) in Preparing Guidelines and National Strategy in Efficient Heating and Cooling Field

	and consumption processes, and monitor the reflections of the EU Circular Economy Action Plan in Türkiye.	**Ministry of Energy and Natural Resources, Turkish Energy Nuclear and Mineral Research Agency,** Carbondioxide Capture and Use Technologies Road Map and Application Plan for Türkiye **Ministry of Energy and Natural Resources, Turkish Energy Nuclear and Mineral Research Agency,** Hydrogen Technologies Road Map and Application Plan for Türkiye
LEADING EFFORTS AT GLOBAL LEVEL	Within the scope of the circular economy, **the Ministry of Foreign Affairs** follows the developments in the EU, the reports and documents issued, the legislative changes, and the harmonization of the new EU legislation. Legislation envisaged to be enacted on circular economy issues is followed up within the scope of the National Action Plan. In addition to this, the evaluation of the projects that are envisaged to be supported within the scope of EU funds (such as IPA/TAIEX, Horizon Europe) in the aforementioned area, and programming and monitoring studies are carried out. One of the most important issues on the **Delegation of the European Union to Türkiye's** agenda is the circular economy. In the upcoming period, grants will be provided to NGOs, including those representing the business world, within the scope of the Green Deal. It is possible to evaluate this support in areas related to the transition to the circular economy.	
MONITORING THE PROGRESS	**Turkish Statistical Institute (TURKSTAT, TÜİK)** follows the international developments in its field related to the circular economy and carries out its studies in line with	

	the demands. In this context, data on some metrics included in Eurostat's Material Flow Accounting (MFA) based circularity analysis methodology are regularly published and transmitted to Eurostat.	

4. GAP ASSESSMENT

Unlike the EU Member States that entered the process of transition to CE with already applied measures, mechanisms, principles pertinent to the EU framework, Türkiye is in the process of approximation. Turkish entry points might have some gaps which have not even been considered by the EU Member States when deciding on approaches/mechanisms. For this reason, the approaches/mechanisms to be developed for these gaps should be decided by considering the country conditions.

4.1. Legislative Gaps

Dialogues conducted with the stakeholders have shown that in general concept, there is lack of a framework that covers the circular economy comprehensively and includes a holistic approach for the country. The current legal framework is insufficient for the realization of circular economy. Although the concept of circular economy is included in the current Environmental Law, there are still some uncovered areas especially in the harmonization process with the EU legislation in terms of circular economy. There is no action plan for Türkiye that addresses the circular economy as a whole.

With all these, current legislative infrastructure in terms of applying circular economy principles is also inadequate. In parallel with, the applications that are essential to realize circular economy such as waste collection systems, end-of-waste criteria, efficient recycling and other related subjects, which are currently undeveloped in the local context are the main obstacles in country's circular transition.

In many areas, circular economy is not encouraged by the existing policy instruments. In fact, legislation stands as restrictive for the implementation of circular economy practices such as waste utilization and industrial symbiosis. In addition to the inadequacies in the current legislative area, there are undeveloped sustainable product policies and practices and other relative initiatives, mainly due to the lack of development of the action plan.

In accordance with this assessment and the detailed benchmarking analysis provided in Section 3.1., both the general and the specific gaps and issues (within the context of the EU-CEAP) associated with the current legislative framework are listed below:

General	- Lack of a framework that covers the circular economy comprehensively and includes a holistic approach - Uncovered areas especially in the harmonization process with the EU legislation in terms of circular economy - Lack of a circular economy action plan for Türkiye - Insufficient legislation for improving circular economy related practices at local context - Restrictive regulations regarding waste utilization and industrial symbiosis
A Sustainable Product Policy Framework	- Lack of a plan for a timely and efficient implementation of the upcoming expansions and revisions in the EU Eco-design Regulation

	- Absence of specific requirements such as right to repair and strengthen the information tools, product guarantees, free upgrading opportunities, etc. in the existing Consumer Protection Law - Insufficient compliance between the National Environmental Labelling scheme and the new requirements and criteria planned for the EU Eco-label - Absence of green public procurement criteria in the Public Procurement Law - Inadequate harmonization of the IPPC and IED legislation and lack of a sufficient basis for integrating the upcoming circular economy criteria in BREF documents.
Key product value chains	- Lack of a detailed assessment complying with the latest policy framework adopted by the Commission on the potential requirements for batteries and the EPR requirements - Lack of an assessment on the expected rules and legislative proposal on ELVs and a plan for revising the existing regulation accordingly - Lack of a detailed study on the possible actions to align with the recent policy framework adopted by the Commission targeting the reduction of packaging use and wastes - Lack of comprehensive plan and preparations for complying with the existing and potential EU requirements on recycled content, recyclability, single-use plastics and microplastic issues, etc. - Lack of a plan on how to introduce regulations on bio-based, biodegradable plastics in compatible with the EU framework - Lack of an assessment on the recent EU Textile Strategy and identify the needs for a specific regulation for textile industry to cover the EPR rules, eco-design, collection and recycling requirements, etc. - Lack of a plan for adapting the upcoming construction products related requirements including recycled contents in addition to safety, functionality, etc. - No regulation on eco-modulation of EPR fees for the products covered by EPR (e.g. penalizing the use of less environmentally friendly materials and rewarding the use of better ones – for example, by imposing a higher tax rate on products that are more difficult to recycle, or presenting fee reductions for easily recyclable materials)
Less waste more value	- Lack of an assessment on the standardization and improvement requirements of collection systems and relevant additional legal measures - Lack of a mechanism for tracking and controlling the hazardous substances in the recycled waste streams - Lack of a completed study on the end-of-waste criteria and develop a legislative framework for its implementation

	- Lack of a review of the current waste shipment procedures and an assessment if any changes would be needed in the relevant criteria
Making the circular economy work for people, regions and cities	- Insufficient supports for the circular economy transition through an inclusive skills approach - Lack of an efficient mechanism to support the circular economy transition through related funds and initiatives
Crosscutting actions	- Insufficient efforts for identifying synergies between the circular economy and climate change mitigation and adaptation efforts - Lack of a study for the certification of carbon removals associated with circular economy practices and a related regulatory framework - Lack of a specific framework for supporting circular economy transition activities - Lack of assessment of national energy and climate plans that reflect circular economy objectives - Lack of a study on non-financial reporting and initiatives and a regulatory framework for its implementation
Leading efforts at global level	- Insufficient capacity for following up leading efforts at global level and actively taking part in discussions/ negotiations - Lack of a concrete step in implementing the taxonomy legislation of the EU for assessing and financing relevant investments
Monitoring the progress	- Lack of a legal framework for circular economy monitoring - Lack of a legal framework for collecting specific data collection for monitoring the progress

4.2. Infrastructure Gaps

In this section physical, technological and information infrastructure (knowledge/awareness) gaps are assessed in circular economy context.

Regarding the infrastructure gaps, stakeholders mainly focused on the insufficient awareness of the circular economy in society, insufficient understanding of the concept of circular economy by the relevant parties and inadequate knowledge or focus on the value of wastes in all segments. Lack of scientific and technical studies on circular economy besides lack of adequate R&D and P&D studies on circular economy are also critical in terms of not achieving favourable conditions for developing and implementing circular business models and practices. Even the lack of knowledge and practice of innovative business models itself is a major issue. Inadequate existing infrastructure and practices in waste management, lack of information, standards and relevant controls on products and materials, insufficient infrastructure and capacity in the use of secondary raw materials, insufficient data on the circular economy are also among the primary infrastructural gaps.

Based on this general framework and in terms the EU CEAP context, general and specific gaps can be listed as follows.

General	- Insufficient awareness of the circular economy in society, insufficient understanding of the concept of circular economy by the relevant parties - Inadequate knowledge or focus on the value of wastes - Lack of scientific and technical studies on circular economy besides lack of adequate R&D and P&D studies on circular economy - Lack of knowledge and practice of innovative business models - Inadequate existing infrastructure, technologies and practices for waste management - Lack of information, standards and relevant controls on products and materials - Insufficient infrastructure and capacity in the use of secondary raw materials - Insufficient data on the circular economy
A Sustainable Product Policy Framework	- Lack of skills and knowledge on eco-design and circular design approaches, - Lack of sufficient and easily accessible repair and maintenance infrastructures, - Lack of standardized labelling and information tools for consumers - Insufficient infrastructures to develop digital systems for products - Lack consumer awareness on circular products
Key product value chains	- Insufficient collection, sorting and recycling infrastructures for almost all of the value chains, ability to provide guarantees in resale markets, certification scheme for recyclers - Lack of sufficient and easily accessible repair and maintenance infrastructures - Insufficient infrastructures for implementing EPR requirements - Insufficient use of digital systems for different purposes such as traceability, etc. - Lack of awareness on evaluation of wastes and unused products (ex. electronic products)
Less waste more value	- Insufficient collection, sorting and recycling infrastructures for almost all of the value chains - Insufficient infrastructures for implementing EPR requirements - Insufficient infrastructure and technologies used for recovery practices, etc. - Insufficient monitoring capability to develop end-of-waste

	criteria - Inadequate existing infrastructure for minimizing the need for imported waste - Inadequate technical studies to promote industrial symbiosis practices - Insufficient infrastructure and capacity in the use of secondary raw materials - Insufficient infrastructure to develop data collection and processing - Lack of knowledge on household waste separation practices
Making the circular economy work for people, regions and cities	- Insufficient infrastructure to support skills development - Inadequate resources on circular economy to develop skills - Lack of awareness on circular economy related support and/or funding programs - Inadequate supporting mechanisms and initiatives to encourage circular economy transition - Inadequate physical infrastructures for circularity at local level
Crosscutting actions	- Lack of skills to analyse how the impact of circularity on climate change mitigation and adaptation can be measured - Inadequate technical infrastructure to develop carbon removal practices through circular initiatives - Inadequate infrastructure to develop carbon certification mechanisms based on circular initiatives
Leading efforts at global level	- Insufficient awareness of most of the stakeholders on international agreements related to the global efforts for circular economy
Monitoring the progress	- Insufficient data collection and processing infrastructure to develop related database for circular economy

4.3. Institutional Gaps

The institutional analysis focuses on defined institutional competencies and refers back to the transposition level analysis, indicating which legal provisions need to be revised or introduced to constitute a measure.

Stakeholder dialogues have revealed that although most of the institutions have awareness and structures for the areas related to circular economy, there are still gaps regarding defined and well-established institutional awareness and structures specific to circular economy with a holistic approach. There is also a gap to accomplish circular economy with a holistic approach in local and regional governments due to inadequacy of local governments in circular economy practices in Türkiye. Local governments are especially lacking to build their capacity, circular economy practices, financial situation and awareness regarding circular economy. This is also affected by insufficient incentives, empowering and support provided to local governments. At the same time insufficient regional or local studies on circular economy emerges in the application which includes waste collection points of circular

economy practices. Furthermore, the lack of some departments which carry out circular economy studies at local level slow down the acceleration of circular economy practices. In addition, lack of cooperation and interaction among stakeholders is being observed in and between private and public sectors. Particularly, existing human resources working on circular economy are not sufficient in terms of training and experience.

Based on this general framework and in terms the EU CEAP context, general and specific gaps can be listed as follows.

General	- Insufficiency in defined and well-established institutional awareness and structures specific to circular economy with a holistic approach - Insufficiency in accomplishing circular economy with a holistic approach in local and regional governments - Lack of sufficient capacity, practices, financial situation and awareness regarding circular economy in local governments - Insufficient incentives, empowering and support provided to local governments - Lack of certain departments which carry out circular economy studies at local level - Lack of cooperation and interaction among stakeholders
A Sustainable Product Policy Framework	- Insufficient institutional structures for facilitating the implementation of the requirements of Sustainable Product Policy Framework at all levels - Insufficiency in relevant auditing mechanisms and institutional structures
Key product value chains	- Insufficiency in structures to accelerate the implementation of the requirements related to all key product value chains and support the dissemination of related circular business models - Insufficiency in relevant auditing mechanisms and institutional structures
Less waste more value	- Insufficiency in structures to accelerate the implementation of the requirements related to waste reduction and creating more value and support the dissemination of related circular business models - Insufficiency in relevant auditing mechanisms and institutional structures
Making the circular economy work for people, regions and cities	- Insufficient human resources working on circular economy and inadequate qualifications, training, and experience. - Lack of sufficient capacity, practices, financial situation and awareness regarding circular economy in local governments
Crosscutting actions	- Lack of dedicated structures for establishing concrete links between climate change and circular economy practices
Leading efforts at	- Insufficient institutional structures for facilitating the circular

global level	economy related interactions and engagements at global level
Monitoring the progress	- Insufficient human resources and dedicated departments at national and local governments for collecting data on circular economy metrics and monitoring the progress - Insufficiency in relevant auditing mechanisms and institutional structures

4.4. Financial Gaps

Principles and strategies are nothing without proper funding to support them though. Europe has also set financial mechanisms and tools to support the deployment of strategies and action plans. Whether the required financing and relevant instruments are in place is examined in this section.

As agreed by stakeholders, there is a gap to accomplish circular economy approach at local and regional governments due to inadequacy in financing and incentives for circular economy practices for private and public sectors in Türkiye. At the same time the way and extent of accessing international financial resources and support is insufficient. Especially, SMEs do not have enough financial and human resources for the transition towards circular economy. The existing financial support is insufficient also for transforming existing businesses or creating new ones for this transition. In addition, the evaluation criteria for supporting and incentivizing circular economy related initiatives and practices are not clear and there is a deficiency in investment and investment financing for private sector. The current green transformation in organised industrial zones and other industrial zones is slow and poor. Especially, there is insufficient number of specialized zones for the waste sector. These are a matter of not only legislative issues but also related financial resources needed for investments.

Based on this general framework and in terms the EU CEAP context, general and specific gaps can be listed as follows.

General	- Inadequacy in finance and incentives for circular economy practices for private and public sectors in Türkiye - Insufficiency in the way and extent of accessing international financial resources and support - Insufficient financial resources for the transition towards circular economy, especially for SMEs - Insufficiency in the existing financial support for transforming existing businesses or creating new ones - Lack of clear evaluation criteria for supporting and incentivizing circular economy related initiatives and practices - Deficiency in investment and investment financing for private sector.
A Sustainable Product Policy Framework	- Lack of allocated or identified financial resources for completing the conversion process and relevant investments

	related to the requirements associated with the Sustainable Product Policy Framework - Insufficiency in dedicated financial sources for supporting R&D and commercialization projects
Key product value chains	- Lack of allocated or identified financial resources for completing the conversion process and relevant investments related to the requirements associated with all key product value chains - Insufficiency in dedicated financial sources for supporting R&D and commercialization projects
Less waste more value	- Insufficient financial support for creating specialized zones for the waste sector. - Insufficiency in dedicated financial sources for supporting R&D and commercialization projects
Making the circular economy work for people, regions and cities	- Insufficient financial resources for circular economy related capacity building, training and social business initiatives - Insufficient financial resources for strengthening local initiatives and circular city concepts
Crosscutting actions	- Lack of a concrete framework for integrating carbon reduction impacts of circular economy projects to the financial appraisal processes - Lack of a mechanism to build a synergy between carbon reduction and circular economy investments for facilitating additional financing opportunities
Leading efforts at global level	- Lack of a concrete step in implementing the taxonomy legislation of the EU for assessing and financing relevant investments - Insufficient international financial resources diverted to circular economy initiatives in Türkiye
Monitoring the progress	- Lack of a dedicated financial resource for establishing a circular economy related data collection and monitoring system

5. NEED ASSESSMENT

5.1. Legislative Needs

Building circular economy will take a range of new changes on the existing legal framework. Herein, legal regulation that will determine the basic principles and legal framework of the circular economy is the fundamental requirement. Therefore, the relevant legislation needs to be revised and/or studies new legislation studies. Development of new policies and establishment of the legislative infrastructure need to be inclusive and comprehensive. These studies should compile the legislation that will ensure implementation of the principles of circular economy, to seek opinions from all relevant ministries on circular economy and application areas, and to consider regional and geographical conditions while developing policies on this subject.

At this point, the preparation and implementation of an inclusive National Circular Economy Action Plan is crucial to determine and develop the new policy instruments to promote circular economy. One of the main building for the new legislation framework would be the revision of Waste Management Regulation in line with circular economy principles. This includes the revision of waste treatment facilities' categorization and licensing criteria, information and data integrity, security and protection.

For more effective and accurate data collection (waste, import, export etc.), it is required to conduct this process under a single system in order to ensure traceability in order to prevent duplication and wrong registration.

To tackle with the waste import issue, determining the waste capacity of the country and evaluating these wastes is needed. At this point, the quality of materials produced from waste need to be improved. This requires more effective waste collection and other relevant practices that needs to be regulated by the policies.

Besides the efforts to be taken for waste related topics, there is also a need to develop new policies specific to product circularity. This includes the designing and production of products and materials with a long life, development of standards for durability, repairability and recyclability of products and materials and also improving the management of chemicals that are used in products. These efforts would all contributes to the circular economy by improving the way of how products and materials produce and consume. During the development of these new policies each sector should be considered based on their needs. For example, while creating legislation for sustainable product initiative in the automotive sector, current regulations and targets related to that sector should also be considered.

