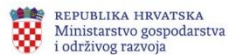




CIRCULAR ECONOMY  
APPROACHES IN  
SOLID WASTE  
MANAGEMENT



Project co-financed by the European Union from the Cohesion Fund

# CIRCULAR ECONOMY IN THE EU AND CROATIA - AN OVERVIEW

DARKO BIZJAK, ENVIRONMENT AGENCY AUSTRIA, RIJEKA, 24 MAY

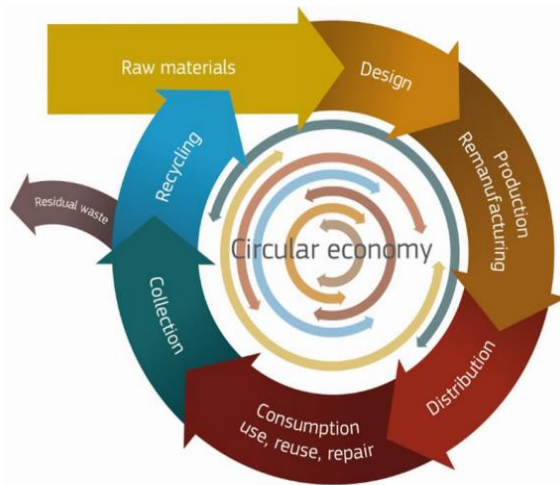
# The linear model of economic



- The global consumption of materials - double in the next forty years
- The amount of waste generated every year - increase by 70% by 2050.
- extracting and processing resources:
  - = 50% greenhouse gas emissions
  - > 90% of biodiversity loss and water stress.

Wautelet, Thibaut. (2018). *Exploring the role of independent retailers in the circular economy: a case study approach.*

# Circular economy (CE)



*“CE is an economic model based inter alia on sharing, leasing, reuse, repair, refurbishment and recycling, in an (almost) closed loop, which aims to retain the highest utility and value of products, components and materials at all times.”*

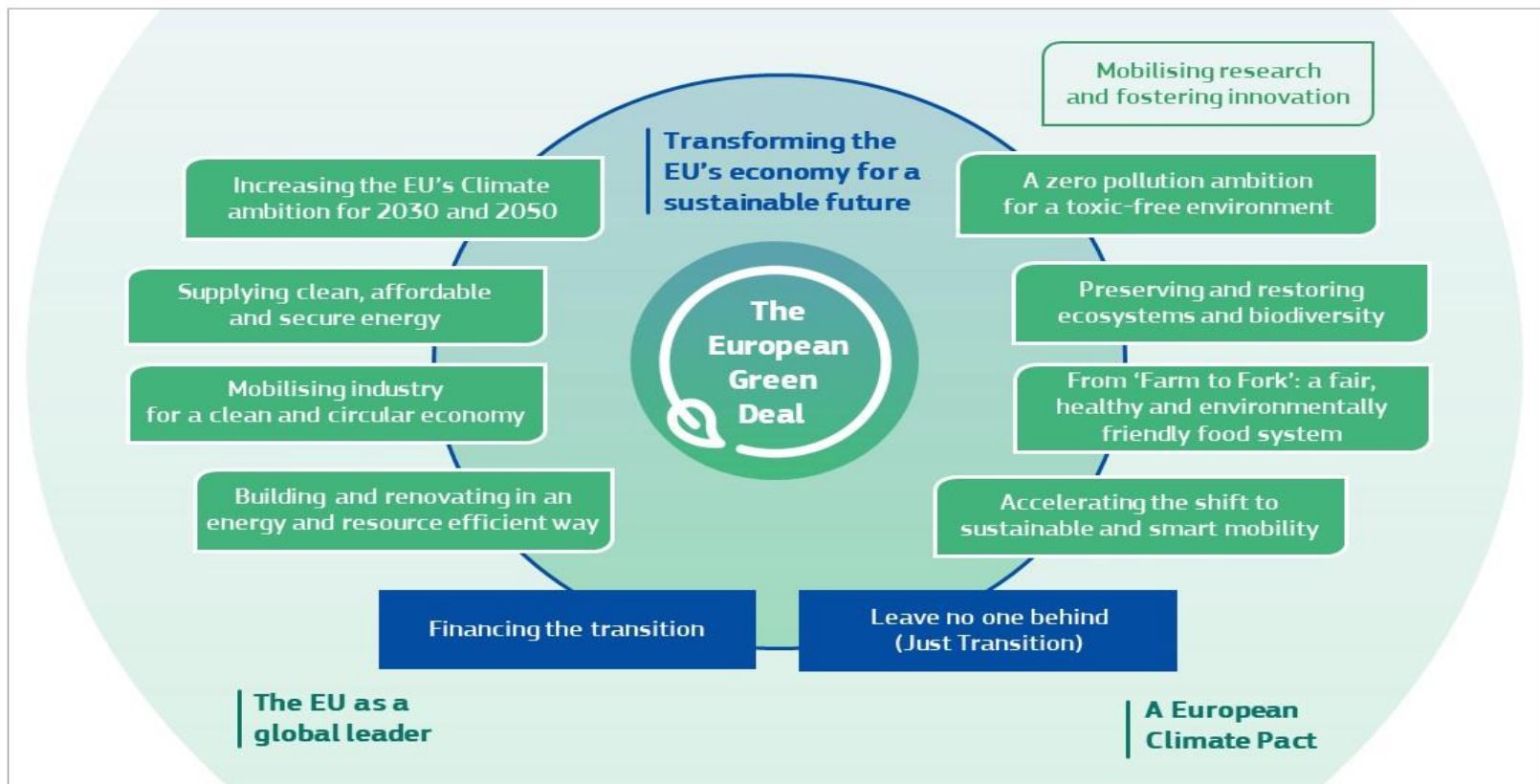
An economy where the:

- value of products, materials and resources is maintained in the economy for as long as possible
- the generation of waste is minimised
- It addresses the whole lifecycle of products: from design and production, to use and waste management

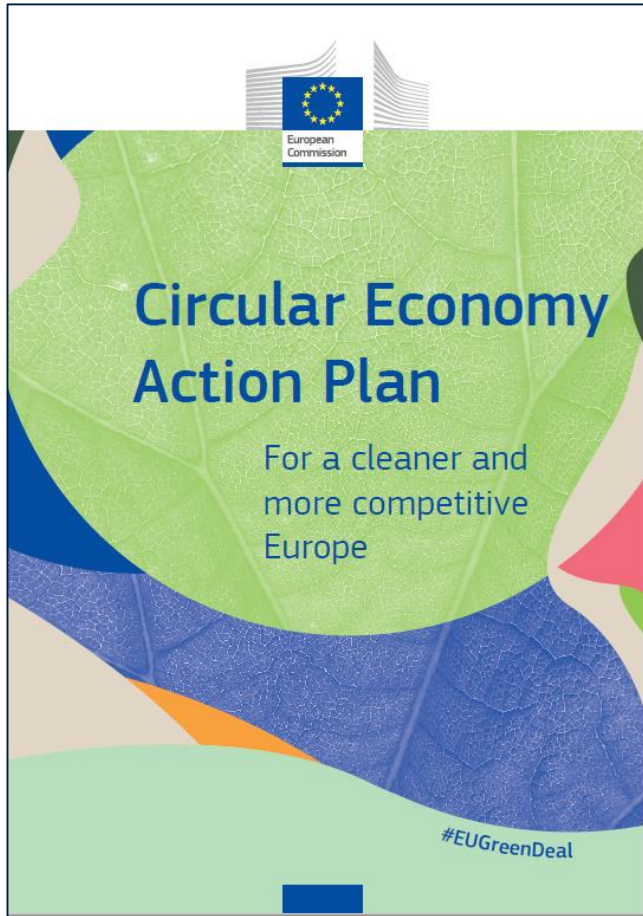
Source: European Parliament (2016). Closing the loop. New circular economy package. Briefing January 2016, [https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS\\_BRI%282016%29573899\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2016/573899/EPRS_BRI%282016%29573899_EN.pdf)

