

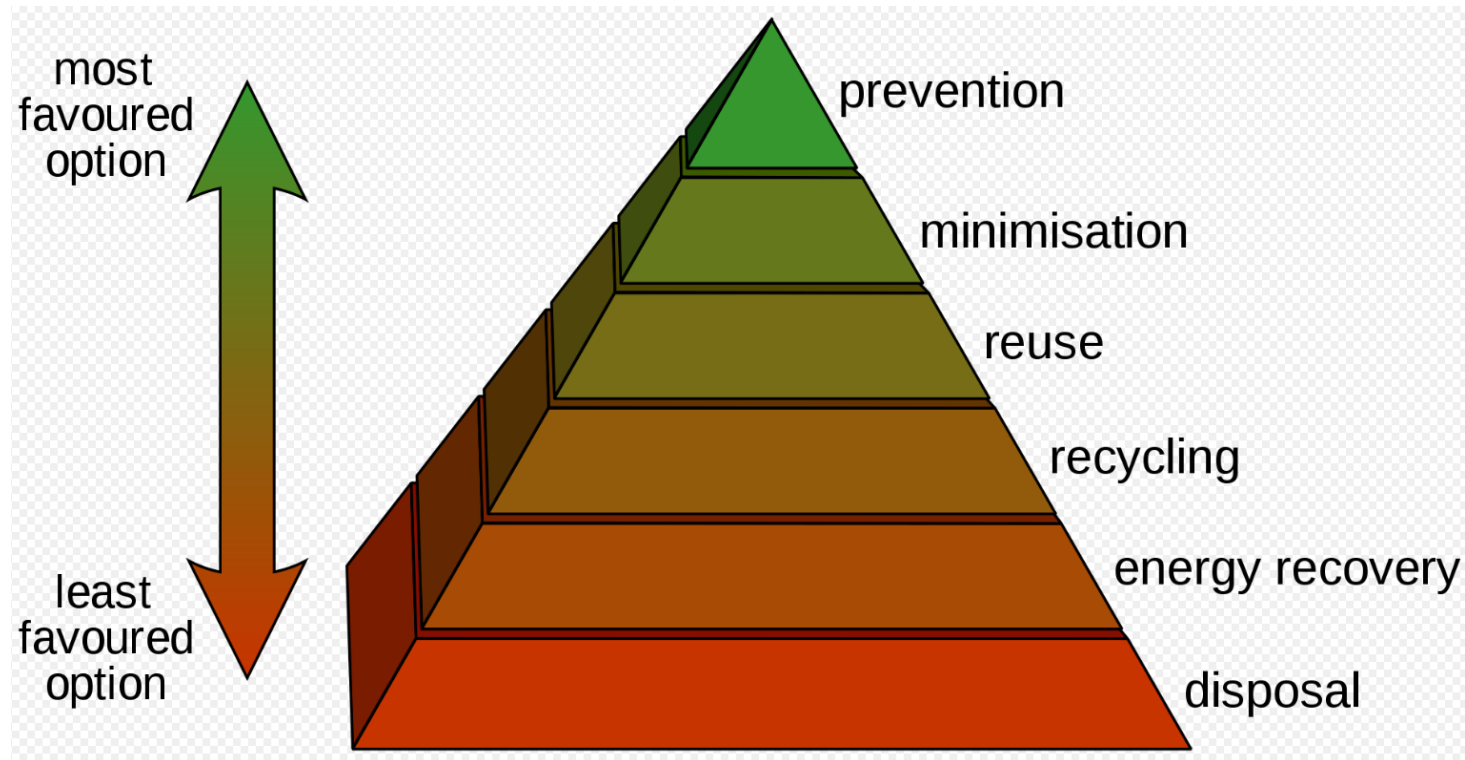


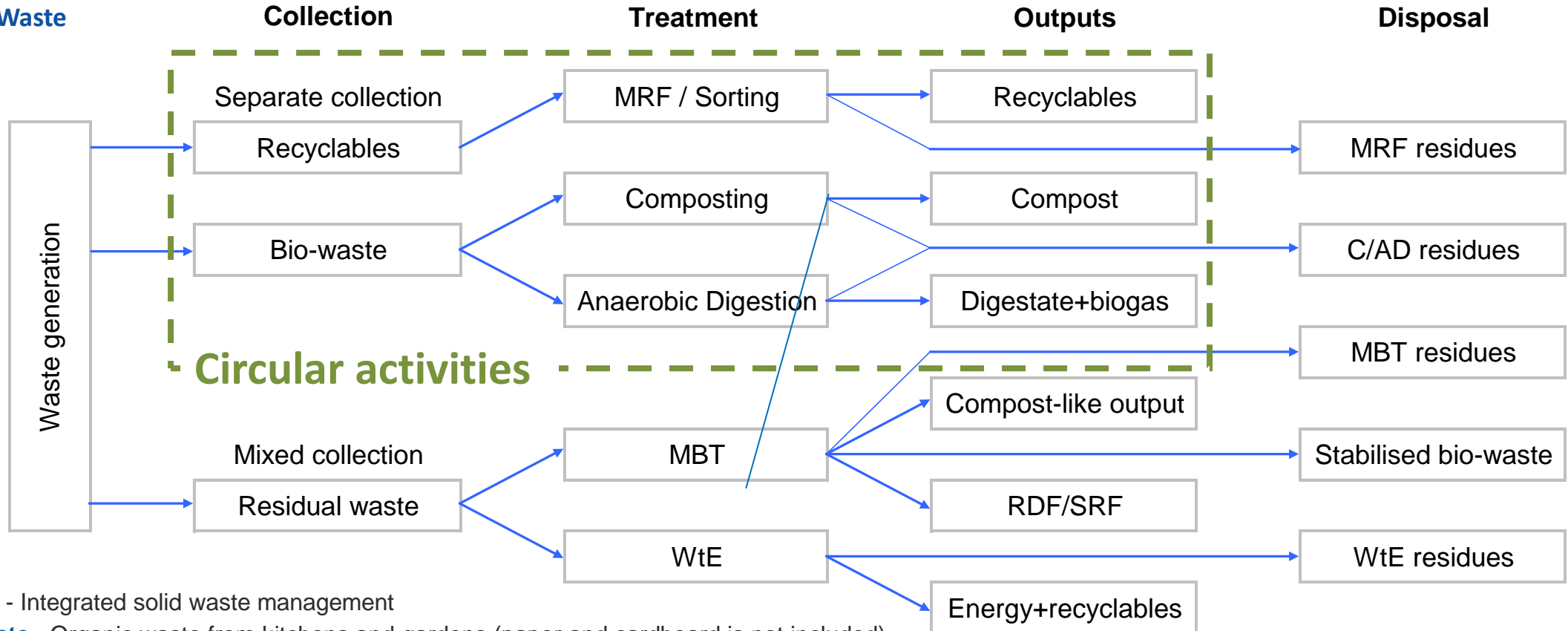
From waste management to circular resource management – the EU experience