Another priority should be given to increase industrial symbiosis application. Besides the development adequate legislation and governance infrastructure to expand and facilitate industrial symbiosis practices, there is also a need to encourage sectoral actors to realize industrial symbiosis applications.

Sectoral approaches should be taken into consideration in all subjects. It should be taken into consideration that each sector has it’s their own needs and capabilities in terms of circular economy. In mining value chain, there is a need for a legislation in line with circular economy

for the management of mining waste Existing regulations regarding the automotive industry, such as the Regulation on the Control of End-of-Life Vehicles, the Regulation on the Control of End-of-Life Tires and the Control of Waste Batteries and Accumulators, need to be revised. Same with the mining, construction and demolition waste need a circular economy-friendly management, including urban regeneration. To do so, particularly the regulation on the demolition of buildings needed to be reviewed.

The food industry is also in a place that needs attention in circular economy both in the production and consumption angle. While ensuring the management of food waste in accordance with the circular economy is important, packaging criteria in the food industry also need to be reviewed.

Based on these basic issues and the legislative gaps discussed above needs are summarized herein below:

General	- To establish a legislative framework that covers the circular economy comprehensively and includes a holistic approach - To prioritize circular economy related concepts in the harmonization process with the EU legislation - To prepare a circular economy action plan for Türkiye - To improve the legislation for improving circular economy related practices at local context - To improve the relate regulations for facilitating waste utilization and industrial symbiosis practices towards a more circular economy
A Sustainable Product Policy Framework	- To have a plan for a timely and efficient implementation of the upcoming expansions and revisions that will take place in the EU Eco-design Regulation (assessing sector/product specific priorities and requirements) - To review the existing Consumer Protection Law and assess how to integrate the specific requirements such as right to repair and strengthen the information tools, product guarantees, free upgrading opportunities, etc., as well as to regulate the green claims and use of sustainability labels - To assess how the existing National Environmental Labelling scheme can be improved to comply with the new requirements and criteria planned for the EU Eco-label. - To work on the Public Procurement Law and relevant processes to integrate and implement green public procurement criteria. - To speed up the IPPC and IED harmonization studies and follow the upcoming revisions expected to integrate circular economy criteria in BREF documents.
Key product value chains	- To take measures in line with the eco-design regulations regarding Electronics and IT and the new requirements regarding the common charger. - To follow the potential requirements for batteries, including both hazardous substance contents and EPR requirements and assess if any revisions and measures would be needed.

	- To assess the expected rules and legislative proposal on ELVs and plan for revising the existing regulation accordingly - To review the existing regulatory measures for packaging and take actions to improve their effectiveness in line with the recent policy framework adopted by the Commission targeting the reduction of packaging wastes, use of certain and unnecessary packaging, increase in recycled contents and offering reuse and refill options. - To assess the effectiveness of the current regulations on plastics and enhance the relevant legal measures in accordance with the existing and potential EU requirements on recycled content, recyclability, single-use plastics, banning certain products as well as collection and recycling requirements and microplastic issues - To assess how to introduce regulations on bio-based, biodegradable plastics in compatible with the EU framework - To assess the recent EU Textile Strategy and identify the needs for a specific regulation for textile industry to cover the EPR rules, eco-design, collection and recycling requirements, etc., in addition to existing cleaner production guidelines - To follow the developments regarding the construction products related requirements including recycled contents in addition to safety, functionality, etc. and prepare a roadmap for timely complying with the specific rules and criteria when they are in place. - To assess each sector specifically based on their needs for developing new sector/product/waste based policies - To focus particularly on mining and construction sectors for improving the waste reduction, waste collection and recycling practices as well as relevant data collection and monitoring
Less waste more value	- To assess the standardization and improvement requirements of collection systems and take additional legal measures if needed. - To develop a mechanism for tracking and controlling the hazardous substances in the recycled waste streams - To study end-of-waste criteria and develop a legislative framework for its implementation - To review current waste shipment procedures and assess if any changes would be needed in the relevant criteria - To revise the categorization and licensing criteria of waste treatment facilities, integration of information and data security - To improve the current system for a more effective and accurate data collection (waste, import, export etc.) and to conduct this process under a single system in order to ensure traceability and prevent duplication
Making the circular economy work for people, regions and cities	- To support the circular economy transition through an inclusive skill - To develop a mechanism to support the circular economy transition through related funds and initiatives
Crosscutting	- To capture the synergies between the circular economy and climate

actions	change mitigation and adaptation efforts - To study certification of carbon removals and develop a regulatory framework for its implementation - To update state aids to support circular economy transition activities - To assess the national energy and climate plans to reflect circular economy objectives - To study non-financial reporting and initiatives by mainstreaming circular economy objectives in the context and develop a regulatory framework for its implementation
Leading efforts at global level	- To improve the existing framework for following up leading efforts at global level and actively taking part in discussions/ negotiations - To take a concrete step in implementing the taxonomy legislation of the EU for assessing and financing relevant investments
Monitoring the progress	- To develop a legal framework for circular economy monitoring - To develop a legal framework for collecting specific data collection for monitoring the progress - To improve the current system for a more effective and accurate data collection (waste, import, export etc.) and to conduct this process under a single system in order to ensure traceability and prevent duplication

5.2. Infrastructure Needs

Studies to raise sufficient awareness and knowledge of the circular economy in the society and awareness-raising activities that will ensure a clear understanding of the concept of circular economy by all parties would be helpful for disseminating the circular economy concept and practices. Promoting academic studies, especially on sectoral basis and increasing relevant R&D and P&D studies are also among the major needs. Using and disseminating techniques and technologies that contribute to the circular economy are required and special attention is needed for infrastructures of separation, collection, and recovery of waste at source (an efficient waste collection system and sufficient number of recycling/recovery facilities). This can also help minimizing the need for waste importing.

Implementation of waste management compatible with circular economy and in OIZs, monitoring of products and resources in value chains and establishing infrastructure and standards for secondary raw material use and other circular economy practices are among the other significant needs. These processes should be supported by developing data collection and processing infrastructure for circular economy, determining indicators and meeting the need as well as developing cooperation and practices that will enable the evaluation of electrical-electronic wastes and unused products.

Based on these issues and the infrastructural gaps already discussed, relevant needs are summarized below:

General	- To raise awareness for circular economy in society and improving understanding of the concept of circular economy by the relevant parties

	- To increase knowledge or focus on the value of wastes - To conduct scientific and technical studies on circular economy besides adequate R&D and P&D studies on circular economy - To focus more on creating knowledge and practice of innovative business models - To improve existing infrastructure, technologies and practices for waste management - To disseminate information, standards and relevant controls on products and materials - To establish infrastructure and capacity in the use of secondary raw materials - To establish mechanisms for collecting data on the circular economy
A Sustainable Product Policy Framework	- To develop skills and knowledge on eco-design and circular design approaches, - To establish sufficient and easily accessible repair and maintenance infrastructures, - To develop standardized labelling and information tools for consumers - To establish infrastructures to develop digital systems for products - To raise consumer awareness on circular products
Key product value chains	- To improve collection, sorting and recycling infrastructures for almost all of the value chains, ability to provide guarantees in resale markets, certification scheme for recyclers - To establish sufficient and easily accessible repair and maintenance infrastructures - To establish infrastructures for implementing EPR requirements - To use digital systems for different purposes such as traceability, etc. - To raise awareness on evaluation of wastes and unused products (ex. electronic products)
Less waste more value	- To improve collection, sorting and recycling infrastructures for almost all of the value chains - To improve the infrastructures for implementing EPR requirements - To improve infrastructure and technologies used for recovery practices, etc. - To improve monitoring capability to develop end-of-waste criteria - To enhance technical studies for promoting industrial symbiosis practices - To improve the infrastructure and capacity in the use of secondary raw materials - To improve the infrastructure for developing data collection and processing - To build and disseminate knowledge on household waste separation practices

Making the circular economy work for people, regions and cities	- To improve the infrastructures for supporting skills development - To raise awareness on circular economy related support and/or funding programs - To improve the supporting mechanisms and initiatives for encouraging circular economy transition - To improve physical infrastructures for implementing circularity at local level
Crosscutting actions	- To develop skills for analysing how the impact of circularity on climate change mitigation and adaptation can be measured - To establish adequate technical infrastructure to develop carbon removal practices through circular initiatives - To establish adequate infrastructure to develop carbon certification mechanisms based on circular initiatives
Leading efforts at global level	- To increase the awareness of most of the stakeholders on international agreements related to the global efforts for circular economy
Monitoring the progress	- To improve the data collection and processing infrastructures for developing the related database for circular economy

5.3. Institutional Needs

There is a need of local governments to be effective in the implementation of circular economy policies with the establishment of local and regional governance mechanisms for circular economy provided by MoEUCC. Due to lack of interaction between units and institutions, there is a need to effectively sharing information, cooperation and coordination among different units and institutions. One of the emerging needs is the creation of sufficient, trained, and experienced human resources in transition to circular economy by increasing the number technical staff. Further, establishment of incentive and contribution mechanisms are essential for the local and regional governments to standardise circular economy knowledge, capacity, and awareness. In order to standardise local and regional government effort regards circular economy, initiatives need to be based on legislations.

Based on these issues and the institutional gaps already discussed, relevant needs are summarized below:

General	- To establish institutional awareness and structures specific to circular economy with a holistic approach - To establish the infrastructure for accomplishing circular economy with a holistic approach in local and regional governments - To develop capacity, practices, financial situation and awareness regarding circular economy in local governments - To increase incentives, empowering and support provided to local governments targeting circular economy related practices - To establish or strengthen departments which carry out circular economy studies at local level

	- To improve cooperation and interaction among stakeholders
A Sustainable Product Policy Framework	- To improve institutional structures for facilitating the implementation of the requirements of Sustainable Product Policy Framework at all levels - To improve relevant auditing mechanisms and institutional structures
Key product value chains	- To strengthen the structures for accelerating the implementation of the requirements related to all key product value chains and support the dissemination of related circular business models - To improve the relevant auditing mechanisms and institutional structures
Less waste more value	- To improve the structures for accelerating the implementation of the requirements related to waste reduction and creating more value and support the dissemination of related circular business models - To improve the relevant auditing mechanisms and institutional structures in line with circular economy specific topics
Making the circular economy work for people, regions and cities	- To develop programs for creating human resources to work on circular economy and improve qualifications, training, and experience. - To develop capacity, practices, financial situation and awareness regarding circular economy in local governments
Crosscutting actions	- To establish dedicated structures for establishing concrete links between climate change and circular economy practices
Leading efforts at global level	- To improve the institutional structures for facilitating the circular economy related interactions and engagements at global level
Monitoring the progress	- To establish or improve human resources and dedicated departments at national and local governments for collecting data on circular economy metrics and monitoring the progress - To improve the relevant auditing mechanisms and institutional structures in line with circular economy related issues

5.4. Financial Needs

Financial needs were among the major issues that stakeholders have addressed. They have emphasized there is a need for development and implementation of financial instruments and developing investment opportunities that support the transition to a circular economy. It is very important to help all sectors harmonize i the requirements and conduct necessary investments. In addition, developing different types of incentives and support mechanisms with relevant evaluation and measurement criteria is essential for businesses that have initiatives for transitioning to circular economy models. Apart from these, local and regional

government should be supported and encouraged in financial instruments for improving circular economy related activities such as efficient collection and usage of wastes and residues.

Developing incentives and supports specifically for accelerating green transformation in organised industrial zones is another focus as a part of the financial needs. Considering the life cycle of products, impacts of raw materials across the whole value chains is of great importance. In that regard, facilitating access to financial resources for mining investments compatible with circular economy is particularly critical.

SMEs have much of importance in transition to circular economy. The issue of providing grants and/or non-refundable incentives and extending financial support to SMEs is important. Also, to accelerate the transition, encouraging start-up investments working on circular economy should be increased.

Based on this framework and the EU CEAP context, general and specific financial needs can be listed as follows.

General	- To find and raise financing and incentives for circular economy practices for private and public sectors in Türkiye - To improve the way and extent of accessing international financial resources and support for this area - To mobilize financial resources for the transition towards circular economy, especially for SMEs - To review the existing financial supports to be used for transforming existing businesses or creating new ones more efficiently - To develop clear evaluation criteria for supporting and incentivizing circular economy related initiatives and practices - To take measures for triggering investments and investment financing for private sector
A Sustainable Product Policy Framework	- To allocate or identify financial resources for completing the conversion process and relevant investments related to the requirements associated with the Sustainable Product Policy Framework - Dedicate financial sources for supporting R&D and commercialization projects in this area
Key product value chains	- To allocate or identify financial resources for completing the conversion process and relevant investments related to the requirements associated with all key product value chains - To dedicate financial sources for supporting R&D and commercialization projects associated with the circularity of key product value chains

Less waste more value	- To develop financial support opportunities for creating specialized industrial zones for the waste sector. - To dedicate financial sources for supporting R&D and commercialization projects for waste reduction and waste valorization opportunities
Making the circular economy work for people, regions and cities	- To mobilize financial resources for circular economy related capacity building, training and social business initiatives - To mobilize financial resources for strengthening local initiatives and circular city concepts
Crosscutting actions	- To develop a concrete framework for integrating carbon reduction impacts of circular economy projects to the financial appraisal processes - To develop a mechanism for creating a synergy between carbon reduction and circular economy investments so that additional financing opportunities are provided.
Leading efforts at global level	- Lack of a concrete step in implementing the taxonomy legislation of the EU for assessing and financing relevant investments - Insufficient international financial resources diverted to circular economy initiatives in Türkiye
Monitoring the progress	- To dedicate financial resources for establishing a circular economy related data collection and monitoring system

6. POSSIBLE SOLUTIONS/INTERVENTIONS AND RESPONSIBLE INSTITUTIONS TOWARDS FURTHER CE ACTIONS

6.1. Possible Solutions for Legislative Gaps and Needs

Development of new policies and establishment of the legislative infrastructure for all areas (environment/economy/social) to promote circular economy can be realized by working together with all relevant public, civil society, industry, and private sector stakeholders on the concepts of circularity and sustainability.

The bottom-line to establish new legal framework is to restructure the existing framework in line with the EU taxonomy and the circular economy action plan. For example, within the scope of the Sustainable Product Initiative, our country's strategy in compliance with recycling targets for priority sectors and mandatory recycled content criteria should be determined.

Apart from the harmonization with current CE policies in the EU, legislative studies to reduce production and consumption, especially single use plastics should be carried out. During these processes, general and sectoral developments regarding Integrated Pollution Prevention and Control (IPPC) Best Available Techniques in the circular economy field could provide benefit.

With all these, the necessary legislation on the Turkish side, in line with the Customs Union process, focusing on the target of free movement of goods should be carried out to be able preserved and strengthened our position in international trade.

To achieve these, the National Circular Economy Action Plan should preserve sectoral balances and consider each sector’s needs and problems. Therefore, detailed analyses based on sectors should apply carefully and solution proposals in terms of legislation, infrastructure, governance, finance-investment and human resources should be developed. The National Waste Management and Action Plan (2023-2035) has been revised in accordance with the circular economy principles, and it is important in terms of strengthening the implementation mechanisms and associating them with the circular economy action plan.

Product policies should be development in line with the circular economy principles. This includes a development of legislative work for the standardization of production and the execution of market surveillance by the relevant authorities. Moreover, it is necessary to identify eco-design requirements for products, develop standards for material efficiency and follow the changes in the EU's chemicals legislation and maintaining harmonization studies. Considering the EU’s efforts and sectoral insights product passport/ digital traceability of the products is also another subject that should be supported through relevant regulations.

To promote industrial symbiosis applications legal regulation in which the concept of industrial symbiosis is defined and the framework of implementation is regulated should be established. Also, the legislation should be regulated in a way that would encourage the implementation of industrial symbiosis practices (e.g., facilitating processes) by eliminating uncertainties in processes such as permits, and licenses related to industrial symbiosis applications. Furthermore, expanding alternative raw material use practices, increasing and

sharing good practices and involving relevant stakeholders (NGOs, universities, etc.) in this process are also crucial.

New policy instruments should include the introduction of appropriate taxation, etc. instruments (e.g. storage tax). In this context, incentives, credit and tender priorities could be arranged to promote companies in their circular achievement (for example, tax exemption for companies that fulfil the requirements of the legislation.) and to do so preventing unfair competition between companies. Another point is the reconsideration of all legislation on public procurement, tax such as, trade within the scope of circular economy, determining the use of recycled products in public tenders, energy efficiency etc.

Existing waste management legislation should be reviewed to facilitate circular economy applications. Development of the legislation and notification systems for the use of waste as raw material by moving away from the conventional waste management approach and creating a structure that will allow different applications could facilitate the process by taking the industry's opinion in revision of waste management legislation to be made.

In line with the developments on the legislation, waste recycling and recovery targets should be reviewed and effective supervision and sanctions should be applied in line with the targets to be determined. The accuracy of the waste data collected by declarations should be ensured by improving waste declaration system.