# EU Circular economy action plan as part of the EU Green Deal

## EU agenda for sustainable growth



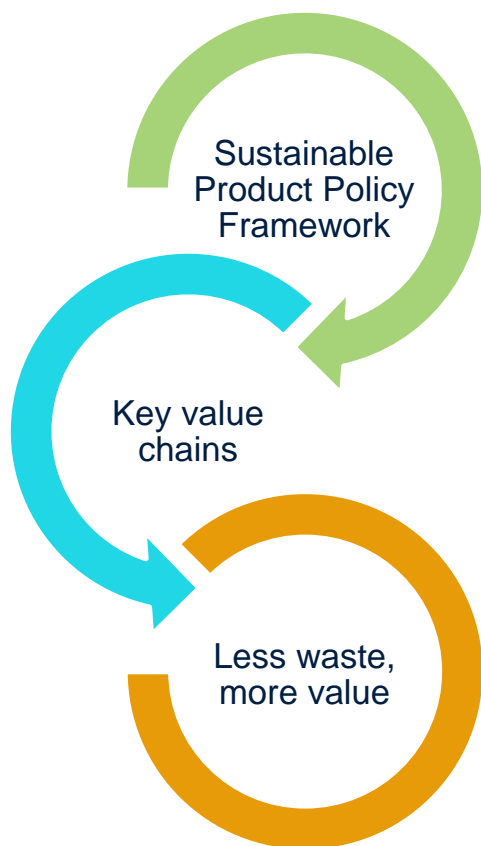
# Circular Economy Action Plan



First Circular Economy Action Plan (2015)

New Circular Economy Action Plan (2020)

# Transforming production and consumption



- Designing sustainable products
- Empowering consumers and public buyers
- Circularity in production processes

- Electronics and ICT;
- Batteries and vehicles;
- Packaging;
- Plastics;
- Textiles;
- **Construction and buildings;**
- Food;
- Water and nutrients

- Enhanced waste prevention and circularity
- Enhancing circularity in a toxic-free environment
- Creating a well-functioning EU market for secondary raw materials
- Addressing waste exports from the EU

# 35 Actions: selection

## A SUSTAINABLE PRODUCT POLICY FRAMEWORK

- Legislative proposal for a **sustainable product policy initiative**
- **Mandatory Green Public Procurement (GPP)** criteria and targets in sectoral legislation and phasing-in mandatory reporting on GPP

## KEY PRODUCT VALUE CHAINS

- EU Strategy for Textiles
- Strategy for a **Sustainable Built Environment**

## LESS WASTE, MORE VALUE

- **Waste reduction targets** for specific streams and other measures on waste prevention
- Methodologies to track and minimise the presence of **substances of concern** in recycled materials and articles made thereof

# Strategy for a sustainable built environment

- ❖ revision of the **Construction Product Regulation**; possible introduction of **recycled content requirements for construction products**;
- ❖ promoting measures to **improve the durability and adaptability of built assets**, and developing **digital logbooks** for buildings;
- ❖ **integrate life cycle assessment in public procurement** and the **EU sustainable finance framework**; using Level(s) framework
- ❖ considering a revision of **material recovery targets set in EU legislation for construction and demolition waste and its material-specific fractions**;
- ❖ promoting initiatives to **reduce soil sealing**, rehabilitate abandoned or contaminated brownfields and **increase the safe, sustainable and circular use of excavated soils**.



