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1. Introduction

Climate change and depletion of the world resources lead humanity to rethink the limits of the Planet. The rapid and substantial decarbonisation is required in order to stay within the temperature increase targets compatible with the Paris Agreement. The Intergovernmental Panel on Climate Change (IPCC) Report puts forward that the Planet is around 1 degree Celsius warmer than it was in the pre-industrial era¹ and we need to reach net zero by 2050 to limit global warming 1.5 degrees Celsius, according to the Report. In August 2018, global average concentration of atmospheric CO₂ was 405.04 ppm². On 20 November, World Meteorology Organisation (WMO) showed that there has been a 41 per cent increase in long-lived greenhouse gas emissions since 1991³.

Circular economy (CE) itself particularly promise for meeting the 2030 Agenda for Sustainable Development. In the wake of the Paris Agreement and 17 Goals, the role of CE, supported by the European Union (EU), can play a role in meeting Goal 13 and many of the SDGs targets from ocean action to food waste.

Recent literature has no common definition on CE. It is described in various ways. According to EC, it advocates “to maintain the value of products, materials and resources for as long as possible by returning them into the product cycle at the end of their use, while minimizing the generation of waste”⁴. CE also refers to redesigning production, reusing, repairing and recycling of materials and products, resource efficiency and renewable energy.

Waste management seems to be a central policy area in existing economic system. However, circular economy is not only related to waste management. Rather, it refers to a new economy where all scales such as business community, consumers work effectively in a shifted system while eliminating environmental impacts. The system advocates innovative technology, product design and collaboration with stakeholders. It is “an industrial system that is restorative and regenerative by design”⁵. This transition towards CE requires a new market economy. Following the approval by the Council, the Circular Economy Package includes a set of measures on waste management for the future. Additionally, the Commission states that the package offers new jobs and ensures competitiveness in the EU.

This brief report sketches out Turkey’s performance on CE. At the same time, this present report summarises Turkish legislations in alignment with the EU Directives and national initiatives.

¹ IPCC (2018). Global Warming of 1.5 °C Summary for Policymakers, Article A1, p. 6, available at:

<https://www.ipcc.ch/sr15/chapter/summary-for-policy-makers/>

² NOAA Global Trends, updated on 5 November 2018), available at: <https://www.esrl.noaa.gov/gmd/ccgg/trends/global.html> (updated on 5 November 2018)

³ WMO (2018). <https://public.wmo.int/en/media/press-release/greenhouse-gas-levels-atmosphere-reach-new-record>

⁴ Available at: <https://ec.europa.eu/eurostat/web/circular-economy>

⁵ Ellen Macarthur Foundation (2017). *The New Plastics Economy: Rethinking the Future of Plastics & Catalysing Action*, available at: https://www.ellenmacarthurfoundation.org/assets/downloads/publications/NPEC-Hybrid_English_22-11-17_Digital.pdf

2. An Overview of Circular Economy

2.1. Circular Economy in the European Union

The EU aims to push forward the model of waste avoidance as well as reduce, reuse, repair and recycle of materials and products. Following the ratification of the revised version, the final Circular Economy Package came into force in July 2018. With the Package, the Union will go further by setting more ambitious targets in transition towards more sustainable economy. The package also covers six waste-related Directives⁶ and EU's Action Plan. The package also outlines measures for transparency among Member States.

The final Package sets recycling targets for both packaging and municipal waste. As a compromise, Member States will be obliged to meet a 55 per cent municipal recycling rate by 2025, 60 per cent by 2030 and 65 per cent by 2035. However, there are only 10 countries on track in terms of the first goal of 55 per cent by 2025⁷. Specific material targets for packaging for 2030 as follow: 70 per cent for all packaging, 55 per cent for plastic, 30 per cent for wood, 80 per cent for ferrous metals, 60 per cent for aluminium, 75 per cent for glass and 85 per cent for paper and cardboard. In addition, the EU with the package aims to reduce landfilling to 10 per cent of municipality waste generated by 2035.

Member States will also need to start setting up a separate collection for textile waste and hazardous waste from households in 31 December 2023 until 1 January 2025.

2.2. Circular Economy in Turkey

Circular economy is still a new concept in Turkey. Together with legislations related to CE, NGOs and business community carry out some activities in this area (see Chapter 3). The Ministry of Environment and Urbanisation, the Ministry of Energy and Natural Resources, the Ministry of Development, the Ministry of forestry and deal with regulations on CE.