The current legal framework for waste management is being developed in line with circular economy measures. On the other hand, the legal framework for the import of waste without harming the environment should be re-evaluated by considering the current developments in EU policies.

For all sector, the relevant legislations should be reviewed and developed in line with circular economy principles. The scope of the legislations should support and encourage domestic and national recycling within the scope of the legislation.

For circular economy friendly management of construction and demolition waste, a methodology for reducing construction and demolition waste from urban transformation by revising the Law on the Transformation of Areas Under Disaster Risk and its related regulation and other relevant legislation with a circularity perspective should be established. Additionally, standards for the use of rubble in different areas with regard to building and demolition waste should be established. Also, for more effective urban transformation, the electrical/electronic wastes should be classified within themselves.

Regarding the batteries used in electric vehicles in the automotive industry, the definition and waste management in the Waste Batteries and Accumulators Control Regulation should be updated and its recycling as a secondary product should be evaluated. Possible Solutions for Infrastructure Gaps and Needs

For filling in gaps and meeting the needs associated with awareness raising activities, increasing written and visual promotional campaigns, preparing guides as well as organizing trainings on circular economy and recycling in educational institutions can be considered. Integration of the topics such as circular economy, climate change, and sustainability into the

education curriculum can bring effective and long-term impacts. Organizing trainings and preparing sources on circular economy and particularly the EU CEAP and carrying out special information and awareness activities for SMEs are the possible solutions also suggested by the stakeholders.

There is still room for improvement for ensuring that waste is seen as a resource and disposed of in separate containers to be collected and reused. Developing the capacity for the collection of waste by households, moving away from the conventional waste management approach and placing the point of view of using waste as raw material as well as raising awareness about the benefits of reusing treated wastewater are even more specific areas to be focused on.

In that regard, increasing the interaction and collaboration between all relevant the parties and executing joint studies and pilot applications would be a key solution especially for industry-based scientific studies. Strengthening university-industry cooperation on the circular economy is a good example in this sense. Innovation priorities and R&D needs of the sectors for transitioning to the circular economy should be identified and existing supports should be mobilized accordingly. All such efforts should be made not only for activities related to waste recycling, but also on prolonging the product life cycle, reducing waste generation, etc.

As an infrastructure related topic, more efficient use of digital systems, informatics and software solutions, considering also the digital passport and traceability requirements is also critical. Execution and promotion of technical studies and establishing relevant infrastructures for the valorisation of wastes and industrial symbiosis applications especially in OIZs is another priority for improving circularity.

Certification, accreditation, and inspection infrastructures for the provision of criteria related to circular economy in products should be established, relevant standards, inspections and auditing mechanisms should be developed eco-label system should be disseminated.

6.2. Possible Solutions for Institutional Gaps and Needs

Regarding the institutional gaps and needs in local and regional government regarding circular economy, certain solutions were proposed by the stakeholders: In order to standardise circular economy practices, establishing and centrally coordinating and monitoring governance mechanisms that differ by region with the participation of relevant institutions is critical. Collaboration, strengthening and systematizing information sharing, cooperation and coordination between institutions and units are essential in local and regional governments and between regional development agencies and also regional development administration presidencies. Local and regional governments are suggested to make collaborations with stakeholders such as NGOs, citizens, universities and sector assemblies on circular economy. For stakeholder engagement it is important to improve knowledge sharing and cooperation among institutions and other units.

The same situation is valid for the private sector and that is why both sectors need to be communicating with their stakeholders more efficiently for circular economy related studies. For public sector, the Ministry of Environment, Urbanization and Climate Change and the Ministry of Industry and Technology may act in cooperation with each other for leading the circular economy transitioning process. Besides, determining the roles of the stakeholders,

obtaining the data needed in the sector from a single source and sharing data among the stakeholders may be also considered. This can be provided by the establishment of a stakeholder commission to carry out studies on the circular economy. Also regionally carrying out coordinated activities with local stakeholders is vital for transparent governance on circular economy.

Encouraging central management of local and regional government is essential to overcome existing authorization gaps. There is a need for qualified human resources in public and private sector. As a solution establishing the circular economy departments in all sectors, technical training of qualified and sufficient personnel, increasing interest and number of technical staff would be very helpful. All suggested solutions should be in line with refinement of training and resources on the circular economy and EU CEAP. To prevent circular economy actions to be limited with only waste management, building technical and human resources capacity is vital. Furthermore, private sector should have a strategical approach towards circular economy and set concrete waste reduction and other targets with life cycle approach especially focusing on product design.

6.3. Possible Solutions for Financial Gaps and Needs

Regarding the financial issues, first of all, it is recommended by the stakeholders to develop and implement financial instruments that support the transition to the circular economy, and to increase financial incentives that can be utilized for valorising wastes and residues. Supporting the recycling and waste management facilities of OIZs with grants or low-interest loans from domestic sources and exploring ways of accessing international financial resources are also suggested.

Establishment of specialized zones for the waste sector, removing obstacles in front of their industrialization and support the recycling and waste management facilities to be built by the OIZs could be a solution for creating an extensive impact. Furthermore, international financial resources should be searched and should be used for the required investments. For public and private sectors, transition to circular economy should be promoted by finding especially international or internationally supported financial resources, credit, and guarantee mechanisms suitable for the circular economy. It is recommended that the funds collected for recovery purposes, as well as international and nationally sourced investments and funds, should be used to support the system.

Providing additional resources and tax support to companies operating in this field within the scope of green financing will support this urgent transition. In addition to the current and proposed circular economy activities in the industry, providing appropriate financing mechanisms for urban transformation compatible with the circular economy is also very important for just and holistic transition. It is recommended that National Direct Investment opportunities, together with international resources, could be used for circular economy investments for bringing value-added, knowledge-intensive, and qualified employment investments to Türkiye. Establishing the legislative infrastructure regarding the amendments made in the Environmental Law regarding the implementation of public-private partnership models to carry out the design, construction and operation processes of waste and wastewater treatment plants from a single source and to operate them more efficiently is important in the

transition to the circular economy. Supporting businesses that develop R&D studies and innovative solutions, creating financial support for resource sharing between companies and identifying different evaluation possibilities of wastes and materials in the value chain is proposed as a solution. Lastly, demonstrating gains with pilot applications to support companies and direct available resources is much of importance.

6.4. Suggestions for Basic Interventions

In light of all the evaluations made in the previous section, possible interventions considering legislative, infrastructural, institutional and financial aspects are suggested below with the holistic point of view of circular economy.

Table 13: Recommendations for Basic Interventions for Türkiye's Transition to a Circular Economy

	Legislative	**Institutional**	**Infrastructural**	**Financial**
General	**Interventions:** - A framework legislation for circular economy as a whole to set the basic principles and requirements - A circular economy action plan for Türkiye that also includes specific legislative measures for seven major EU CEAP headings - A plan for incorporating circular economy into the EU harmonization process	**Interventions:** - Improvement in circular economy related awareness raising activities at institutions - Improvement of institutional capacity of national and local institutions for circular economy - Improvement of cooperation and interaction among stakeholders	**Interventions:** - Awareness raising for circular economy in all segments of society - Improvement in existing infrastructure, technologies and practices for waste management - Scientific and technical studies on circular economy besides adequate R&D and P&D studies on circular economy - To establish mechanisms for collecting data on the circular economy	**Interventions:** - Creation of financing and incentives for circular economy practices for private and public sectors in Türkiye - Improvement of extent of accessing international financial resources and support for this area - Mobilization of financial resources especially for SMEs - Review of the existing financial supports to be used for transforming existing businesses or creating new ones more efficiently
	Possible actors to be involved: MoEUCC, MoT, MoIT, MoFA	**Possible actors to be involved:** MoEUCC, all relevant institutions, municipality unions, municipalities	**Possible actors to be involved:** MoEUCC, TUBITAK, TURKSTAT	**Possible actors to be involved:** MoEUCC, KOSGEB, financial institutions
A Sustainable Product Policy Framework	**Interventions:** - A harmonization plan for Eco-Design Directive (with the upcoming changes) and the associated product bases communiques - Starting a dialogue for reviewing Consumer Protection Law in accordance with the related requirements - Starting a dialogue for reviewing Public Procurement Law for integrating GPP principles - A review of the possible EPR extension in terms of products and implementation	**Interventions:** - Improvement of institutional structures for facilitating the implementation of the relevant requirements - Improvement of relevant auditing mechanisms and institutional structures	**Interventions:** - Development of skills and knowledge on eco-design and circular design approaches - Establishment of sufficient and easily accessible repair and maintenance infrastructures - Raising consumer awareness on circular products - Establishment of infrastructures to develop digital systems for products	**Interventions:** - Allocation or identification of financial resources for completing the conversion process and relevant investments related to the requirements of the Sustainable Product Policy Framework - Dedicated financial sources for supporting R&D and commercialization projects in this area
	Possible actors to be involved: MoEUCC, MoIT, Public Procurement Authority	**Possible actors to be involved:** MoEUCC, MoIT	**Possible actors to be involved:** MoEUCC, MoIT, MoE	**Possible actors to be involved:** MoEUCC, KOSGEB, TUBITAK, financial institutions

Key Product Value Chains - Electronics and ICT	**Interventions:** - A plan for monitoring and effective harmonization of EU eco-design regulations on electronics and ICT	**Interventions:** - Strengthened structures for accelerating the implementation of the requirements related to all key product value chains - Improvement in the relevant auditing mechanisms and institutional structures	**Interventions:** - Improvement in collection, sorting and recycling infrastructures for all of the value chains, ability to provide guarantees in resale markets, certification scheme for recyclers - Establishment of sufficient and easily accessible repair and maintenance infrastructures - Establishment of infrastructures for implementing EPR requirements - Digital systems for different purposes such as traceability, etc.	**Interventions:** - Allocation or identification of financial resources for completing the conversion process and relevant investments related to the requirements associated with all key product value chains - To dedicate financial sources for supporting R&D and commercialization projects associated with the circularity of key product value chains
	Possible actors to be involved: MoEUCC, MoIT, AGİD, TÜBİSAD,			
Key Product Value Chains - Batteries and vehicles	**Interventions:** - A plan for improving and extending EPR regulations			
	Possible actors to be involved: MoEUCC, MoIT, OSD, TAP, AKÜDER, TÜMAKÜDER			
Key Product Value Chains - Packaging	**Interventions:** - Improvement in the packaging related regulations in terms of packaging reduction, increasing recycled content, etc.			
	Possible actors to be involved: MoEUCC, MoIT, ASD, PAGEV, FASD, SEPA, MASD, OMÜD, KASAD etc.			
Key Product Value Chains - Plastics	**Interventions:** - Improvement in the packaging related regulations in terms of single-use plastics reduction, increasing recycled content and recyclability, as well as microplastic issue, etc.			
	Possible actors to be involved: MoEUCC, MoIT, PAGEV, TURMEPA, GEKADER	**Possible actors to be involved:** MoEUCC, MoIT, related sectoral organizations	**Possible actors to be involved:** MoEUCC, all related sectoral organizations	**Possible actors to be involved:** MoEUCC, KOSGEB, TUBITAK, financial institutions
Key Product Value Chains - Textiles	**Interventions:** - Improvement in textile related regulations for adapting the recent EU Textile Strategy, including eco-design, EPR, collection-recycling requirements			
	Possible actors to be involved:			

	MoEUCC, MoIT, İHKİB, TGSD			
Key Product Value Chains - Construction and buildings	**Interventions:** - A roadmap for timely complying with the specific rules and criteria on construction products when they are in place. - Improvement in relevant regulations for the betterment of waste reduction, waste collection and recycling practices			
	Possible actors to be involved: MoEUCC, MoIT, Türk Çimento, Türkiye Municipalities Union, Marmara Municipalities Union			
Less waste more value	**Interventions:** - A legislation for implementing end-of-waste criteria - Improvement in legislation for supporting industrial symbiosis - Review of the current waste shipment (import) procedures - Improvement of waste management legislation to collect circularity related data	**Interventions:** - Strengthened structures for accelerating the implementation of the requirements related to waste reduction and creating more value - Improvement in the relevant auditing mechanisms and institutional structures	**Interventions:** - Improvement in collection, sorting and recycling infrastructures for all of the value chains - Improvement in the infrastructures for implementing EPR requirements - Improvement of infrastructure and technologies used for recovery practices, etc. - Improvement of the infrastructure and capacity in the use of secondary raw materials - Creation and dissemination of knowledge on household waste source separation practices	**Interventions:** - Development of financial support opportunities for creating specialized industrial zones for the waste sector. - Dedication of financial sources for supporting R&D and commercialization projects for waste reduction and waste valorization opportunities
	Possible actors to be involved: MoEUCC, MoIT, MoT, MoENR, Türkiye Belediyeler Birliği, Marmara Belediye, GEKSANDER, TÜDAM, TURKSTAT	**Possible actors to be involved:** MoEUCC, MoIT, related sectoral organizations	**Possible actors to be involved:** MoEUCC, MoIT, all related sectoral organizations, municipality unions, municipalities, recovery plants and associations	**Possible actors to be involved:** MoEUCC, KOSGEB, TUBITAK, financial institutions

Making the circular economy work for people, regions and cities	**Interventions:** - Legislative measures for integrating circular economy in education, training and entrepreneurship related practices and support schemes - Inclusion of circular economy in regional development plans and strategies	**Interventions:** - Programs for creating human resources to work on circular economy and for improving qualifications, training, and experience.	**Interventions:** - Improvement of the infrastructures for supporting skills development - Improvement of the supporting mechanisms and initiatives for encouraging circular economy transition	**Interventions:** - Mobilization of financial resources for circular economy related capacity building, training and social business initiatives - Mobilization of financial resources for strengthening local initiatives and circular city concepts
	Possible actors to be involved: MoEUCC, MoIT, KOSGEB, TOBB, TUBITAK	**Possible actors to be involved:** MoEUCC	**Possible actors to be involved:** MoEUCC, MoE	**Possible actors to be involved:** MoEUCC, KOSGEB, regional development agencies
Crosscutting actions	**Interventions:** - Inclusion of circular economy in carbon reduction and climate change related regulations and procedures	**Interventions:** - Dedicated institutional structures for establishing concrete links between climate change and circular economy practices	**Interventions:** - Development of skills for analyzing how the impact of circularity on climate change mitigation and adaptation can be measured - Establishment of adequate technical infrastructure to develop carbon removal practices through circular initiatives - Establishment of infrastructure to develop carbon certification mechanisms based on circular initiatives	**Interventions:** - Development of a concrete framework for integrating carbon reduction impacts of circular economy projects to the financial appraisal processes - Development of a mechanism for creating a synergy between carbon reduction and circular economy investments so that additional financing opportunities are provided
	Possible actors to be involved: MoEUCC	**Possible actors to be involved:** MoEUCC	**Possible actors to be involved:** MoEUCC	**Possible actors to be involved:** MoEUCC, MoIT, regional development agencies
Leading efforts at global level	**Interventions:** - Review and integration of the EU taxonomy legislation for assessing and financing relevant investments	**Interventions:** - Improvement in the institutional structures for facilitating the circular economy related interactions and engagements at global level	**Interventions:** - Raising awareness of most of the stakeholders on international agreements related to the global efforts for circular economy	**Interventions:** - Implementation of the taxonomy legislation of the EU for assessing and financing relevant investments - Diversion of international financial resources to circular economy initiatives in Türkiye
	Possible actors to be involved: MoEUCC, KOSGEB, Turkish Presidency Strategy and Budget	**Possible actors to be involved:** MoEUCC, MoFA, MoT	**Possible actors to be involved:** MoEUCC, MoFA, MoT	**Possible actors to be involved:** MoEUCC, MoFA, MoT

	Department, finance institutions			
Monitoring the progress	**Interventions:** - A legal framework for circular economy monitoring and for collecting specific data for monitoring	**Interventions:** - Improvement in human resources and dedicated departments at national and local governments for collecting data on circular economy metrics and monitoring the progress	**Interventions:** - Improve the data collection and processing infrastructures for developing the related database for circular economy	**Interventions:** - Dedication of financial resources for establishing a circular economy related data collection and monitoring system
	Possible actors to be involved: MoEUCC, MoIT, TURKSTAT	**Possible actors to be involved:** MoEUCC, all relevant insitutions	**Possible actors to be involved:** MoEUCC, MoIT, TURKSTAT	**Possible actors to be involved:** MoEUCC, MoIT, TURKSTAT

7. IMPACTS

A detailed analysis will be conducted on the impacts of transitioning to a circular economy in Türkiye within the Sectoral Impact Assessment (SIA) Study under Activity 2.1.2. This study will aim at identifying the effects of the introduction of the measures contained in the Circular Economy Package on the various sectors of the Turkish economy. It will be based on company Visits and a consultation Workshop. Finally, the key results from the market survey and circular economy workshops for this overall assessment process are discussed and summarized below.

Transitioning to a circular economy, leads a positive impact in every area, especially in terms of the environment, and effects such as reducing marine litter, reducing the use of plastic, and accelerating the developments for waste reduction and prevention will come to the fore. Stakeholders stated that meaningful data can be produced by developing and implementing a comprehensive national strategy for the circular economy, and by determining strategic targets that will contribute to the development of the capacities of central and local governments, which have a great role in waste management.