# Circular Economy Stakeholder Platform

Good Practices



Strategies



Knowledge



Dialogue



Network



EU Circular Talks



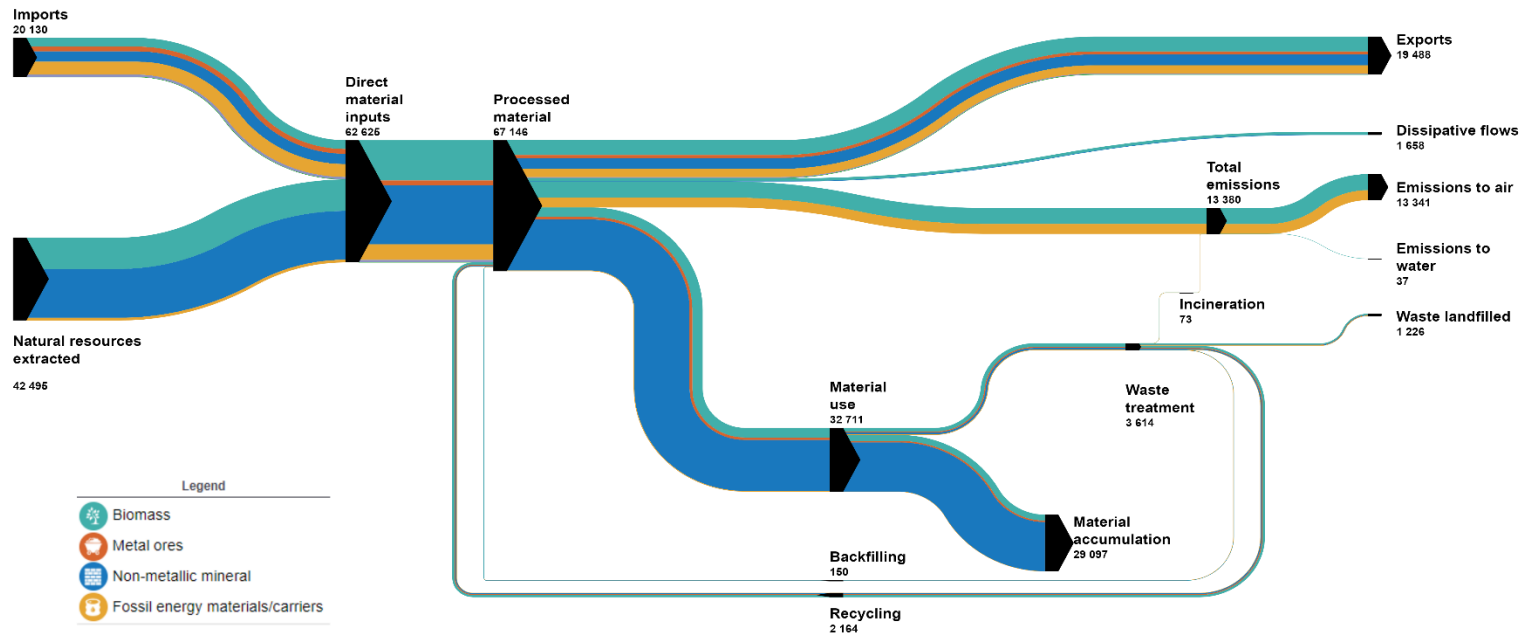
<https://circulareconomy.europa.eu/platform/>

# CE requires material system transformation

## Material flow diagram, Croatia (2020)

### Material flow diagrams 2020 for

Croatia  
Thousand tonnes



Sources: env\_ac\_mfa , env\_ac\_sd , env\_wassd

eurostat

Source: Eurostat

# EU circular economy indicators

11 indicators in 4 groups:

- Production and consumption
- Waste management
- Secondary raw materials
- Competitiveness and innovation