Regarding the CE-related activities, the recent focus in the country is placed on “zero waste regulation”. In addition to this, Turkey has continued to align with the EU Directives since 2005. Regarding the waste management, the legislative framework is mostly aligned, according to the progress reports released by the Commission. However, further work to eliminate landfills is needed in the country. Again, the alignment with the EU's Water Framework Directive is not completed.

The Ministries have prepared national action plans such as National Recycling Strategy and Action Plan, and National Waste Management Action Plan. The waste categories are as follows: a) packaging b) municipal waste c) biodegradable waste d) construction and demolition waste e) dangerous f) medical g) special (waste oil: waste engine, industry oil and vegetable oils), waste batteries and accumulators, end-of-life vehicles, end-of-life tires and waste electrical and electronic goods). Turkey also ratified the Convention for the Safe and Environmentally Sound Recycling of Ships in 2017. Importantly, the 11th Development Plan has been ratified by the Turkish Parliament in July 2019. The Zero Waste Project is targeted to be implemented in the country through the plan as well.

Environmental policy management is implemented under the Environmental Law No.2872 (1983). Municipal, packaging, medical, hazardous, excavation soil, construction and demolition, batteries and accumulators, engine oils, industry oil, end-of-life vehicles, electric and electronics are regulated under

⁶ Directive 2008/98/EC on waste, Directive 94/62/EC on packaging and packaging waste, Directive 1999/31/EC on the landfill of waste, Directive 2000/53/EC on end-of-life vehicles, Directive 2006/66/EC on batteries and accumulators and waste batteries and accumulators, Directive 2012/19/EU on waste electrical and electronic equipment.

⁷ Neligan, A. (2018). 2025 recycling target: Only 10 EU countries on track, IW-Kurzbericht, No.28/2018, Institut der deutschen Wirtschaft (IW), Köln, available at: https://circulareconomy.europa.eu/platform/sites/default/files/iw-kurzbericht_2018_28_circular_economy.pdf

the Law. Environmental Law, Greater/Metropolitan City Law and Municipal Law refer to waste management rules.

Law	Content
Environmental Law No. 2872	to protect and improve the environment(...)of all citizens; make better use of and preserve land and natural resources(...)prevent water, land and air pollution; by preserving(...)vegetative and livestock assets and natural and historical richness;(...)secure health and life conditions in conformity with economical and social development objectives.
Greater/Metropolitan City Law No.5216, 10.07.2004	to regulate legal status of the greater city management, and to ensure undertaking of services effectively, efficiently and in harmony within a plan.
Municipal Law No.5393, 03.07.2005	to lay down the establishment, organs, administrations, duties, powers, responsibilities and working procedures and principles of municipalities.
Energy Efficiency Law No.5627, 02.05.2007	the efficient use of energy, the prevention of waste, reduction energy costs and covers rules for industry, big buildings, project support, consultancy companies, voluntary agreements.
Water Law	still pending.

3. National Performance

3.1. Regulation Related to Circular Economy

Regulations	EU Directives
Waste Management	
Regulation on Waste Management (29314th Official Gazette, 02.04.2015)	2008/98/EC (framework)
Regulation on the Control of Packaging Waste (30283th, 27.12.2017)	2015/720/EU
Regulation on the Control of Waste Electrical and Electronic Equip. (28300th, 22.05.2012)	2012/19/EU
Regulation on the Control of Waste Batteries and Accumulators (25569th, 31.08.2004)	2006/66/EC
Regulation on the Control of Waste Oils (26952th, 30.07.2008)	2008/98/EC (framework)
Regulation on the Landfill of Waste (27533th, 26.03.2010)	2008/98/EC (framework)
Regulation on Waste Incineration (27721th, 06.10.2010)	2000/76/EC

Regulation on Herbal Oil (29378th, 06.06.2015)	2004/24/EC
Regulation on Control of Medical Wastes (29959th, 25.01.2017)	
Regulation on Ship Wastes and Control of Waste (25682th, 26.12.2004)	1257/2013
Regulation on Control of End of Life Vehicles (27448th, 30.12.2009)	2017/2096/EU
Regulation on Control of PCBs and PCTs (26739th, 27.12. 2007)	1996/59/EC
Regulation on Zero Waste (12.07.2019)	2008/98/EC (framework)
Energy Efficiency	
Regulation on Mining Waste Management	2006/21/EC
Regulation on Energy Efficiency (30470th, 06.07.2018)	2012/27/EC
Regulation on Energy Performance of Buildings (30051th, 28.04.2017)	2010/31/EU
Regulation on Eco-design for Energy-Related Products (27722th, 07.10.2010)	2009/125/EC
Regulation on Environmental Labelling (30570 th , 19.10.2018)	
Water	
Regulation on Urban Waste Water (26047th, 08.01.2006)	2000/60/EC (framework)
Food	
Regulation on Waste Management (29314 th , Official Gazette, 02.04.2015)	2008/98/EC (framework)
Construction and Demolition	
Regulation on Excavated Soil, Construction and Demolition Waste (25406th, 18.03.2004)	2008/98/EC (framework)
Ecolabel	
Regulation on Eco-label (30570th, 19.10.2018)	66/2010
Regulation on Energy Efficiency Labelling	2010/30/EC