Also they indicated that new workforce and opportunities will be provided for work and human resource needs, facilities will force innovation and development in terms of environmental investments and technology, cleaner production will emerge as an inevitable necessity, awareness will increase throughout the society, and meaningful data can be produced by determining strategic goals.

Resource efficiency, waste prevention and reduction are the most important issues today. It is stated that this subject includes wastewater treatment plants, especially water, organic matter recovery and energy production. It is thought that the circular economy is an opportunity to overcome climate change, which is a global environmental problem. In addition, the increasing amount of microplastic, metal, chemical, etc. wastes around the world cause destruction in the oceans and marine ecosystems, reduce the number of coral reefs that serve as an important carbon sink, as well as threaten sustainable fisheries.

Regarding plastics, it is extremely important to limit or phase out single-use plastics. Establishing an effective collection system in Türkiye, collecting plastics, recycling them, and clearing the seas from waste (marine litter) are extremely important, and these issues are constantly on the agenda in international platforms.

Making the circular economy functional is also related to the prevention of biodiversity loss. There is an increase in harmful and invasive species worldwide, which reduces natural biodiversity. The circular economy is brought into operation by trying alternative ways of consumption for endangered species. The positive contributions of the circular economy come to the fore in ensuring the sustainability of ocean and marine ecosystems.

The main theme of the circular economy can be shown as the production of sustainable and durable products and the full participation of the stakeholders in the whole life cycle of the products in the circular economy.

It can be said that the most effective way to combat environmental problems is to design products in an environmentally friendly, reusable, and fully recyclable manner, as well as to change consumption habits and to raise awareness and information effectively. It is considered that the production and use of single-use products will also be reduced in this way.

Ensuring the durability and reusability of products, at the same time taking necessary measures to reduce hazardous chemicals, increasing energy and resource efficiency, enabling remanufacturing and high-quality recycling by using high recyclable content in products, reducing carbon and environmental footprints, limiting single use and long-lasting and re-use will be important in the transition process to the circular economy.

The zero-waste approach will ensure that resources are used more efficiently, the causes of waste generation are reviewed, and waste generation is prevented or minimized. The zero-waste approach will also contribute to this process in terms of ensuring that the waste is collected separately at the source and recovered, in case of occurrence.

8. ANNEXES

Annex 1 - EU First Circular Economy Action Plan Progress and National Context

Actions	Timetable	Progress in the EU	National Context
Production			
Emphasis on circular economy aspects in future **product requirements under the Ecodesign directive.**	2016 onwards	**10 ecodesign implementing regulations (1st October, 2019)**[145] 1. Refrigerators (2019/2019) 2. Light sources (2019/2020) 3. Electronic displays (including televisions) (2019/2021) 4. Washing machines (2019/2022) 5. Washing machines and dryers (2019/2023) 6. Refrigerators with a direct sales function (e.g. fridges in supermarkets, vending machines for cold drinks) (2019/2024) 7. Electric motors (2019/1781) 8. External power suppliers (2019/1782) 9. Power transformers (2019/1783) 10. Welding equipment (2019/1784) Eight of these bylaws revise already existing requirements, while refrigerators with a direct sales function and welding equipment are regulated for the first time.	1. Communiqué on Environmentally Responsible Design Requirements of Cooling Devices (2019/2019/EU) (SGM:2021/7) 2. Communiqué on Environmentally Responsible Design Requirements for Light Sources and Separate Control Gears (2019/2020/EU) (SGM:2021/11) 3. Communiqué on Environmentally Responsible Design Requirements for Electronic Displays (2019/2021/EU) (SGM:2021/5) 4. Communiqué on Environmentally Friendly Design Requirements for Household Dishwashers (2019/2022/EU) (SGM:2021/1) 5. Communiqué on Environmentally Responsible Design Requirements for Household Washing Machines and Washing Machines with Dryers (2019/2023/EU) (SGM:2021/3) 6. Communiqué on Environmentally Responsible Design Requirements for Refrigeration Appliances with Direct Selling Function (2019/2024/EU) (SGM:2021/9) 7. Communiqué on Environmentally Responsible Design Requirements for Electric Motors and Variable Speed Drives (2019/1781/EU) (SGM: 2021/16) 8. Communiqué on Environmentally Responsible Design Requirements for External Power Suppliers (2019/1782/EU) (SGM:2020/5) 10. Communiqué on Environmentally Responsible

[145] https://ec.europa.eu/commission/presscorner/detail/en/qanda_19_5889

Actions	Timetable	Progress in the EU	National Context
			Design Requirements for Welding Equipment (2019/1784/EU) (SGM:2021/17) The EU Eco-design Directive for power transformers does not yet have a corresponding regulation in the national law.
Ecodesign work plan 2015-2017 and **request to European standardisation organisations** to develop standards on material efficiency for setting future Ecodesign requirements on durability, reparability and recyclability of products.	December 2015	**The Ecodesign Work Plan for 2016-2019**[146], proposing a list of new product groups (building automation and control systems, electric kettles, hand dryers, lifts, solar panels and inverters, refrigerated containers, high-pressure cleaners) was published on 30.11.2016.	-
Proposal for an **implementing regulation** on televisions and displays	End 2015 or beginning 2016	**Eco-design Regulation (2019/2021)** [147] for electronic displays (including TVs)	Communiqué on Ecodesign Requirements for Electronic Displays (2019/2021/AB) (SGM:2021/5)
Examine options and actions for a more coherent policy framework of the different strands of work of EU product policy in their contribution to the circular economy	2018	**The Staff Working Document on Sustainable Products in a Circular Economy**[148] examines the EU product policy framework. It identifies high priority product for circularity and analyses to what extent the relevant EU policies are mutually reinforcing and supporting circular economy. It finds that ensuring consistent implementation of existing EU product policies is therefore key, especially where multiple tools apply to the same product.	-
Include guidance on circular economy into **Best Available Techniques reference documents (BREFs)** for several industrial sectors	2016 onwards	Since 2015, **Best Available Techniques reference documents** including guidance on circular economy have been adopted for: • Non-ferrous metals	-

[146] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016DC0773&from=EN
[147] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R2021&from=EN
[148] https://ec.europa.eu/environment/pdf/circular-economy/sustainable_products_circular_economy.pdf

Actions	Timetable	Progress in the EU	National Context
		• Common Waste Water and waste Gas Treatment / Management Systems in the Chemical Sector • Intensive Rearing of Poultry and Pigs • Large Volume Organic Chemicals • Large Combustion Plants	**Related Planned Actions** Türkiye's Green Deal Action Plan: 2.3.1. Preparing the national action plan and implementation schedule for implementing EU Integrated Pollution Prevention and Control (IPPC) legislation (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.2. Preparing both the general and sectoral national legislation that includes EU Integrated Pollution Prevention and Control (IPPC) legislation and Best Available Techniques reference documents (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Guidance and promotion of best practices in the mining waste management plans	2018	With a view to increase the energy efficiency of mineral extraction, thus reducing its carbon footprint, and the recovery of extractive waste by recycling and reusing, the Commission services have prepared **guidance based on the best practices in the mining waste management plans**.[149]	-
Establishing an open, **pan-European network of technological infrastructures for SMEs** to integrate advanced manufacturing technologies into their production processes	2016	The EU funded project **Ket4CleanProduction has established a platform**[150] that gathers technology infrastructures, SME users and suppliers of innovative advanced manufacturing technologies to upgrade their production processes towards resource and energy	- **Related Planned Actions**

[149] http://ec.europa.eu/environment/waste/mining/pdf/guidance_extractive_waste.pdf
[150] https://www.ket4sme.eu

Actions	Timetable	Progress in the EU	National Context
		efficiency and sustainability. The platform grants access to a network of experts that can provide support for the transition to a Factory of the Future.	Türkiye's Green Deal Action Plan: 2.6.1. Tracking the revisions in the EU chemicals legislation and completing the process of harmonizing to EU legislation. (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Examine **how to improve the efficiency and uptake** of the EU Eco-Management and Audit Scheme (EMAS) and the pilot programme on environmental technology verification (ETV)	2017	**The EMAS fitness check report**[151] was adopted on 30 June 2017. It evaluates the performance of EMAS, in particular its relevance, effectiveness, efficiency, coherence and EU added value. It confirms that EMAS is a useful tool at organisational level, and that EMAS registered organisations continuously improve their environmental performance on all core indicators (energy and material efficiency, water consumption, waste generation, biodiversity and emissions). The Commission has obtained the commitment of Member States to work for increasing the uptake of the scheme.[152]	-
Develop an improved **knowledge base and support to SMEs** for the substitution of hazardous substances of very high concern	2018	Two actions have been put forward to facilitate the substitution of substances of potential concern used in industrial processes and access to innovative technologies by SMEs: • The project namely Substitution of Chemical Substances of Potential Concern (Phase II)", EASME/COSME/2017/025 to facilitate and disseminate best practices; • Support of the European Resource Efficiency Excellence Centre.	-

Consumption

[151] http://ec.europa.eu/environment/ecolabel/documents/Report_from_the_Commission.pdf
[152] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52017DC0355&from=EN

Actions	Timetable	Progress in the EU	National Context
Better enforcement of existing guarantees on tangible products, accompanied by a **reflection on improvements** (upcoming Commission proposal for online sales of goods, and Fitness Check of consumer legislation)	2015-2017	• **The Directive on the online sale of goods (2019/771)** [153], was amended in 2019 to expand its scope to cover sales of goods offline. It includes provisions, such as on the extension of the reversal of the burden of the proof period which will help consumers to apply their legal guarantee rights. • **The Fitness Check of the Consumer and Marketing Law**[154] was finalized in May 2017. • **The Consumer Protection Cooperation (CPC) Regulation (2017/2394)** [155] which enables consumer protection authorities to cooperate in case of trans-border infringements and to fight against widespread infringements was revised in December 2017. • As a follow-up to **the Fitness Check, the 'New Deal for Consumers' package**[156] 19 was adopted by the Commission on 11 April 2018. The "New Deal" and the revised CPC Regulation aim to strengthen EU consumer rights and their enforcement. This will help to deter unfair commercial practices such as misleading and unfounded environmental claims ('greenwashing'), undisclosed planned obsolescence practices.	-
Action on false green claims, including **updated guidance** on unfair commercial practices	2016	**The revised guidance**[157] incorporates key principles, developed by a multi-stakeholder group, on the content, presentation and documentation of environmental claims. It also clarifies the application of the Directive on unfair obsolescence practices – which will allow a better enforcement by market surveillance authorities in this area.	-

[153] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019L0771
[154] https://ec.europa.eu/newsroom/just/items/59332
[155] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32017R2394&from=EN
[156] https://ec.europa.eu/newsroom/just/items/620435/en
[157] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52016SC0163&from=EN

Actions	Timetable	Progress in the EU	National Context
Analysis of the possibility to propose horizontal requirements on repair information provision in the context of Ecodesign	2018	A **reparability scoring system** is being developed by the Joint Research Center (JRC).[158]	-
REFIT of Ecolabel, to be followed by actions to enhance its effectiveness	2016	Following the conclusion of **the EU Ecolabel fitness check**[159] in June 2017, the Commission is strengthening its strategic approach to focus on product categories with significant uptake rate, and its monitoring and communication activities. **The EU Ecolabel catalogue**[160] has been improved.	-
Assessment of the possibility of an **independent testing programme** on planned obsolescence	2018	In October 2017, the Commission launched a call for an **independent testing programme**[161] under H2020 to identify factors that cause premature obsolescence practices and way to address them. The programme is expected to be delivered in 2023.	-
Subject to evaluation of the current ongoing pilots, explore the possible uses of the Product Environmental Footprint to measure and communicate environmental information	2016 onwards	Between 2013 and 2018, the Commission tested the application of the **Product and Organisation Environmental Footprint methods** on specific product groups and sectors. Furthermore, it tested approaches to verifying and communicating the resulting information. About 300 companies and more than 2000 stakeholders (including NGOs, public administrations, academia) worked for 5 years to test the methods. The results of the pilot phase are now available[162] and a summary is presented in the Staff Working Document on Sustainable Products in a Circular Economy.	-

[158] https://publications.jrc.ec.europa.eu/repository/handle/JRC114337
[159] https://ec.europa.eu/environment/ecolabel/documents/Report_from_the_Commission.pdf
[160] https://ec.europa.eu/ecat/
[161] https://prompt-project.eu/
[162] https://ec.europa.eu/environment/eussd/smgp/PEFCR_OEFSR_en.htm

Actions	Timetable	Progress in the EU	National Context
Action on Green Public Procurement: enhanced integration of circular economy requirements, support to higher uptake including through training schemes, reinforcing its use in Commission procurement and EU funds	2016 onwards	New/revised **EU green public procurement**[163] criteria integrating circular economy requirements published since December 2015 includes computers and monitors, textiles, furniture, indoor cleaning services, paints and varnishes, road design, construction and maintenance, office building design, construction and maintenance	-

Waste Management			

Revised legislative proposal on waste	Dec 2015	The revised legislation was adopted by the co-legislators on 30 May 2018 and entered into force on 4 July 2018. As a result of the revision, more targets were added, especially to ensure that circular economy principles are applied to waste management. Revised directives;
		• **Waste Framework Directive** 2018/851 (2008/98/EC)[164]
		• **Landfill Directive** 2018/850 (1999/31/EC)[165]
		• **Packaging Waste Directive** 2018/852 (94/62/EC)[166]
		• With the no. 2018/849
		  ○ **WEEE Directive** (2012/19/EC)[167]
		  ○ **Waste Batteries and Accumulators Directive** (2006/66/EC)[168]
		  ○ **End-of-Life Vehicles Directive** (2000/53/EC)[169]
			• Regulation(s) Amending the Waste Management (Landfill) Regulation (24.06.2022-31876 / 19.03.2021-31428 / 26.12.2019-30990)
			• Regulation on the Management of Packaging Waste (26.06.2021-31523)
			• Regulation on the Management of Waste Electrical and Electronic Equipment (26.12.2022-32055)
			
			Revisions to the Waste Framework Directive, the Landfill Directive, the Packaging Waste Directive, the Waste Battery and Accumulators Directive and the End-of-Life Vehicles Directive have not been transposed into national legislation.
			
			For example, with the revision of the Waste Framework Directive, various provisions have been introduced regarding the separate collection and recycling of textile and municipal bio-waste by 2025.

[163] https://ec.europa.eu/environment/gpp/eu_gpp_criteria_en.htm
[164] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32008L0098&from=EN
[165] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01999L0031-20180704&from=EN
[166] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:01994L0062-20180704&from=EN
[167] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02012L0019-20180704&from=EN
[168] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02006L0066-20180704&from=EN
[169] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02000L0053-20200306&from=EN

Actions	Timetable	Progress in the EU	National Context
			These issues have not been transposed to the national Waste Management Regulation. **Related Planned Actions** "Revised EU Waste Directives Adaptation Report" to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
	2015 onwards	**End-of-Life Vehicles Directive** (2000/53/EC) revised by 2018/849[170]	Revisions to the End-of-Life Vehicles Directive have not been transposed into national legislation. **Related Planned Actions** "Revised EU Waste Directives Adaptation Report" to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Stepping up **enforcement** of revised Waste Shipment regulation	2016 onwards	An **Implementing act**[171] adopted 28 July 2016 sets out a **preliminary correlation table** between customs and waste codes, which will help customs officials to identify more easily potential waste streams.	Waste Import Implementation Declaration (18330076/010.06/2599483-31.12.2021)[172]
Promotion of industry-led **voluntary certification** of treatment facilities for key waste/recyclate streams	2018 onwards	The promotion of voluntary schemes has been supported with targeted funding from Horizon 2020, in particular for developing verification of treatment facilities for key types of recyclates/waste containing significant amounts of critical raw materials.	-

[170] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02000L0053-20200306&from=EN
[171] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32016R1245
[172] https://webdosya.csb.gov.tr/db/ced/icerikler/2021-25-sayili-genelge-20220103145138.pdf

Actions	Timetable	Progress in the EU	National Context
		The CEWASTE H2020 project[173] aims at understanding existing recovery practices, standards and verification schemes; developing sustainability and traceability requirements and assurance system and related verification procedures.	
Initiative on waste to energy in the framework of the Energy Union	2016	**The Communication "The role of waste-to-energy in the circular economy"**[174] was adopted on 26 January 2017 with the aim to get more energy from less waste. It also clarifies the position of different waste- to-energy processes in the waste hierarchy; provides guidance to Member States on how to make better use of economic instruments and capacity planning; and identifies the technology and processes which currently hold the greatest potential to optimise energy and material outputs, taking into account expected changes in the feedstock for waste-to-energy processes.	-
Identification and dissemination of good practices in waste collection systems	2016 onwards	In 2015, a study[175] assessed the separate collection schemes for municipal waste in the capital cities of all EU Member States. Furthermore, the Horizon 2020 project ImpactPapeRec[176] on good practices in paper collection systems was completed in March 2018. **Guidelines on the implementation of separate collection** obligations and best practices, in particular focusing on key waste streams were adopted in 2020.[177]	- **Related Planned Actions** "Guideline for the collection of recyclable waste in line with the circular economy concept" to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