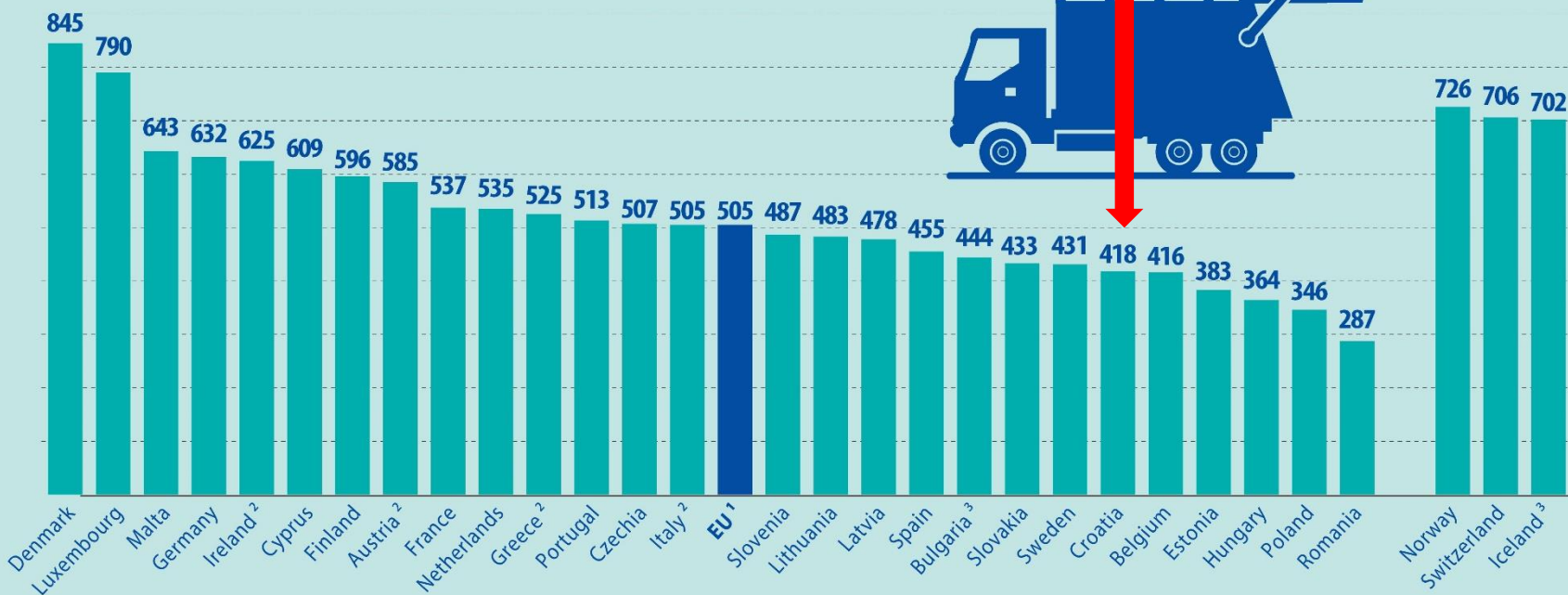
## Circular economy monitoring framework



# CE indicator: generation of municipal waste

## Municipal waste generated in the EU, 2020

(kg per person)