3.2. National Initiatives

There are attempts on both public, private and NGO sides regarding CE.

The Zero Waste Project initiated by the Ministry of Environment and Urbanisation launched in July 2017. The project involves secondary materials from plastics to food wastes for reusing and recycling. The main purpose of this project is to prevent waste, promote efficient use of resources, separate collection of waste at source, establish efficient zero waste management and a zero waste certificate to regulate principles and procedures.

Regulation on Zero Waste came into force on 12 July 2019. The aim is to establish a zero waste management system aiming at protecting environmental and human health as well as resources in waste management processes in line with the principles of sustainable development.

NGOs and business community carry out activities regarding CE as well. In cooperation with **Turkey Materials Marketplace Project** run by the cooperation between US Business Council for Sustainable Development (US BCSD) and SKD Turkey/BCSD Turkey is a digital platform where industries exchange materials. The project is funded by the European Bank for Reconstruction and Development (EBRD). The aim is to contribute to CE transition in Turkey. There are more than 100 companies registered in the platform.

Another project under the BCSD Turkey is **DO! (Be Sensitive)** launched in 2015 and put into practice in 2017. The Project aims to promote savings in materials, electricity, water, fuel and paper at work places.

BCSD Turkey also analysis eco-labelling systems in order to support both environmental and social sustainability concerns in industry in Turkey under the Council's objective entitled **Guide on Eco-Labels for Sustainability**. The guide gives a further focus on consumers' role in promoting sustainable industry sector⁸.

Another initiative is "Good4trust" which is a community platform that brings producers and prosumers together while sharing their goods. This is called prosumer economy through which transforming the existing consumer economy into an economy where there is no negative impact on both ecological and social systems.

Turkey enforced plastic bag fees from 1 January 2019. However, the country is in early phase to tackle plastic pollution.

4. Findings

Production and consumption

Turkey in the first months of 2018, imported over 27.000 tons of waste plastic from the UK⁹. As one of the top 10 around the world, Turkey imported 705 million PVC in 2016¹⁰. Even though international banks multilateral development banks (MDBs) and EBRD explore the potential in Turkey, investment gaps is also present in the country, particularly on compost, burning, reduction of landfilling, biological

⁸ For more information: <http://www.skdturkiye.org/en/surdurulebilir-sanayi-ve-dongusel-ekonomi>

⁹ "Turkey's plastic waste imports from the UK are booming-but at what cost?", *The Guardian*, dated on 18 October 2018, available at: <https://www.theguardian.com/environment/2018/oct/18/uk-plastic-waste-imports-to-turkey-boom-but-at-what-cost>

¹⁰ "World Top 10 Countries Importing PVC Polymer in 2016", *Plastics Insight*, dated on 8 November 2017, available at: <https://www.plasticsinsight.com/world-top-10-countries-importing-pvc-polymer-2016/>

methods and regional waste.

In general, energy efficiency is considered key concept in meeting targets set in the National Climate Change Strategy (2010-2020) and the National Climate Change Action Plan (2011-2023). The National Energy Efficiency Action Plan (2017-2023) prepared by the Ministry of Energy and Natural Resources came into force in 2018. The need here is to identify sectoral targets in energy efficiency area.

In order to improve product design, Turkey has transposed the EU Labelling and Eco-design Directives. In accordance with the EU Eco-label Directive 66/2010, the Regulation on Environmental Labelling was published in Turkish Official Gazette numbered 30570 and dated 19 October 2018. Based on the project entitled “the Establishment of the National Environmental Labelling System” completed by the Ministry of Environment and Urbanisation in 2018, the application for three sectors (textile, ceramic, paper industry) was launched in May 2019.

Regarding the Eco-design requirements, Turkish Regulation on Eco-design for Energy-Related Products published in the Official Gazette in 2010.