[173] https://cewaste.eu/
[174] https://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2017:0034:FIN:EN:PDF
[175] http://ec.europa.eu/environment/waste/studies/pdf/Separate%20collection_Final%20Report.pdf
[176] https://impactpaperec.eu/en/home/
[177] https://op.europa.eu/en/publication-detail/-/publication/bb444830-94bf-11ea-aac4-01aa75ed71a1

Actions	Timetable	Progress in the EU	National Context
Market for secondary raw materials			
Development of **quality standards** for secondary raw materials (in particular for plastics)	2016 onwards	CEN TC 366 Standardization of materials obtained from **End-of-Life Tyres (ELT)** CEN TC 249 Standardization of **recycled plastics**	TSE CEN/TS 17307 Material obtained from end-of-life tires - Granules and powders TSE CEN/TS 17308 Materials produced from end-of-life tires - Steel wire TSE CEN/TS 17045 Materials obtained from end-of-life tires - Quality criteria, recovery and recycling processes for the selection of repair tires TSE CEN/TS 17188 Materials produced from end-of-life tires (ELT) - Sampling method for granules and powders stored in big bags TSE CEN/TS 17189 Materials produced from end-of-life tires (ELT) - Determination of true density of granules - Method based on water pycnometry TSE CEN/TS 16861 Plastics – Recycled plastics – Determination of selected marker compounds in recycled polyethylene terephthalate (PET) used in foods TSE CEN/TS 17627 Plastics - Recycled plastics - Determination of solid pollutant contents
Proposal for a revised fertilisers regulation	Early 2016	**The new EU Fertilising Products Regulation (EU) (2019/1009)** [178] stimulates the European market for innovative organic fertilizers produced from by-products and recycled bio-waste. Thus, European farming will become much less dependent on imported minerals and fossil raw materials such as natural gas and phosphate rock.	Regulation on Fertilizers Used in Agriculture (Draft)[179]

[178] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02019R1009-20221003&from=EN
[179] https://www.tarimorman.gov.tr/BUGEM/Haber/715/Tarimda-Kullanilan-Gubrelere-Iliskin-Yonetmelik-Taslagi-Degerlendirme-Toplantisi-Baslamistir

Actions	Timetable	Progress in the EU	National Context
Proposed legislation setting minimum requirements for reused water for irrigation and groundwater recharge	2017	**A proposal for a Regulation on minimum requirements for water reuse (2020/741)** [180] sets minimum requirements for reused water for agricultural irrigation. It aims at encouraging the safe, efficient and cost-effective reuse of treated urban wastewater, thus turning a wasted resource into a valuable one for further use and addressing water scarcity.	The Reuse Areas and Criteria of Treated Wastewater have been published in the annex of the Communiqué Amending the Communiqué[181] on Technical Procedures for Wastewater Treatment Plants. [182]
Promotion of safe and cost-effective water reuse, including **guidance** on the integration of water reuse in water planning and management, **inclusion of best practices in relevant BREF**s, and support to innovation (through the EuropeanInnovation Partnership and Horizon 2020) and investments	2016-2017	In July 2016, the Commission issued **Guidelines on Integrating Water Reuse and Water Planning and Management in the context of the Water Framework Directive[183].** These guidelines encourage Member States to systematically consider water reuse when implementing the EU water legislation. Water saving, reuse and recycling is also considered in the development and review of **BREFs** for relevant (agro)industrial sectors under the scope of the Industrial Emissions Directive. • Common Waste Water and Waste Gas Treatment / Management Systems in the Chemical Industry • Intensive Poultry or Pig Raising • Food, Beverage and Dairy	- **Related Planned Actions** Türkiye's Green Deal Action Plan: 2.3.1. Preparing the national action plan and implementation schedule for implementing EU Integrated Pollution Prevention and Control (IPPC) legislation (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.3.2. Preparing both the general and sectoral national legislation that includes EU Integrated Pollution Prevention and Control (IPPC) legislation and Best Available Techniques reference documents (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)

[180] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32020R0741&from=EN
[181] https://www.resmigazete.gov.tr/eskiler/2022/10/20221025-11.htm
[182] https://www.resmigazete.gov.tr/eskiler/2022/10/20221025-11-1.pdf
[183] https://ec.europa.eu/environment/water/pdf/Guidelines_on_water_reuse.pdf

Actions	Timetable	Progress in the EU	National Context
Analysis and policy options to address the interface between chemicals, productsand waste legislation, including how to reduce the presence and improve the tracking of chemicals of concern in products.	2017	**The Commission Communication**[184] on options to address the interface between chemicals, product,s and waste legislations was adopted on 16 January 2018. Communication explores the four most critical issues identified in the way the legislation on chemicals, products, and waste work together and how these are hampering a circular economy development.	- **Related Planned Actions** Türkiye's Green Deal Action Plan: 2.6.1. Tracking the revisions in the EU chemicals legislation and completing the process of harmonizing to EU legislation. (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change)
Measures to facilitate waste shipment across the EU, including **electronic data exchange** (and possibly other measures)	2016 onwards	On 17 November 2021 European Commission adopted **proposal for news rules on waste shipments**. Covering all types of waste, the proposed regulation encompasses the following measures: • Strengthening the rules governing the export of waste. • More effectively addressing illegal waste exports. • Facilitating waste shipments in the internal market of the EU. • Classification of waste would be harmonised. Stricter conditions would be introduced for shipments of waste for incineration and landfilling.[185]	According to the Waste Management Regulation, the import of wastes of economic value as of the sector may be allowed subject to control. The principles regarding these permits are determined by the communique to be published by the Ministry of Trade in line with the opinion of MoEUCC. In December 2021, MoEUCC published the **Waste Import Practices Circular** in order to regulate the documents to be issued to the waste recovery/recycling facilities that will import certain non-hazardous wastes that are allowed to be imported, and the procedures and principles regarding the characteristics of the wastes to be imported.[186]
Further development of the EU **raw**	2016 onwards	A series of actions have been started to improve	-

[184] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018DC0032&from=en
[185] https://eur-lex.europa.eu/resource.html?uri=cellar:6c0588b1-4878-11ec-91ac-01aa75ed71a1.0001.02/DOC_1&format=PDF
[186] https://webdosya.csb.gov.tr/db/ced/icerikler/2021-25-sayili-genelge-20220103145138.pdf

Actions	Timetable	Progress in the EU	National Context
materials information system		information on raw materials: the **Raw Materials Information System (RMIS)**[187] launched by JRC in November 2017, the **Raw Materials Scoreboard**[188] of indicators, and several Horizon 2020 projects.	**Related Planned Actions** "National Circular Economy Monitoring Mechanism and Indicators" to be Developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

Sectorial action			
Plastics			
Strategy on plastics in the circular economy	2017	**The EU Strategy for Plastics**[189] was published on 16 January 2018 as part of the Circular Economy Package. In the same year, a Directive proposal on single-use plastics was prepared within the scope of the strategy and **the Single-Use Plastics Directive** entered into force in 2019.	The Single Use Plastics Directive has not yet been harmonized with national legislation. However, some measures envisaged within the scope of the Strategy for Plastics are met in various national legislation. It is also emphasized in the **Regulation on Control of Packaging Waste** that additional measures can be applied to reduce single-use packaging, especially plastic bags. In addition, recycling and recovery targets for packaging and deposit system applications to be applied primarily for beverage packaging are also included in the Packaging Waste Control Regulation. **In accordance with the Procedures and Principles Regarding the Establishment and Operation of Civic Amenity Sites and Zero Waste Practices,** places such as cafeterias and restaurants, where single-use plastic cups and beverages are supplied, primarily offer the reusable (multi-usable) cup option to customers and make arrangements to encourage this practice. Similarly, in places such as cafeterias

[187] https://rmis.jrc.ec.europa.eu/
[188] https://op.europa.eu/en/publication-detail/-/publication/117c8d9b-e3d3-11e8-b690-01aa75ed71a1
[189] https://ec.europa.eu/environment/circular-economy/pdf/plastics-strategy.pdf

Actions	Timetable	Progress in the EU	National Context
			and restaurants, it ensures that multi-use options are preferred for materials such as single-use plastic plates, forks, knives, and spoons, that materials such as straws and wet wipes are provided only if requested by the customers, and that these materials are not sent in package services unless the customer requests it.
			Related Planned Actions
			Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. "Determining technical criteria for the use of recycled secondary products and materials" within the scope of the preparation of the preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) EU Single-Use Plastics Directive Regulatory Impact Assessment Study to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

Actions	Timetable	Progress in the EU	National Context
Specific action to reduce marine litter implementing the 2030 Sustainable Development Goals	2015 onwards	On 20 June 2018, the Commission and UN Environment agreed to the **2018 Oceans Roadmap 2**[190] addressing in particular threats of pollution and marine litter, in line with international commitments and the implementation of ocean related SDGs. Programmes of measures under the **Marine Strategy Framework Directive (MSFD)** were submitted in 2016 by MS for reaching good environmental status by 2020 (e.g. beach cleaning and awareness raising campaigns).	Marine Strategy Framework Directive (MSFD) has not been transposed into the national law yet. **The Capacity Building Project on the Marine Strategy Framework Directive in Türkiye (MarinTurk)**, of which the MoEUCC is the beneficiary, was completed in 2018. Within the scope of the project, the current situation for the implementation of the MSFD in our country has been determined and a gap analysis and a needs analysis have been completed.[191] In 2017, **12 Marine Monitoring Guidelines** were prepared in line with the MSFD.[192] **Related Planned Actions** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. "Determining technical criteria for the use of recycled secondary products and materials" within the scope of the preparation of the preparation of the National Circular Economy Action Plan

[190] https://ec.europa.eu/environment/marine/international-cooperation/pdf/2018_UNEP_EU_roadmap.pdf
[191] https://cygm.csb.gov.tr/turkiye-de-deniz-stratejisi-cerceve-direktifi-konusunda-kapasite-gelistirme-projesi-marinturk-kapanis-toplantisi-ankara-holiday-inn-otel-de-gerceklestirildi.-haber-223799
[192] https://webdosya.csb.gov.tr/db/ced/menu/deniz_izleme_klavuzlari_20180516024237.pdf

Actions	Timetable	Progress in the EU	National Context
			(Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) EU Single-Use Plastics Directive Regulatory Impact Assessment Study to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

Food waste			
Development of a **common methodology and indicators** to measure food waste	2016	**The Decree-Law**[193] establishing the method for measuring food waste quantities was published on 27 September 2019 and entered into force on 17 October 2019 Member States carried out the first data collection on food waste in 2020 in light of reporting on national food waste levels by mid-2022. The EU reporting framework will help standardize reporting of food waste levels by businesses and contribute to the global monitoring of the Sustainable Development Goal (12.3).	- **Related Planned Actions** Türkiye's Green Deal Action Plan: 2.1.1. Determining the priority sectors within the framework of the circular economy and carrying out detailed impact and needs analysis studies for the sectors (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) 2.1.2. "Determining technical criteria for the use of recycled secondary products and materials" within the scope of the preparation of the preparation of the National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Monitoring Mechanism

[193] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019D1597&from=EN

Actions	Timetable	Progress in the EU	National Context
			and Indicators to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy
Stakeholders platform to examine how to achieve SDGs goals on food waste,share best practice and evaluate progress	2016	**The EU Platform on Food Losses and Food Waste**[194], bringing together international organisations, Member States and stakeholders, was launched in August 2016 to help accelerate the EU's progress towards the SDG 12.3 target of halving food waste by 2030. A digital network was also set up in 2017 to improve collaboration and exchange amongst Platform members. The Platform has partnered with Horizon 2020 project **REFRESH**[195] to establish a community of experts on food waste prevention allowing engagement with a broader stakeholder network.	-
Clarify relevant EU legislation related to waste, food and feed in order to facilitate food donation and utilisation of former foodstuffs for animal feed	2016	The Commission published **Guidelines for the feed use of food no longer intended for human consumption**[196] in 2018 and **Guidelines on food donation**[197] in 2017.	-
Explore options for more effective use and understanding of date marking on food	2017	In 2020[198] and 2021[199], **technical guidance documents** were prepared by European Food and Safety Authority (EFSA), in order to promote more consistent date marking practices in line with EU date marking rules.	-

Critical raw materials

[194] https://food.ec.europa.eu/safety/food-waste/eu-actions-against-food-waste/eu-platform-food-losses-and-food-waste_en
[195] https://eu-refresh.org/
[196] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52018XC0416(01)&from=EN
[197] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:52017XC1025(01)&from=EN
[198] https://www.efsa.europa.eu/en/efsajournal/pub/6306
[199] https://www.efsa.europa.eu/en/efsajournal/pub/6510

Actions	Timetable	Progress in the EU	National Context
Report on critical raw materials and the circular economy	2017	**The report on critical raw materials**[200] was published on 16 January 2018. The report provides key data sources and, looking at eight sectors (e.g. mining, electric and electronic equipment, batteries, renewable energy), promotes best practices and identifies actions to improve recycling.	-
Improve **exchange of information** between manufacturers and recyclers on electronic products	2016 onwards	**The "i4R" platform**[201] was launched to allow the exchange of information between producers of electrical and electronic equipment and recyclers of WEEE.	-
European standards for material-efficient recycling of electronic waste, wastebatteries and other relevant complex end-of-life products	2016 onwards	**A set of standards (CLC/TC 111X)** have been developed by CENELEC for the collection, logistics, processing, and preparing for reuse requirements of WEEEs and the marking of EEEs. [202]	TS CLC/TS 50625 Collection, logistics, and treatment requirements TS 13615 Workplaces – Rules for waste electrical and electronic goods processing facilities TS EN 50614 Requirements for the reuse of waste electrical and electronic equipment TS EN 50419 Marking of electrical and electronic equipment (EEE) regarding the separate collection of EEEs (WEEE)
Sharing of best practice for the recovery of critical raw materials from miningwaste and landfills	2017	**The review**[203] **of the state of implementation of the Extractive Waste Directive** by Member States was published in 2017. In addition, JRC finalized a **report gathering best practices on non-critical and critical raw material recovery from mining waste and landfills**[204], as a supporting action for Extractive Waste Management Plans.	-

[200] https://commission.europa.eu/publications/report-critical-raw-materials-and-circular-economy_en
[201] https://i4r-platform.eu/
[202] https://standards.cencenelec.eu/dyn/www/f?p=305:7:0:25:::FSP_ORG_ID,FSP_LANG_ID:1258637
[203] https://ec.europa.eu/environment/pdf/waste/studies/KH-01-17-904-EN-N.pdf
[204] https://op.europa.eu/en/publication-detail/-/publication/4b410d88-a774-11e9-9d01-01aa75ed71a1/language-en

Actions	Timetable	Progress in the EU	National Context
Construction and demolition			
Pre-demolition assessment **guidelines** for the construction sector	2017	The outcomes of the study on Pre-demolition & Renovation Waste Audits were released as **Guidelines for Assessment of Construction and Demolition Waste Streams prior to the Demolition or Renovation of Buildings and Infrastructures** (known as Waste Audit Guidelines).[205]	There are provisions for selective demolition within the scope of the Regulation on the Demolition of Buildings dated 13.10.2021 and numbered 31627 published by the Ministry of Environment and Urbanization.
Voluntary industry-wide **recycling protocol** for construction and demolitionwaste	2016	**The EU Construction and Demolition waste management protocol**[206] was published in October 2016. Dissemination and communication actions on the protocol have been implemented in order to assist Member States, regional, local authorities and private practitioners in adopting it in their construction market.	-
Core indicators for the assessment of the lifecycle environmental performance of a building, and incentives for their use	2017 onwards	**Level(s), the European reporting framework for sustainable buildings**[207] with its indicators and lifecycle tools, includes both resource use indicators and indicators linked to the quality and the value of buildings. Together they provide a common language for communicating on environmental performance to the mainstream market.	-
Biomass and bio-based materials			
Guidance and dissemination of best practice on the cascading use of biomassand support to innovation in this domain through Horizon 2020	2018- 2019	**Guidance on cascading use of biomass**[208] was published on 16 November 2018 to promote efficient use of bio-based resources through dissemination of best practices and support for innovation in the bio-economy'.	-

[205] https://single-market-economy.ec.europa.eu/news/eu-construction-and-demolition-waste-protocol-2018-09-18_en
[206] https://single-market-economy.ec.europa.eu/news/eu-construction-and-demolition-waste-protocol-2018-09-18_en
[207] https://environment.ec.europa.eu/topics/circular-economy/levels_en
[208] https://op.europa.eu/en/publication-detail/-/publication/9b823034-ebad-11e8-b690-01aa75ed71a1/language-en/format-PDF/source-80148793