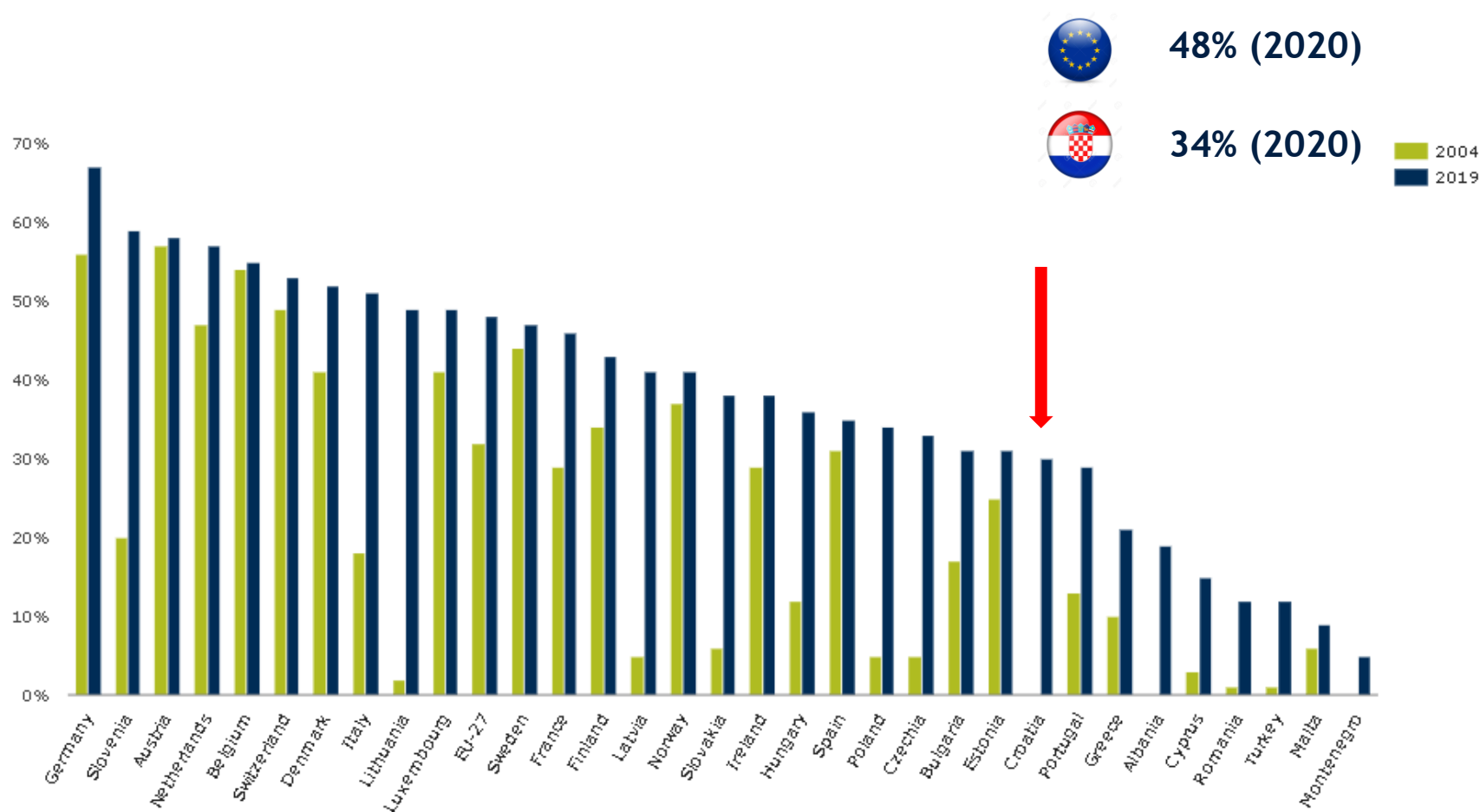


<sup>(1)</sup> Estimated

<sup>(2)</sup> Ireland, Austria, Greece, Italy: 2019 data

<sup>(3)</sup> Bulgaria, Iceland: 2018 data

# CE indicator: Recycling of municipal waste



Source: EPA <https://www.eea.europa.eu/ims/waste-recycling-in-europe>

# CE indicators: Circular material use

## Circular material use rate

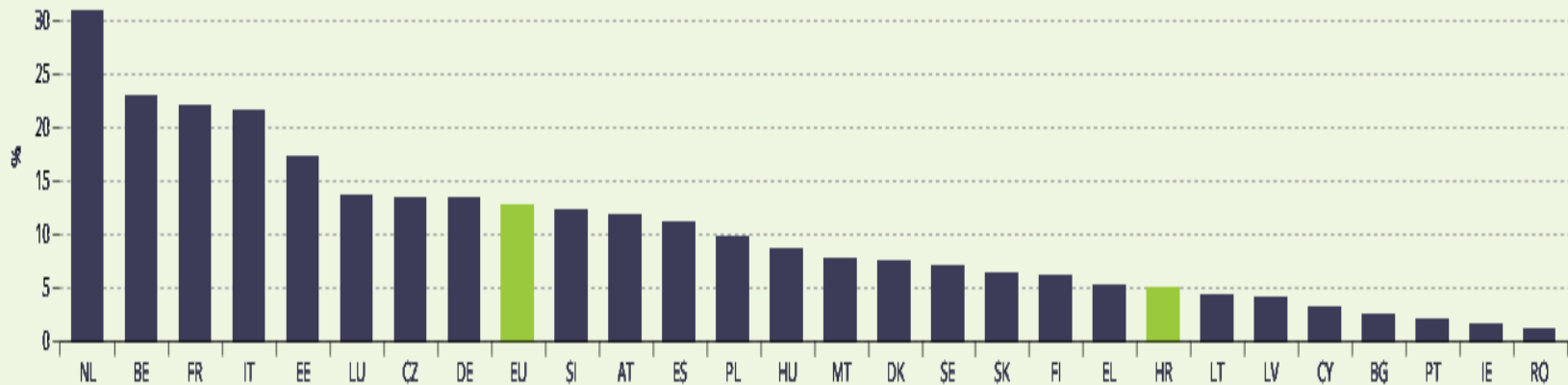
% of material input for domestic use



12.8 % (2020)



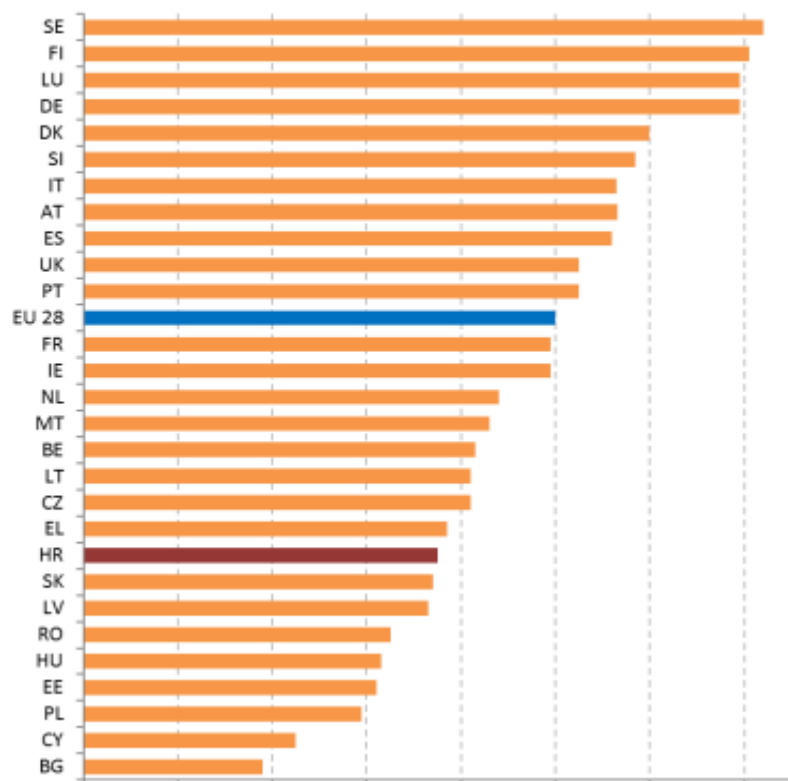
5.1 % (2020)



Source: Eurostat

# Competitiveness and innovation

Figure 3: 2017 Eco-innovation index (EU=100)<sup>12</sup>



Eco innovation index	Below EU average
Eco-label and EMAS	below EU average

Source: The Environmental Implementation Review (EIR) 2019

# Obstacles in achieving circular economy

## ➤ No national Circular Economy Strategy

- suboptimal planning of waste management;
- insufficient ('door-to-door') separate collection of waste;
- insufficient incentives to manage waste according to the waste hierarchy;
- lack of coordination between the different administrative levels;
- economic incentives for citizens and municipalities are yet to be implemented;
- the extended producer responsibility schemes in Croatia do not fully cover the costs of separate collection;
- insufficient enforcement capacity