Furthermore, the 11th Development Plan sets a specific objective in supporting sustainable production and consumption. Regarding this, environment-friendly products will be encouraged in public procurement.

Waste Management

In accordance with the waste management hierarchy, Turkey is mostly aligned with the EU Directives. Total amount of 247 million tons of household waste was generated in the EU Members in 2016 whilst it was 34 million tons in Turkey during the same year. In addition, the amount of household waste in Turkey also increased by 12 per cent between 2000 and 2016.

Household waste is usually dumped to the landfills directly, even in the EU. Regarding the mid-term targets, the EU aims to reduce landfill to a maximum of 10 per cent of generated municipal waste by 2035. According to the TurkStat, the share of waste collected in total municipal waste generated increased from 84 per cent to 94 per cent. Importantly, more than 90 per cent of municipal waste is sent to landfills. National Waste Management and Action Plan sets the following targets by 2023: a) recycle 35 per cent of generated waste; b) reduce landfills to 65 per cent (compared to 84 per cent); c) increase waste collected separately at the source to 12 per cent (compared to 5.3 per cent in 2014) d) increase recycling to 4 per cent (compared to 0.2 per cent in 2014) by biological treatment; 13 per cent (compared to 5.4 per cent) by mechanical-biological treatment; and 8 per cent (compared to 0.3 per cent) by thermal treatment.

Landfill Percentage (2017)	
EU (average)	Turkey
23%	84%

Landfill Targets	
EU	Turkey
10% by 2035	65% by 2023

Regulation on packaging, electrical and electronic equipment, construction and demolition wastes came are aligned with EU Directives (above).

Second Raw Materials

Facilities for plastic, paper, glass etc. are regulated under the national regulation mentioned above. Plastics are also problematic in Turkey. More than 8 million tons of plastics leak to the ocean every year¹¹. For instance, the EU produced 2.5 billion tons of waste whilst 1.6 billion tons have not been reused or recycled in 2013¹². 150.000 to 500.000 tons of plastic waste is discharged to the ocean yearly, according to the European Commission¹³. In particular, Turkey “annually produced 31 million tons of domestic waste in 2010 and 12 per cent of which consisted of plastic waste”¹⁴. Again, 144 tons of plastic waste ends up in the sea daily in the country¹⁵. Large-scale composting in the country is needed.

Competitiveness and Innovation

Going back to the Helsinki Summit in 1999, Turkey’s status as a candidate country has been recognised by the Union. Following this, Turkey gained the right to participate in some EU Programmes and Agencies. Today, Turkey participated in Erasmus+ Programme, Horizon 2020 Programme, Creative Europe, COSME, CUSTOMS 2020, FISCALIS 2020 and EaSI. Turkey is also one of the Members of the European Environment Agency since 2000. On the other hand, Turkey is not part of the European Innovation Scoreboard.

5. Concluding Notes

As part of the process of accession negotiation with the EU, Turkey continues to align national regulations with the EU *Acquis*. In particular, Turkish waste legislation is driving some improvements in line with the waste management in general. The government currently plans to reduce waste across the country. However, the great majority of municipal waste is still sent to landfills. In addition, recycling under national regulations and Zero Waste Project remain limited. Shifting from “landfill system” to circular waste management system is at early stage in Turkey.

Importantly, Turkey signed the Paris Agreement on 21 April 2015. However, it has not yet ratify the Agreement. Again, the submission of its NDC are still pending.

¹¹ UNEP (2018). UN Declares War on Ocean Plastic, available at: <http://web.unep.org/unepmap/un-declares-war-ocean-plastic>

¹² Proposal for EU Directive amending Directive 94/62/EC, available at: https://eur-lex.europa.eu/resource.html?uri=cellar:b68494d2-999f-11e5-b3b7-01aa75ed71a1.0019.03/DOC_1&format=HTML&lang=EN&parentUrn=CELEX:52015PC0596

¹³ Eunomia (2016). Report for European Commission DG Environment, Study to support the development of measures to combat a range of marine litter sources, available at: <http://ec.europa.eu/environment/marine/good-environmental-status/descriptor-10/pdf/MSFD%20Measures%20to%20Combat%20Marine%20Litter.pdf>

¹⁴ “144 Tonnes of Plastics Go to Seas Daily in Turkey”, *UNDP News Articles*, dated on 1 July 2018, available at: <http://www.tr.undp.org/content/turkey/en/home/presscenter/articles/2018/07/tuerkiye-de-guende-144-ton-plastik-atk-denize-karyor.html>

¹⁵ Ibid.