Actions	Timetable	Progress in the EU	National Context
Ensuring coherence and synergies with the circular economy when examining the sustainability of bioenergy under the Energy Union	2016	**The new Renewable Energy Directive**[209], contains provisions referring to circular economy and waste hierarchy. These address the risk of conflicting use of biomass resources between energy and non-energy sectors and of creating financial incentives that would undermine the separate collection obligations set out in the Waste Framework Directive.	-
Assessment of the contribution of the 2012 Bioeconomy Strategy to the circular economy and possible review	2016	**The Bioeconomy Strategy and Action Plan**[210], updated in 2018, proposes 14 concrete actions under three priority areas. • strengthen and scale bio-based industries, unlock investments and markets, • rapidly expanding bioeconomies all over Europe, • understand the ecological limits of the bioeconomy. The promotion bio-based materials and products, whenever possible and relevant, will be ensured during the development of EU Eco-label and Green Public Procurement criteria for new or existing product lines.	-

Innovation and investments			
Initiative "Industry 2020 and the circular economy" under **Horizon 2020**	October 2015	The Commission has published an inventory of the projects relevant to the circular economy funded under H2020.[211]	-

[209] https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018L2001
[210] https://op.europa.eu/en/publication-detail/-/publication/edace3e3-e189-11e8-b690-01aa75ed71a1/language-en/format-PDF/source-149755478
[211] https://commission.europa.eu/research-and-innovation_en?pg=output&pubs=thematic

Actions	Timetable	Progress in the EU	National Context
Pilot project for "innovation deals" to address possible regulatory obstacles for innovators	2016	The first call for pilot projects received 32 proposals from 14 different countries. The two selected Innovation Deals focus[212] on: (1) sustainable wastewater treatment and (2) optimising e-vehicle battery usage.	-
Targeted outreach to encourage applications for funding under EFSI, and support the development of projects and investment platforms relevant to thecircular economy	2016 onwards	Awareness raising and thematic workshops started in 2016 and continue in 2019 to increase the use of funds for the circular economy through EFSI with a focus on green investments for environment and resource efficiency projects (including energy efficiency and renewable energy projects). To provide advice on funding opportunities the European Investment Advisory Hub (EIAH) was launched, while EUR 100 million are made available via the **Circular Bioeconomy Thematic Investment Platform**.[213]	-
Targeted outreach and communication activities to assist Member States and regions for the uptake of Cohesion Policy funds for the circular economy	2016 onwards	From 2014 to 2020, **cohesion policy** allocates around EUR 150 billion to objectives with a direct relevance to the circular economy, such as research and innovation, SMEs, low-carbon economy, resource efficiency and waste management. There are several programmes fostering interregional cooperation on circular economy activities. The allocations and expected results are visualised in the new **Open Data Platform**.[214]	-
Support to Member States and regions to strengthen innovation for the circular economy through smart specialisation	2016 onwards	About EUR 41 billion are available to implement the so-called smart specialisation strategies of regions and Member States. In these strategies, several regions have selected priorities related to the circular economy such as the bio-economy, composite material technology or	-

[212] https://research-and-innovation.ec.europa.eu/law-and-regulations/ensuring-eu-legislation-supports-innovation/identifying-barriers_en
[213] https://circulareconomy.europa.eu/platform/en/news-and-events/all-news/european-fund-support-circular-bioeconomy
[214] https://cohesiondata.ec.europa.eu/

Actions	Timetable	Progress in the EU	National Context
		innovative production processes. **The Smart Specialisation Platform**[215] and the thematic platforms on energy, agri-food, and industrial modernisation hosted by the JRC help the implementation of those strategies, including on circular economy.	
Assessment of the possibility of launching a **platform together with the EIB and national banks** to support the financing of the circular economy	2016	**The Circular Economy Finance Support Platform** was launched on 26 January 2017. The Platform aims to increase awareness of the circular economy business logic and improve the uptake of circular economy projects by investors. A Commission expert group was set-up to coordinate activities regarding the financing of the circular economy and to develop general recommendations on structuring and improving the bankability of circular economy projects.[216]	-
Engagement with stakeholders in the implementation of this action plan through existing fora in key sectors	2016 onwards	**The European Circular Economy Stakeholder Platform**[217] was launched in March 2017 to foster policy dialogue, to exchange expertise among stakeholders and to identify barriers in relation to the circular economy. Its website includes good practices, national, regional, local strategies, studies and report and voluntary commitments, etc.	-
Support to a range of stakeholders through actions on public-private partnerships, cooperation platforms, support to voluntary business approaches, and exchanges of best	2015 onwards	**A Smart Specialisation Platform**[218] on Industrial Modernisation has been launched in June 2016 to facilitate cross-regional cooperation towards industrial modernisation projects, e.g. on resource efficiency,	-

[215] https://s3platform.jrc.ec.europa.eu/
[216] https://research-and-innovation.ec.europa.eu/system/files/2019-03/accelerating_circular_economy_032019.pdf
[217] https://circulareconomy.europa.eu/platform/en
[218] https://s3platform.jrc.ec.europa.eu/

Actions	Timetable	Progress in the EU	National Context
practices		remanufacturing/sustainable manufacturing. In 2017, **a partnership on Circular Economy within the Urban Agenda**[219] for the EU was launched, to identify innovative, feasible solutions for making European cities transition to a circular economy. In addition, the **European Resource Efficiency Knowledge Centre**[220] was also set up.	

Monitoring			
Development of a **monitoring framework** for the circular economy	2017	The **EU Monitoring Framework** for the Circular Economy, which includes **10 key indicators**, was presented in 2018. 1. EU self-sufficiency for raw materials 2. Green public procurement 3. Waste generation 4. Food waste 5. Recycling rates 6. Recycling / recovery for certain waste streams 7. Contribution of recycled materials to raw material demand 8. Recyclable raw material trade 9. Private investment, employment and gross value added related to circular economy sectors 10. Number of patents on recycling and secondary raw materials	A monitoring mechanism for a national circular economy has not yet been established. However, the following indicators are regularly monitored within the framework of current waste management statistics. 3. Waste generation 5. Recycling rates 6. Amount of recycling/recovery for certain waste streams **Related Planned Actions** Türkiye's Green Deal Action Plan: 2.1.2. National Circular Economy Action Plan (Responsible Institution/Coordinator: Ministry of Environment, Urbanization and Climate Change) National Circular Economy Monitoring Mechanism

[219] https://ec.europa.eu/futurium/en/circular-economy.html
[220] https://resourceefficient.eu/en

Actions	Timetable	Progress in the EU	National Context
			and Indicators to be developed within the Scope of Technical Assistance for Assessment of Türkiye's Potential on Transition to Circular Economy

Annex 2 - Actions on the French Circular Economy Roadmap

A Roadmap for Better Production

1. Use more secondary raw materials in products
2. Support productive investment
3. By 2020, support 2,000 voluntary companies through the ADEME [French Environment and Energy Management Agency] mechanism “SMEs winning every time”
4. Enable the EPR [Extended Producer Responsibility] schemes to secure investments from industrial recycling sectors and sectors of producers of recycled products
5. Manage resources more sustainably
6. From 2019, adapt professional skills for better production at national level and in the regions
7. Roll out voluntary environmental labelling of products and services in the five pilot sectors and extend this voluntary scheme to other sectors in 2018

A Roadmap to Better Consumption

8. Strengthen the range of services offered by actors involved in reuse, repair and the economy of functionality (product-service systems)
9. Strengthen the obligations of manufacturers and distributors to provide information on the availability of spare parts for electrical and electronic products and furniture
10. Mandatory simple information logo on reparability from 1 January 2020 for electrical and electronic products
11. Strengthen the effective implementation of the legal guarantee of conformity and bring about an extension of its duration at the European level
12. Roll out the implementation of eco-modulation criteria for all the EPR schemes and make eco-modulation a tool for encouraging real behaviour change
13. Improve consumer information
14. Step up the fight against food waste
15. By 2019, promote the main principles of the fight against food waste for the textile sector
16. Strengthen the fight against advertising encouraging the premature scrapping of products and the waste of resources

A Roadmap for Better Managing Our Waste

17. Launch a "general mobilization" drive to accelerate the collection of recyclable packaging, plastic bottles and cans through returns for charitable purposes.
18. Extend the scope of the EPR “packaging” scheme to professional packaging and aim to increase the percentage of bottles and cans collected in the cafe, hotel and restaurant sector
19. Simplify the sorting process for citizens and harmonize the colour of containers throughout France
20. Improve the pictogram device known as "Triman" by simplifying its definition
21. Adapt taxation to make waste recovery cheaper than waste disposal
22. Facilitate the deployment of pricing incentives for waste collection
23. Facilitate the deployment of biowaste sorting at the source by councils, by easing restrictions

24. Recycle all high-quality biowaste and enable the agricultural sector to drive the circular economy
25. Take the ban on the use of fragmentable plastics, expanded polystyrene containers and plastic microbeads to the European level
26. By 2020, impose the installation of plastic particle recovery filters at sites where they are produced or used
27. By early 2019, develop a benchmark for good practices and tools for councils to combat illegal waste dumping
28. Reinforce the confidence pact between the EPR schemes in order to restore room for manoeuvre to eco-organizations by reinforcing the monitoring means of the State and penalties
29. Educate the actors involved on the creation of new EPR schemes or the extension of existing sectors to include the 'polluter pays' principle for new products
30. Develop certain EPR schemes to improve their operation
31. By 2019, study the deployment of a financial mechanism to promote the recovery of old mobile phones
32. Give producers more freedom to exercise their responsibility within EPR schemes
33. Review the operation of building waste management by making collection more efficient
34. By May 2019, conduct an in-depth review of the current regulatory framework for the "assessment of waste before demolition"
35. By 2020, develop technical guidelines enabling recognition of the performance of reused materials
36. Adapt waste regulations to promote the circular economy
37. Facilitate end of waste status
38. From 2019, review the landfill and incineration rules for business and organisations waste
39. Ensure there is a level playing field
40. Combat the illegal trade in end-of-life vehicles

A Roadmap for Mobilizing all Actors

41. Make unprecedented communication efforts to mobilize citizens and businesses
42. Raise awareness and educate
43. Roll out and sustain regional action about the circular economy
44. Use public procurement and "exemplary administration" as a lever for the deployment of the circular economy
45. Support the circular economy through dedicated funding
46. Strengthen synergies between companies (industrial and territorial ecology – EIT – industrial symbiosis)
47. Mobilize the scientific and technical community with a multidisciplinary approach
48. Strengthen national governance and steering by developing the National Waste Council into a National Circular Economy Council
49. Integrate the special issues of the overseas territories
50. Continue France's action in support of the circular economy on the European and international scale[221]

[221] French Ministry of Ecological Transition (2018) French Circular Economy Roadmap. Available at: https://circulareconomy.europa.eu/platform/sites/default/files/frec_anglais.pdf

Annex 3 - Finland Circular Economy Roadmap Actions

1. Establishing an internationally competitive battery ecosystem of the future in Finland.
2. Materials circulate from one company to another in eco-industrial parks.
3. Building a database enhances the circulation of materials.
4. Adoption of circular economy criteria in the construction sector.
5. Synthetic biology as a driver of the circular economy.
6. New materials from textile waste.
7. The quality system for recycled nutrient products promotes the use of recycled nutrients.
8. Making Finnish companies the leaders in corporate water responsibility.
9. By making a commitment to a sustainable way of life everyone can contribute to the mitigation of climate change.
10. Learning materials on sustainable everyday life and the circular economy for primary schools.
11. Fast trials facilitate the transition to business for sustainable everyday life.
12. Circular economy centres challenge shopping centres.
13. Accelerating the internationalisation of industrial enterprises with the help of a circular economy investment programme.
14. Managing the safety risks caused by the reuse of materials.
15. Harnessing fields as carbon sinks on farms.
16. Tools for the manufacturing industry help companies make the transition to circular economy business.
17. The national transport-sector growth programme speeds up the development of sustainable mobility.
18. LOOP Ventures programme accelerates the market entry of circular economy solutions.
19. The circular economy is integrated into Finland's country brand.
20. Circular economy coaching available for companies looking to go global.
21. Bio and Circular Finland programme finances internationally competitive circular economy solutions.
22. Development and investment aid for the circular economy can boost sustainable growth.
23. Voluntary agreements promote the circular economy faster than legislation.
24. Regional circular economy trials provide references for enterprises.
25. Sharing lessons learned in local networks.
26. Tackling environmental challenges by means of impact investing.
27. Public procurement to accelerate the circular economy.
28. Information platform to enhance the use of waste and side streams.
29. Circular Economy Municipality of the Year competition to inspire local circular economy actions.[222]

[222] SITRA (2019) Finland 2016-2025 Circular Economy Roadmap 2.0. Available at: https://www.sitra.fi/app/uploads/2019/03/kiertotalouden-tiekartta-tiivistelma-en2.pdf

Annex 4 - Data Used in Material Flow Accounting

TURKSTAT MATERIAL FLOW ACCOUNTS

Madde akış hesapları, 2010 - 2018
Material flow accounts, 2010 - 2018

(**Bin Ton** - Thousand Tonnes)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Yurtiçi üretim									
Domestic extraction (DE)	**889 752**	**934 396**	**817 640**	**823 479**	**874 122**	**907 013**	**919 235**	**964 079**	**908 534**
Biyokütle									
Biomass	217 298	227 280	233 383	231 497	225 360	250 108	261 323	270 048	267 444
Metal cevherleri									
Metal ores	33 905	38 123	37 358	46 466	52 315	59 103	50 522	44 863	35 274
Metalik olmayan mineraller									
Non-metallic minerals	556 164	583 430	465 558	480 358	529 175	537 415	531 511	572 225	518 670
Fosil enerji maddeleri									
Fossil energy materials	82 386	85 563	81 341	65 157	67 272	60 387	75 879	76 943	87 146
İthalat									
Imports (I)	**147 987**	**157 951**	**172 910**	**173 876**	**157 189**	**197 331**	**207 098**	**225 873**	**211 051**
Biyokütle									
Biomass	20 456	22 780	24 870	25 529	29 170	28 724	28 359	33 158	33 899
Metal cevherleri									
Metal ores	44 706	47 980	51 933	52 533	50 534	55 840	55 994	59 518	56 367
Metalik olmayan mineraller									
Non-metallic minerals	7 160	7 762	7 623	8 985	9 790	9 281	10 131	10 774	9 184
Fosil enerji maddeleri									
Fossil energy materials	68 640	72 008	81 519	79 379	60 085	95 789	104 919	113 976	103 666
Diğer ürünler									
Other products	7 024	7 420	6 966	7 450	7 609	7 696	7 695	8 447	7 935
Doğrudan madde girdisi									
Direct material input (DMI) = (DE) + (I)	**1 037 739**	**1 092 346**	**990 550**	**997 355**	**1 031 311**	**1 104 344**	**1 126 333**	**1 189 952**	**1 119 585**
İhracat									
Exports (X)	**94 055**	**94 243**	**98 876**	**100 141**	**99 265**	**99 322**	**103 768**	**115 533**	**131 809**
Biyokütle									
Biomass	12 793	12 643	13 089	14 649	15 183	15 366	17 848	19 630	23 865
Metal cevherleri									
Metal ores	26 591	28 142	30 419	30 332	29 106	26 778	27 593	30 988	35 990
Metalik olmayan mineraller									
Non-metallic minerals	37 376	34 374	34 771	34 783	33 372	33 743	36 236	40 509	42 392
Fosil enerji maddeleri									
Fossil energy materials	8 495	9 324	10 524	9 772	10 255	11 972	11 141	11 892	13 791
Diğer ürünler									
Other products	8 798	9 760	10 073	10 605	11 349	11 463	10 950	12 514	15 769
Yurtiçi madde tüketimi									
Domestic material consumption (DMC) = (DMI) - (X)	**943 684**	**998 104**	**891 674**	**897 214**	**932 046**	**1 005 022**	**1 022 565**	**1 074 419**	**987 776**

Tablodaki rakamlar, yuvarlamadan dolayı toplamı vermeyebilir.

Figures in tables may not add up to totals due to rounding.