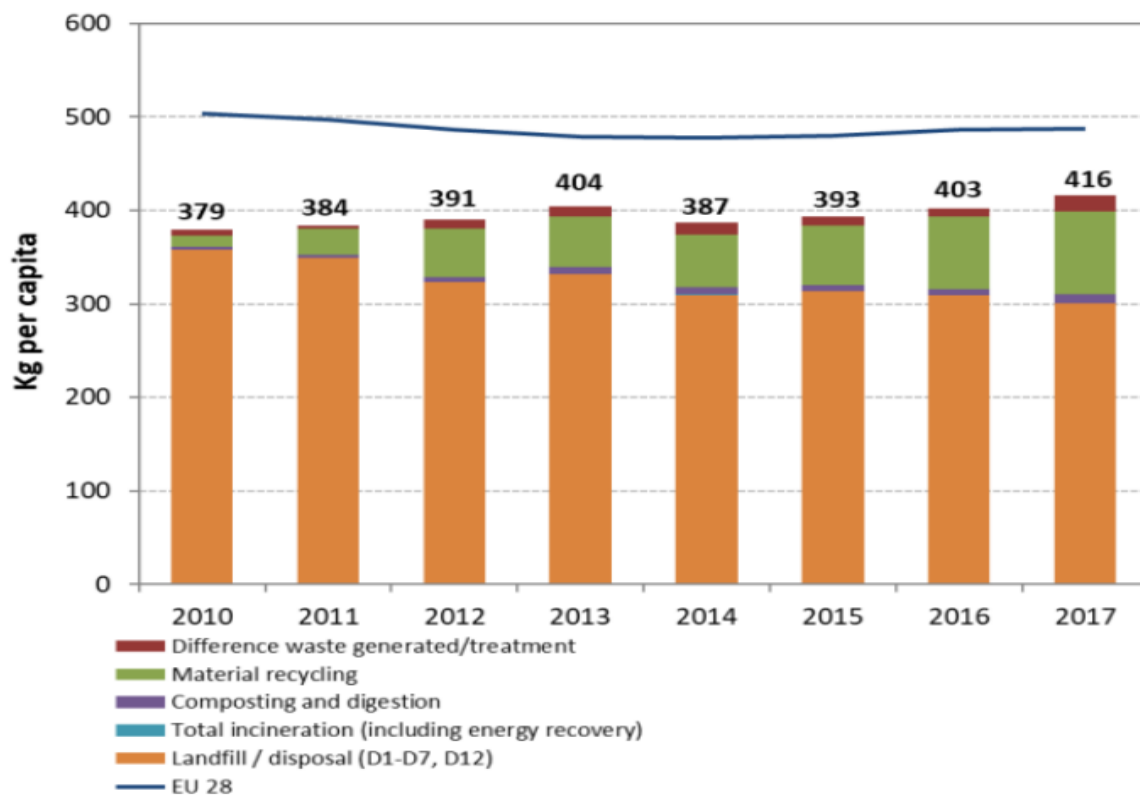
Source:

- *Environmental Implementation Review 2019*
- *EC Early Warning 2018*



# Progress in waste management

Figure 5: Municipal waste by treatment in Croatia, 2010-2017<sup>16</sup>



- **Municipal waste recycling:**
  - 4% (2010) → 34% (2020)
- **Landfill of municipal waste:**
  - 56 % (2020)
  - from 2010 to 2020 landfilling decreased by 41%

Source: EIR 2019 [https://ec.europa.eu/environment/eir/pdf/report\\_hr\\_en.pdf](https://ec.europa.eu/environment/eir/pdf/report_hr_en.pdf)

# Steps forward

- **Legislation in line with EU legislation, e.g.:**
  - New Law on Waste Management (OG 84/21)
  - Revised Waste Management Plan for the period 2017-2022, including a Waste Prevention Plan (OG 1/2022)
- **Strategic documents including circular economy principles, e.g.:**
  - the National Reform Plan 2020
  - National Recovery and Resilience Plan 2021-2026
  - Program for the development of circular management of space and buildings
- **Circular Economy Action Plan for the area of Construction and Demolition Waste** – being developed
- **Connecting stakeholders:**
  - National Circular Economy Committee - established
  - Digital CE platform - will be established

**Thank you for listening!**

Darko Bizjak  
Environment Agency Austria  
National Coordinator