TURKSTAT MATERIAL FLOW ACCOUNTS (DOMESTIC PRODUCTION SUB-FRACTURES)

Material flow accounts [env_ac_mfa]									
Last update	01.07.22								
Extracted on	21.09.22								
Source of data	Eurostat								
UNIT	Thousand tonnes								
INDIC_ENV	Domestic extraction								

MATERIAL	GEO/TIME	2012	2013	2014	2015	2016	2017	2018	2019
Total	Turkey	817,639.846	823,479.211	874,121.955	907,012.713	919,234.665	964,078.681	908,533.525	813,355.785
Biomass	Turkey	233,383.383	231,497.404	225,360.074	250,108.032	261,322.63	270,048.49	267,443.624	282,528.42
Crops (excluding fodder crops)	Turkey	105,034.311	110,252.223	104,823.557	112,428.296	123,709.354	124,908.3	115,176.024	125,406.283
Cereals	Turkey	33,377.43	37,489.268	32,714.157	38,637.138	34,913.164	35,773	34,500.142	34,339.031
Roots, tubers	Turkey	8,004.286	7,236.564	7,298.051	7,963.236	4,750.687	4,801	7,948.328	8,657.325
Sugar crops	Turkey	14,919.94	16,488.59	16,572.79	16,022.783	19,465	21,149	17,436.1	18,054.32
Pulses	Turkey	2,058.872	2,025.915	1,915.486	1,965.628	1,080.253	1,165	2,058.115	2,132.27
Nuts	Turkey	1,151.354	992.609	809.799	1,123.75	934.75	1,116	1,133.58	1,308.775
Oil-bearing crops	Turkey	3,138.361	3,299.967	3,508.64	3,442.098	5,211	5,983	5,509.959	5,510.411
Vegetables	Turkey	24,382.662	24,382.762	24,638.054	25,534.47	35,201	30,826	25,878.569	34,394.651
Fruits	Turkey	16,936.13	17,215.186	16,293.202	16,640.29	21,224.5	22,777.3	19,344.678	19,780.474
Fibres	Turkey	858.406	877.501	846.001	738.002	657	882	976.6	814.021
Other crops (excluding fodder crops) n.e.c.	Turkey	206.87	243.861	227.377	360.901	272	436	389.953	415.005
Crop residues (used), fodder crops and grazed biomass	Turkey	118,335.882	111,787.763	110,278.611	126,546.733	126,058.81	134,030.31	139,979.804	144,559.19
Crop residues (used)	Turkey	35,891.492	26,131.272	24,031.158	41,120.513	40,532.751	38,605	38,664.621	39,169.832
Straw	Turkey	26,228.4	15,435	13,300	30,712	27,864.68	24,763	27,545.478	27,651.61
Other crop residues (sugar and fodder beet leaves, etc.)	Turkey	9,663.092	10,696.272	10,731.158	10,408.513	12,668.071	13,842	11,119.143	11,518.222
Fodder crops and grazed biomass	Turkey	82,444.39	85,656.492	86,247.454	85,426.22	85,526.06	95,425.31	101,315.182	105,389.358
Fodder crops (including biomass harvest from grassland)	Turkey	8,868.761	9,578.247	9,486.26	9,740.953	10,937.361	12,047.745	15,002.731	16,019.637
Grazed biomass	Turkey	73,575.629	76,078.244	76,761.194	75,685.267	74,588.698	83,377.565	86,312.451	89,369.72
Wood	Turkey	9,616.869	9,118.371	9,991.828	10,701.097	11,219.146	10,755.483	11,973.623	12,099.78
Timber (industrial roundwood)	Turkey	7,681.335	7,256.203	8,048.348	8,583.159	8,716.77	8,350.034	8,995.386	9,089.08
Wood fuel and other extraction	Turkey	1,935.534	1,862.168	1,943.48	2,117.937	2,502.377	2,405.449	2,978.237	3,010.7
Wild fish catch, aquatic plants and animals, hunting and gathering	Turkey	396.322	339.047	266.078	431.907	335.32	354.397	314.173	463.168
Wild fish catch	Turkey	315.637	295.168	231.058	345.765	263.725	269.676	252.163	406.322
All other aquatic animals and plants	Turkey	80.686	43.879	35.019	86.142	71.595	84.641	61.931	56.846
Hunting and gathering	Turkey	0	0	0	0	0	0.079	0.079	0
Live animals and animal products (excluding wild fish, aquatic plants and an	Turkey	:	:	:	:	:	:	:	:
Live animals (excluding wild fish, aquatic plants and animals, hunted and ga	Turkey	:	:	:	:	:	:	:	:
Meat and meat preparations	Turkey	:	:	:	:	:	:	:	:
Dairy products, birds' eggs, and honey	Turkey	:	:	:	:	:	:	:	:
Other products from animals (animal fibres, skins, furs, leather, etc.)	Turkey	:	:	:	:	:	:	:	:
Products mainly from biomass	Turkey	:	:	:	:	:	:	:	:
Metal ores (gross ores)	Turkey	37,357.553	46,466.14	52,315.045	59,102.735	50,521.793	44,862.652	35,273.875	51,136.929
Iron	Turkey	7,599.511	8,520.274	10,718.045	9,994.309	7,520.306	6,325.191	9,864.663	:
Non-ferrous metal	Turkey	29,758.041	37,945.866	41,597	49,108.426	43,001.487	38,537.46	25,409.211	:
Copper	Turkey	:	:	6,006.617	:	6,192.609	5,628.527	:	:
Nickel	Turkey	:	:	:	:	:	:	:	:
Lead	Turkey	20.579	35.248	28.05	:	:	489.03	626.356	300.375
Zinc	Turkey	183.542	741.328	:	:	:	512.645	1,008.142	525.579
Tin	Turkey	0	0	0	:	:	0	0	0
Gold, silver, platinum and other precious metals	Turkey	18,495.28	26,096.32	:	:	:	:	16,204.274	35,419.866
Bauxite and other aluminium	Turkey	:	:	:	:	:	1,159.047	978.999	:
Uranium and thorium	Turkey	0	0	0	0	0	0	0	0
Other non-ferrous metals	Turkey	3,639.456	4,412.136	:	2,544.344	2,029.351	2,571.911	2,954.837	3,404.697
Products mainly from metals	Turkey	:	:	:	:	:	:	:	:
Non-metallic minerals	Turkey	465,557.611	480,358.231	529,175.236	537,415.35	531,511.271	572,224.844	518,670.392	389,217.927
Marble, granite, sandstone, porphyry, basalt, other ornamental or building s	Turkey	12,891.489	15,723.624	19,982.993	15,456.319	15,247.756	18,811.918	16,090.02	14,535.074
Chalk and dolomite	Turkey	:	1,438.21	:	1,629.085	2,160.958	2,041.355	1,657.352	1,466.904
Slate	Turkey	:	:	37.05	:	:	:	:	:
Chemical and fertiliser minerals	Turkey	21,785.331	19,776.483	:	15,894.098	15,127.901	17,006.033	14,943.344	32,715.341
Salt	Turkey	:	:	2,954.527	:	:	:	:	:
Limestone and gypsum	Turkey	85,519.241	92,813.637	102,305.922	92,383.955	91,122.851	93,105.743	66,798.821	46,174.257
Clays and kaolin	Turkey	21,396.468	14,286.002	15,347.004	10,822.065	8,576.188	7,433.471	5,360.315	3,807.179
Sand and gravel	Turkey	303,950.06	317,795.627	345,425.106	384,359.125	381,638.847	419,870.596	393,130.649	274,240.341
Other non-metallic minerals n.e.c.	Turkey	13,630.72	15,079.854	15,831.701	12,335.823	12,990.299	13,947.381	16,325.926	10,886.776
Products mainly from non metallic minerals	Turkey	:	:	:	:	:	:	:	:
Fossil energy materials/carriers	Turkey	81,341.299	65,157.436	67,271.6	60,386.596	75,878.97	76,942.696	87,145.635	90,472.509
Coal and other solid energy materials/carriers	Turkey	78,395.402	62,361	64,406	57,557	73,003.57	74,098	83,936.203	87,089
Lignite (brown coal)	Turkey	75,036.559	58,425	62,573	56,122	71,691	72,864	82,834.49	85,883
Hard coal	Turkey	3,358.844	3,936	1,833	1,435	1,312.57	1,234	1,101.714	1,206
Oil shale and tar sands	Turkey	0	0	0	0	0	0	0	0
Peat	Turkey	0	0	0	0	0	0	0	0
Liquid and gaseous energy materials/carriers	Turkey	2,945.896	2,796.436	2,865.6	2,829.596	2,875.4	2,844.696	3,209.431	3,383.509
Crude oil, condensate and natural gas liquids (NGL)	Turkey	2,440	2,366.836	2,471	2,515.66	2,573	2,553	2,851	2,986
Natural gas	Turkey	505.896	429.6	394.6	313.936	302.4	291.696	358.431	397.509
Fuels bunkered (Imports: by resident units abroad); (Exports: by non-reside	Turkey	:	:	:	:	:	:	:	:
Fuel for land transport	Turkey	:	:	:	:	:	:	:	:
Fuel for water transport	Turkey	:	:	:	:	:	:	:	:
Fuel for air transport	Turkey	:	:	:	:	:	:	:	:
Products mainly from fossil energy products	Turkey	:	:	:	:	:	:	:	:
Other products	Turkey	:	:	:	:	:	:	:	:
Waste for final treatment and disposal	Turkey	:	:	:	:	:	:	:	:
Stage of Manufacturing - finished products	Turkey	:	:	:	:	:	:	:	:
Stage of Manufacturing - semi-finished products	Turkey	:	:	:	:	:	:	:	:
Stage of Manufacturing - raw products	Turkey	:	:	:	:	:	:	:	:

Special value:	
:	not available

TURKSTAT DOMESTIC PROCESS OUTPUT DATA

Material flow accounts - domestic processed output [env_ac_mfadpo]				
Last update	01.07.22			
Extracted on	21.09.22			
Source of data	Eurostat			
UNIT	Thousand tonnes			

MATERIAL	GEO/TIME	2018	2019	2020
Total	Turkey	:	:	:
Emissions to air	Turkey	428,144.118	408,207.323	:
Carbon dioxide (CO2)	Turkey	419,230.545	399,127.116	:
Carbon dioxide (CO2) from biomass combustion	Turkey	11,631.478	11,729.676	:
Carbon dioxide (CO2) excluding biomass combustion	Turkey	407,599.067	387,397.44	:
Methane (CH4)	Turkey	2,323.399	2,410.569	:
Dinitrogen oxide (N2O)	Turkey	74.298	73.758	:
Nitrous oxides (NOx)	Turkey	785.088	779.354	:
Hydroflourcarbons (HFCs)	Turkey	5.126	6.022	:
Perflourocarbons (PFCs)	Turkey	5.101	5.126	:
Sulfur hexaflouride	Turkey	0.005	0.006	:
Carbon monoxide (CO)	Turkey	1,589.815	1,662.848	:
Non-methane volatile organic compounds (NMVOC)	Turkey	823.653	852.65	:
Sulfur dioxide (SO2)	Turkey	2,518.69	2,454.542	:
Ammonia (NH3)	Turkey	550.03	586.502	:
Heavy metals	Turkey	0	0	:
Persistent organic pollutants (POPs)	Turkey	0	0	:
Particles (e.g. PM10, Dust)	Turkey	238.369	248.829	:
Other emissions to air	Turkey	0	0	:
Waste disposal to the environment	Turkey	86.67	50.986	:
Waste disposal to controlled landfills (memo item)	Turkey	85,700.206	:	:
Emissions to water	Turkey		:	:
Nitrogen (N)	Turkey	:	:	:
Phosphorus (P)	Turkey	:	:	:
Heavy metals	Turkey	:	:	:
Other substances and (organic) materials	Turkey	:	:	:
Dumping of materials at sea	Turkey	0.624	3.824	:
Dissipative use of products	Turkey	42,674.266	45,882.992	:
Organic fertiliser (manure)	Turkey	30,314.812	31,450.915	:
Mineral fertiliser	Turkey	10,567.457	12,167.571	:
Sewage sludge	Turkey	0.533	0.571	:
Compost	Turkey	119.239	63.814	:
Pesticides	Turkey	60.02	51.297	:
Seeds	Turkey	1,059.316	1,191.652	:
Salt and other thawing materials spread on roads (including grit)	Turkey	299.687	471.276	:
Solvents, laughing gas and other	Turkey	253.202	485.896	:
Dissipative losses	Turkey	9.208	9.047	:

MATERIAL	GEO/TIME	2018	2019	2020
Total	Turkey	:	:	:
Emissions to air	Turkey	5.259	4.943	:
Carbon dioxide (CO2)	Turkey	5.15	4.833	:
Carbon dioxide (CO2) from biomass combustion	Turkey	0.143	0.142	:
Carbon dioxide (CO2) excluding biomass combustion	Turkey	5.007	4.691	:
Methane (CH4)	Turkey	0.029	0.029	:
Dinitrogen oxide (N2O)	Turkey	0.001	0.001	:
Nitrous oxides (NOx)	Turkey	0.01	0.009	:
Hydroflourcarbons (HFCs)	Turkey	0	0	:
Perflourocarbons (PFCs)	Turkey	0	0	:
Sulfur hexaflouride	Turkey	0	0	:
Carbon monoxide (CO)	Turkey	0.02	0.02	:
Non-methane volatile organic compounds (NMVOC)	Turkey	0.01	0.01	:
Sulfur dioxide (SO2)	Turkey	0.031	0.03	:
Ammonia (NH3)	Turkey	0.007	0.007	:
Heavy metals	Turkey	0	0	:
Persistent organic pollutants (POPs)	Turkey	0	0	:
Particles (e.g. PM10, Dust)	Turkey	0.003	0.003	:
Other emissions to air	Turkey	0	0	:
Waste disposal to the environment	Turkey	0.001	0.001	:
Waste disposal to controlled landfills (memo item)	Turkey	1.053	:	:
Emissions to water	Turkey	:	:	:
Nitrogen (N)	Turkey	:	:	:
Phosphorus (P)	Turkey	:	:	:
Heavy metals	Turkey	:	:	:
Other substances and (organic) materials	Turkey	:	:	:
Dumping of materials at sea	Turkey	0	0	:
Dissipative use of products	Turkey	0.524	0.556	:
Organic fertiliser (manure)	Turkey	0.372	0.381	:
Mineral fertiliser	Turkey	0.13	0.147	:
Sewage sludge	Turkey	0	0	:
Compost	Turkey	0.001	0.001	:
Pesticides	Turkey	0.001	0.001	:
Seeds	Turkey	0.013	0.014	:
Salt and other thawing materials spread on roads (including grit)	Turkey	0.004	0.006	:
Solvents, laughing gas and other	Turkey	0.003	0.006	:
Dissipative losses	Turkey	0	0	:

Special value:

: not available

UNIT Index, 2000=100

MATERIAL	GEO/TIME	2018	2019	2020
Total	Turkey	:	:	:
Emissions to air	Turkey	:	:	:
Carbon dioxide (CO2)	Turkey	:	:	:
Carbon dioxide (CO2) from biomass combustion	Turkey	:	:	:
Carbon dioxide (CO2) excluding biomass combustion	Turkey	:	:	:
Methane (CH4)	Turkey	:	:	:
Dinitrogen oxide (N2O)	Turkey	:	:	:
Nitrous oxides (NOx)	Turkey	:	:	:
Hydroflourcarbons (HFCs)	Turkey	:	:	:
Perflourocarbons (PFCs)	Turkey	:	:	:
Sulfur hexaflouride	Turkey	:	:	:
Carbon monoxide (CO)	Turkey	:	:	:
Non-methane volatile organic compounds (NMVOC)	Turkey	:	:	:
Sulfur dioxide (SO2)	Turkey	:	:	:
Ammonia (NH3)	Turkey	:	:	:
Heavy metals	Turkey	:	:	:
Persistent organic pollutants (POPs)	Turkey	:	:	:
Particles (e.g. PM10, Dust)	Turkey	:	:	:
Other emissions to air	Turkey	:	:	:
Waste disposal to the environment	Turkey	:	:	:
Waste disposal to controlled landfills (memo item)	Turkey	:	:	:
Emissions to water	Turkey	:	:	:
Nitrogen (N)	Turkey	:	:	:
Phosphorus (P)	Turkey	:	:	:
Heavy metals	Turkey	:	:	:
Other substances and (organic) materials	Turkey	:	:	:
Dumping of materials at sea	Turkey	:	:	:
Dissipative use of products	Turkey	:	:	:
Organic fertiliser (manure)	Turkey	:	:	:
Mineral fertiliser	Turkey	:	:	:
Sewage sludge	Turkey	:	:	:
Compost	Turkey	:	:	:
Pesticides	Turkey	:	:	:
Seeds	Turkey	:	:	:
Salt and other thawing materials spread on roads (including grit)	Turkey	:	:	:
Solvents, laughing gas and other	Turkey	:	:	:
Dissipative losses	Turkey	:	:	:

Special value:

: not available

TURKSTAT WASTE DISPOSAL AND RECOVERY FACILITIES STATISTICS

Atık bertaraf ve geri kazanım tesisleri istatistikleri, 2016, 2018(1)(2) Waste disposal and recovery facilities statistics, 2016, 2018(1)(2)	2016	2018
Atık bertaraf ve geri kazanım tesisleri sayısı **Number of waste disposal and recovery facilities**	**1 698**	**2 223**
Atık bertaraf tesisi sayısı **Number of waste disposal facilities**	**140**	**166**
Düzenli depolama tesisi - Controlled landfill site		
Sayısı - Number	134	159
Kapasitesi (m3) - Capacity (m3)	822 077 838 (r)	798 926 893
Düzenli depolanan toplam atık miktarı (Ton) Total amount of waste landfilled (Tonnes)	43 815 135	55 878 883
Düzenli depolanan tehlikeli atık miktarı (Ton) Amount of hazardous waste landfilled (Tonnes)	6 385 423	16 753 047
Düzenli depolanan tehlikesiz atık miktarı (Ton) Amount of non-hazardous waste landfilled (Tonnes)	37 429 712	39 125 836
Yakma tesisi - Incineration plant		
Sayısı - Number	6	7
Kapasitesi (Ton/yıl) - Capacity (Tonnes/year)	643 962	757 002
Yakılan toplam atık miktarı (Ton) Total amount of waste incinerated (Tonnes)	310 127	493 885
Yakılan tehlikeli atık miktarı (Ton) Amount of hazardous waste incinerated (Tonnes)	62 571	64 567
Yakılan tehlikesiz atık miktarı (Ton) Amount of non-hazardous waste incinerated (Tonnes)	247 557	429 319
Atık geri kazanım tesisi sayısı **Number of waste recovery facilities**	**1 558**	**2 057**
Kompost tesisi - Composting plant		
Sayısı - Number	7	8
Kapasitesi (Ton/yıl) - Capacity (Tonnes/year)	423 850	482 890
Kompostlanan toplam atık miktarı (Ton) Total amount of waste composted (Tonnes)	140 467	138 054
Üretilen kompost miktarı (Ton) Compost produced (Tonnes)	19 728	35 437

Beraber yakma (Ko-insinerasyon) tesisi Co-incineration plant			
Sayısı - Number	35		40
Enerji kazanımlı yakılan toplam atık miktarı (Ton) Total amount of waste co-incinerated (Tonnes)	738 908		1 069 360
Enerji kazanımlı yakılan tehlikeli atık miktarı (Ton) Amount of hazardous waste co-incinerated (Tonnes)	317 917		521 516
Enerji kazanımlı yakılan tehlikesiz atık miktarı (Ton) Amount of non-hazardous waste co-incinerated (Tonnes)	420 991		547 844
Diğer geri kazanım tesisleri (3) Other recovery facilities(3)			
Sayısı - Number	1 516		2 009
Geri kazanılan toplam atık miktarı (Ton) Total amount of waste recovered (Tonnes)	35 769 611 (r)		46 872 420
Geri kazanılan tehlikeli atık miktarı (Ton) Amount of hazardous waste recovered (Tonnes)	696 145		1 166 380
Geri kazanılan tehlikesiz atık miktarı (Ton) Amount of non-hazardous waste recovered (Tonnes)	35 073 466 (r)		45 706 040

TÜİK, Atık Bertaraf ve Geri Kazanım Tesisleri İstatistikleri, 2018

TurkStat, Waste Disposal and Recovery Facilities Statistics, 2018

Tablodaki rakamlar, yuvarlamadan dolayı toplamı vermeyebilir.

Figures in table may not add up to totals due to rounding.

(1) Birden fazla atık bertaraf ve geri kazanım yöntemi için lisansı olan tesislere ait atık miktarları ilgili yöntem altında gösterilmiştir.

(1) Amount of waste of facilities having licence for more than one waste disposal and recovery method are included in the related method.

(2) Faal olmayan atık bertaraf ve geri kazanım tesislerinin kapasiteleri dahil edilmiştir.

(2) Capacities of waste disposal and recovery plants which are not in operation are also included.

(3) Metal, plastik,kağıt mineral vb. atıkların geri kazanımını yapan tesisleri içermektedir.

(3) It includes the facilities which recover waste metal, plastic, paper, mineral etc.

(r) Revize edilmiştir.

(r) Data revised.

TURKSTAT IMPORT AND EXPORT DATA

Material flow accounts [env_ac_mfa]

Last update 01.07.22
Extracted on 21.09.22
Source of data Eurostat

UNIT Thousand tonnes
INDIC_ENV Imports

MATERIAL	GEO/TIME	2012	2013	2014	2015	2016	2017	2018	2019
Total	Turkey	172,909.891	173,875.899	157,188.618	197,331.264	207,098.157	225,873.08	211,051.23	216,289.13
Biomass	Turkey	24,869.587	25,528.839	29,170.456	28,724.177	28,358.791	33,158.149	33,899.38	39,191.537
Crops (excluding fodder crops)	Turkey	9,356.458	10,816.308	14,024.822	12,472.555	11,588.372	14,862.598	17,709.26	23,997.209
Cereals	Turkey	4,970.973	6,263.372	8,022.54	6,532.709	5,351.006	8,079.203	10,276.37	15,663.031
Roots, tubers	Turkey	25.177	12.504	32.532	59.706	32.038	21.024	26.38	128.567
Sugar crops	Turkey	330.035	309.742	421.402	427.933	625.999	598.976	664.59	575.037
Pulses	Turkey	272.195	346.095	450.219	479.364	467.131	570.641	719.18	718.667
Nuts	Turkey	81.799	71.328	66.727	79.795	111.812	103.153	143.09	188.166
Oil-bearing crops	Turkey	2,362.735	2,188.269	3,347.93	3,237.983	3,309.557	3,392.229	3,737.23	4,246.815
Vegetables	Turkey	44.715	47.069	52.641	62.435	112.077	306.159	75.84	267.128
Fruits	Turkey	373.413	400.247	390.915	438.479	393.448	438.012	798.75	749.507
Fibres	Turkey	620.679	879.623	923.004	818.74	835.149	940.565	849.23	964.854
Other crops (excluding fodder crops) n.e.c.	Turkey	274.738	298.059	316.911	335.41	350.156	412.636	418.6	495.437
Crop residues (used), fodder crops and grazed biomass	Turkey	25.127	83.475	5.173	4.795	3.163	41.384	19.46	4.361
Crop residues (used)	Turkey	2.97	64.031	1.042	2.004	0.378	25.376	9.52	0.026
Straw	Turkey	2.97	64.031	1.042	2.004	0.378	25.376	9.52	0.026
Other crop residues (sugar and fodder beet leaves, etc.)	Turkey	:	:	:	:	:	:	:	:
Fodder crops and grazed biomass	Turkey	22.157	19.444	4.13	2.791	2.786	16.008	9.94	4.335
Fodder crops (including biomass harvest from grassland)	Turkey	22.157	19.444	4.13	2.791	2.786	16.008	9.94	4.335
Grazed biomass	Turkey	:	:	:	:	:	:	:	:
Wood	Turkey	5,902.47	4,589.092	4,633.338	5,652.882	4,720.535	4,062.351	3,353.57	1,291.369
Timber (industrial roundwood)	Turkey	5,591.469	4,349.416	4,407.92	5,375.974	4,436.954	3,708.271	3,045.51	1,000.773
Wood fuel and other extraction	Turkey	311	239.676	225.418	276.908	283.58	354.08	308.06	290.596
Wild fish catch, aquatic plants and animals, hunting and gatherin	Turkey	65.729	67.53	77.551	110.761	82.958	101.093	100.47	94.494
Wild fish catch	Turkey	59.206	61.656	70.44	103.084	77.153	94.289	92.8	84.481
All other aquatic animals and plants	Turkey	6.523	5.874	7.111	7.677	5.804	6.804	7.67	10.013
Hunting and gathering	Turkey	:	:	:	:	:	:	:	:
Live animals and animal products (excluding wild fish, aquatic pl	Turkey	608.18	429.456	391.575	364.705	415.004	625.073	933.38	615.282
Live animals (excluding wild fish, aquatic plants and animals, hu	Turkey	196.204	67.173	19.706	67.978	150.516	301.04	458.89	199.457
Meat and meat preparations	Turkey	26.368	7.191	1.882	19.955	6.574	22.119	110.77	52.893
Dairy products, birds' eggs, and honey	Turkey	25.792	32.258	39.853	37.993	29.401	23.9	39.13	57.401
Other products from animals (animal fibres, skins, furs, leather,	Turkey	359.817	322.834	330.134	238.78	228.512	278.014	324.59	305.531
Products mainly from biomass	Turkey	8,911.623	9,542.977	10,037.998	10,118.478	11,548.76	13,465.649	11,783.24	13,188.822

Metal ores (gross ores)	Turkey	51,932.666	52,533.307	50,534.23	55,840.457	55,993.86	59,518.05	56,366.56	51,890.657
Iron	Turkey	43,977.314	44,247.285	42,613.165	47,058.461	47,140.167	49,974.471	47,615.49	44,244.836
Non-ferrous metal	Turkey	2,289.003	2,418.364	2,566.748	2,662.293	2,640.93	2,839.025	3,230.84	3,126.563
Copper	Turkey	470.123	481.869	492.848	511.957	527.942	516.325	590.16	492.064
Nickel	Turkey	4.648	4.807	4.98	6.154	5.822	5.596	7.3	7.542
Lead	Turkey	99.36	93.124	105.36	101.708	106.479	124.496	142.76	129.11
Zinc	Turkey	232.728	248.759	255.826	252.029	255.904	288.703	282.74	275.006
Tin	Turkey	2.287	2.515	2.677	2.725	2.64	3.299	3.69	4.239
Gold, silver, platinum and other precious metals	Turkey	0.239	0.314	0.341	0.378	0.35	0.992	10.09	5.714
Bauxite and other aluminium	Turkey	1,161.252	1,265.167	1,376.007	1,431.91	1,400.045	1,498.495	1,727.21	1,719.655
Uranium and thorium	Turkey	0.162	0.213	0.151	0.167	0.248	0.152	0.26	0.321
Other non-ferrous metals	Turkey	318.204	321.595	328.559	355.265	341.499	400.966	466.63	492.913
Products mainly from metals	Turkey	5,666.35	5,867.659	5,354.317	6,119.703	6,212.763	6,704.553	5,520.23	4,519.259
Non-metallic minerals	Turkey	7,623.418	8,984.744	9,790.462	9,281.44	10,131.466	10,774.088	9,183.97	9,708.637
Marble, granite, sandstone, porphyry, basalt, other ornamental	Turkey	362.297	468.724	447.957	405.128	378.422	351.586	264.1	223.38
Chalk and dolomite	Turkey	5.129	4.21	4.718	3.737	4.295	5.179	6.17	8.686
Slate	Turkey	0.563	1.197	0.434	0.515	0.753	1.021	0.85	1.278
Chemical and fertiliser minerals	Turkey	4,428.554	5,417.466	5,901.592	5,536.415	6,424.745	6,820.195	5,839.94	6,675.196
Salt	Turkey	248.636	80.502	29.446	8.581	9.342	6.609	11.16	10.799
Limestone and gypsum	Turkey	297.722	350.328	313.809	247.869	264.851	266.054	201.87	31.381
Clays and kaolin	Turkey	971.849	785.997	986.909	965.702	788.369	883.315	843.79	685.5
Sand and gravel	Turkey	428.725	644.572	734.714	708.546	872.684	965.984	993.27	1,161.538
Other non-metallic minerals n.e.c.	Turkey	211.694	214.158	209.508	222.181	204.944	243.678	263.3	210.41
Products mainly from non metallic minerals	Turkey	668.25	1,017.591	1,161.376	1,182.767	1,183.06	1,230.466	759.52	700.47
Fossil energy materials/carriers	Turkey	81,518.58	79,378.855	60,084.764	95,788.823	104,919.147	113,976.111	103,665.95	106,718.424
Coal and other solid energy materials/carriers	Turkey	28,467.718	26,065.869	5,559.836	33,340.835	36,299.211	38,345.866	38,438.18	37,819.671
Lignite (brown coal)	Turkey	0.075	0	0	0	0	0	0	0
Hard coal	Turkey	28,405.516	25,968.117	5,466.984	33,261.212	36,215.807	38,251.136	38,369.85	37,752.669
Oil shale and tar sands	Turkey	0.041	0	0	0.021	0	0	0	0
Peat	Turkey	62.086	97.753	92.852	79.602	83.404	94.73	68.33	67.002
Liquid and gaseous energy materials/carriers	Turkey	41,976.609	41,557.026	42,230.689	49,802.407	55,931.946	60,437.605	51,285.65	54,534.79
Crude oil, condensate and natural gas liquids (NGL)	Turkey	38,887.471	38,473.714	38,915.35	46,305.42	52,551.773	57,059.703	47,983.89	51,315.745
Natural gas	Turkey	3,089.138	3,083.312	3,315.339	3,496.987	3,380.173	3,377.902	3,301.76	3,219.045
Fuels bunkered (Imports: by resident units abroad); (Exports: b	Turkey	:	:	:	:	:	:	:	:
Fuel for land transport	Turkey	:	:	:	:	:	:	:	:
Fuel for water transport	Turkey	:	:	:	:	:	:	:	:
Fuel for air transport	Turkey	:	:	:	:	:	:	:	:
Products mainly from fossil energy products	Turkey	11,074.253	11,755.96	12,294.239	12,645.581	12,687.99	15,192.64	13,942.12	14,363.963
Other products	Turkey	6,965.6	7,450.072	7,608.672	7,696.302	7,694.841	8,446.627	7,935.33	8,779.863
Waste for final treatment and disposal	Turkey	0.039	0.081	0.033	0.065	0.052	0.056	0.04	0.012
Stage of Manufacturing - finished products	Turkey	37,469.891	40,222.202	39,829.508	52,229	53,697	55,276.486	56,283.838	50,853.032
Stage of Manufacturing - semi-finished products	Turkey	65,810	66,706.698	67,986.814	60,358	61,383	69,386.898	63,553.065	59,664.913
Stage of Manufacturing - raw products	Turkey	69,630	66,946.999	49,372.295	84,744.264	92,018.157	101,209.696	91,214.327	105,771.186

Special value:	
:	not available
UNIT	Thousand tonnes
INDIC_ENV	Exports

MATERIAL	GEO/TIME	2012	2013	2014	2015	2016	2017	2018	2019
Total	Turkey	98,875.726	100,141.382	99,264.709	99,321.795	103,767.876	115,532.56	131,808.62	150,769.935
Biomass	Turkey	13,089.134	14,648.838	15,182.655	15,365.584	17,848.455	19,629.937	23,865.42	23,754.502
Crops (excluding fodder crops)	Turkey	8,712.885	9,649.135	9,703.122	10,041.583	11,724.906	12,482.581	15,570.83	14,774.244
Cereals	Turkey	3,511.394	4,024.158	3,960.423	4,477.192	5,510.298	5,837.653	7,205.21	6,878.753
Roots, tubers	Turkey	93.276	323.05	17.609	15.88	223.445	258.381	296.82	231.42
Sugar crops	Turkey	33.457	63.921	15.959	9.978	16.517	4.106	131.3	66.69
Pulses	Turkey	248.791	233.124	238.239	310.804	318.1	336.989	706.61	688.671
Nuts	Turkey	296.297	300.087	278.763	264.998	255.948	297.08	341.94	395.679
Oil-bearing crops	Turkey	80.544	75.638	59.856	63.789	262.855	156.525	282.63	304.484
Vegetables	Turkey	1,414.421	1,407.718	1,663.002	1,441.094	1,443.862	1,638.894	1,638.07	1,764.716
Fruits	Turkey	2,526.8	2,708.207	2,930.299	2,933.608	3,170.707	3,433.983	4,314.63	3,776.278
Fibres	Turkey	168.769	149.402	140.391	161.62	163.521	146.42	220.05	227.822
Other crops (excluding fodder crops) n.e.c.	Turkey	339.135	363.83	398.582	362.619	359.653	372.551	433.57	439.729
Crop residues (used), fodder crops and grazed biomass	Turkey	8.985	6.428	20.258	22.56	12.897	15.445	30.72	86.868
Crop residues (used)	Turkey	4.74	1.358	19.127	15.989	7.142	14.232	14.34	8.96
Straw	Turkey	4.74	1.358	19.127	15.989	7.142	14.232	14.34	8.96
Other crop residues (sugar and fodder beet leaves, etc.)	Turkey	:	:	:	:	:	:	:	:
Fodder crops and grazed biomass	Turkey	4.246	5.07	1.132	6.571	5.754	1.213	16.38	77.908
Fodder crops (including biomass harvest from grassland)	Turkey	4.246	5.07	1.132	6.571	5.754	1.213	16.38	77.908
Grazed biomass	Turkey	:	:	:	:	:	:	:	:
Wood	Turkey	778.351	800.745	1,031.069	961.673	1,054.232	1,361.096	1,495.43	1,845.951
Timber (industrial roundwood)	Turkey	777.313	798.059	1,028.669	959.755	1,051.606	1,355.388	1,489.29	1,835.702
Wood fuel and other extraction	Turkey	1.038	2.686	2.399	1.918	2.626	5.708	6.14	10.249
Wild fish catch, aquatic plants and animals, hunting and gatherin	Turkey	78.956	101.047	115.365	120.8	158.971	156.005	186.23	209.929
Wild fish catch	Turkey	71.162	92.987	107.895	113.523	151.355	147.907	176.75	199.501
All other aquatic animals and plants	Turkey	7.795	8.059	7.47	7.277	7.616	8.098	9.48	10.427
Hunting and gathering	Turkey	:	:	:	:	:	:	:	:
Live animals and animal products (excluding wild fish, aquatic pl	Turkey	1,026.124	1,091.191	970.871	780.163	887.56	1,082.48	1,255.84	1,192.692
Live animals (excluding wild fish, aquatic plants and animals, hur	Turkey	0.67	1.237	2.878	15.749	16.684	11.535	34.56	37.876
Meat and meat preparations	Turkey	328.649	391.892	433.554	359.563	336.248	448.475	558.83	549.554
Dairy products, birds' eggs, and honey	Turkey	344.008	405.72	431.646	338.502	469.074	546.48	576.72	523.271
Other products from animals (animal fibres, skins, furs, leather,	Turkey	352.797	292.342	102.793	66.35	65.554	75.989	85.73	81.991
Products mainly from biomass	Turkey	2,483.833	3,000.292	3,341.97	3,438.805	4,009.891	4,532.33	5,326.37	5,644.819

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