16 November 2022

Jonas Byström, European Investment Bank

EU waste management priorities - the waste hierarchy





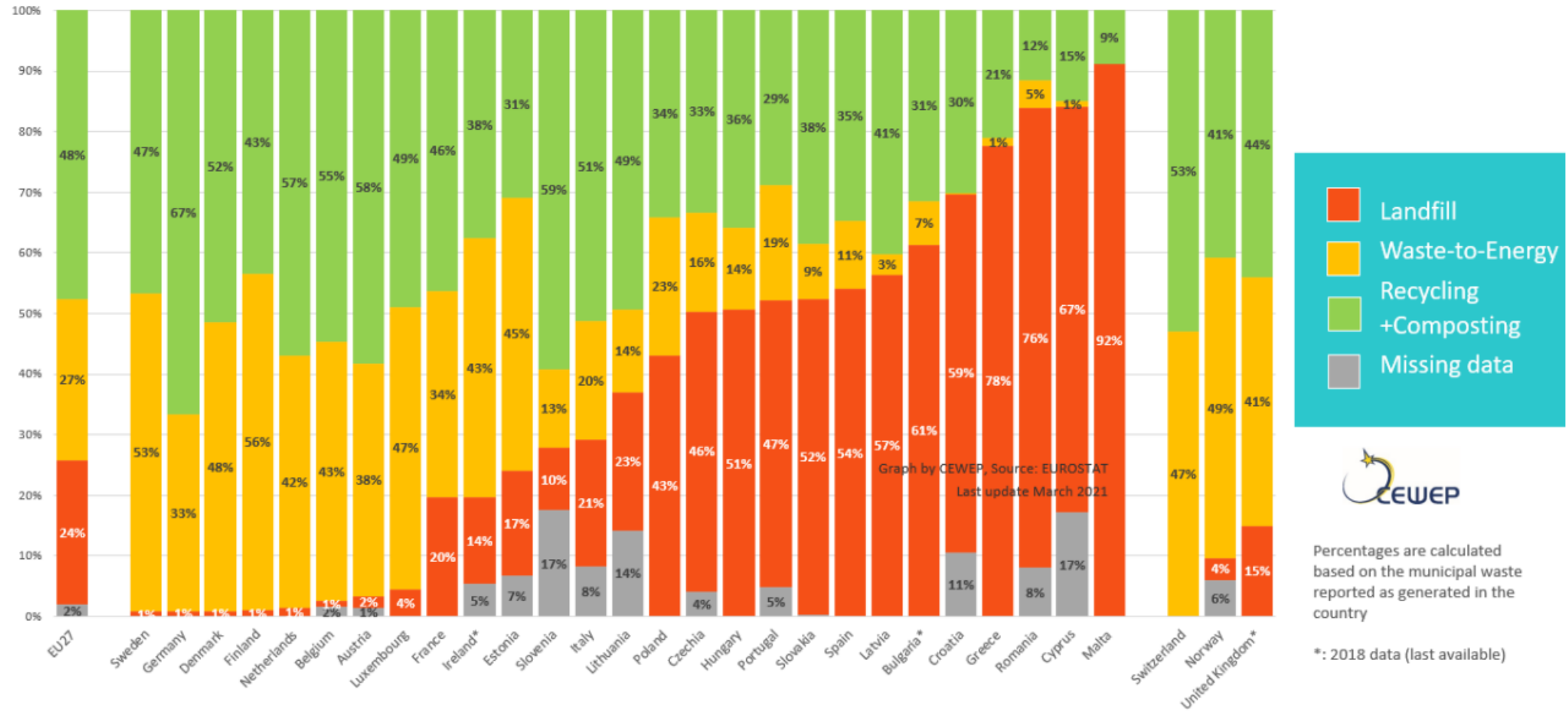
- **ISWM** - Integrated solid waste management
- **Bio-waste** - Organic waste from kitchens and gardens (paper and cardboard is not included)
- **Residual waste** - The waste stream that remains after upstream separate collection of recyclable materials/bio-waste)
- **MRF** - Material recovery facility (sorting/refinement of separately collected recyclable materials)
- **MBT** - Mechanical biological treatment facility (combination of mechanical and biological treatment of residual waste)
- **WtE** - Waste incineration with recovery of electricity/heat
- **RDF** - Refuse derived fuel (end product with low heating value and varying quality produced at MBT plant)
- **SRF** - Solid recovered fuel (end product with high heating value and standardised quality produced at MBT plant)
- **C** - Composting facility (aerobic treatment of organic waste producing a soil conditioner)
- **AD** - Anaerobic digestion (anaerobic treatment of organic waste producing an energy rich gas and a soil conditioner)
- **CLO** - Compost-like output (compost from mixed waste organics used for backfilling, i.e. reclamation in excavated areas or for engineering purposes)

Overview of EU Solid Waste Management



Municipal waste treatment in 2019

EU 27 + Switzerland, Norway and the UK



Graph by CEWEP, Source: EUROSTAT
Last update March 2021



Percentages are calculated based on the municipal waste reported as generated in the country

*: 2018 data (last available)

Waste management EU – current status

EU waste generation and handling in 2020

EU comparison	Municipal Solid Waste generation (kg/cap/year)	Municipal Solid Waste treated (kg/cap/year)	Treatment/disposal share (%)				
			Material Recycling	Composting/AD	Material recycling + composting	Incineration with energy recovery	Landfill disposal
EU min	287	269	8%	0%	11%	0%	0%
EU max	845	845	57%	33%	75%	61%	89%
EU average	510	490	27%	14%	41%	25%	34%
Romania	287	269	8%	7%	14%	6%	80%
Sweden	431	427	20%	18%	39%	61%	0%
Germany	632	632	48%	19%	67%	32%	1%
Slovenia	487	385	57%	18%	75%	17% (in AT)	9%

Source: Eurostat

Observations:

- ❖ Large variations in waste generation – waste quantities reflecting economic development (GDP)
- ❖ Large variations in how waste is handled - high landfill disposal vs. high recycling in some countries
- ❖ Major EU compliance gaps in many countries - need for investments to support increased separate material and bio-waste collection recycling and reduce landfilling

Waste management EU – Future targets

Targets	2025	2030/2035
Recycling/re-use of municipal waste by 2035	55%	65%
Packaging waste recycling/re-use by 2030	65%	70%
Plastic packaging recycling by 2030	50%	55%
Wood recycling by 2030	25%	30%
Ferrous metal, aluminium, glass recycling by 2030	70/50/70%	80/60/75%
Paper and cardboard packaging	75%	85%
Separate collection of bio-waste	By Dec 2023	
Maximum landfill disposal rate by 2035		10%
Ban on landfilling separately collected waste	-	Yes

Plastic waste management EU

EU plastic production and management

- Total plastic production 2020: 55m tonnes in EU (367m tonnes global), expected to double in 20 years
- Post consumer plastic waste generation in EU 2020: 29.5m tonnes
- Plastic recycling in EU in 2020: 35% at max 2/3 efficient recycling
- Plastic packaging waste recycling EU in 2019: Around 30% if calculated according to new approach prescribed in the revised Waste Framework Directive

Investment drivers

- EU plastic packaging waste recycling targets: 50%/55% by 2025/30
- Single use plastics directive: min 25%/30% rPET in bottles by 2025/30, 77/90% recycling of single use plastic beverage bottles by 2027/29
- EC Circular Plastic Alliance goal: 10m tonnes of recycled plastics used in products by 2025 (20%)

Solid waste sector and circular economy interfaces

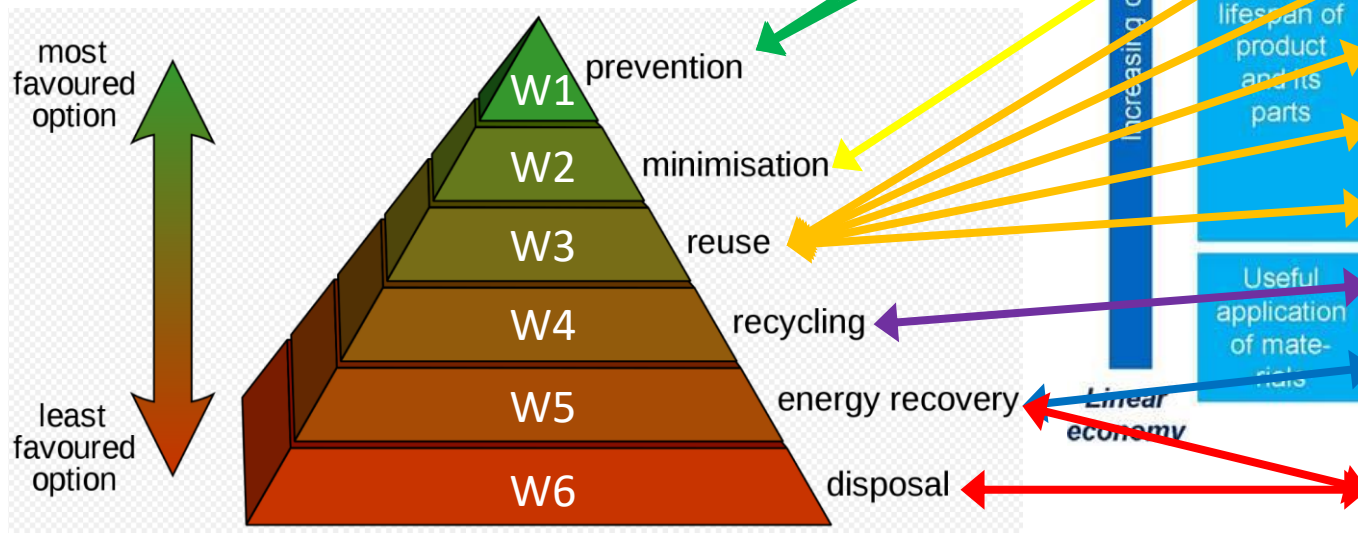
- The solid waste sector activities and the circular economy horizontal topic **overlaps** in the circular waste project types, in particular in relation to **recovery and recycling of recyclable materials and bio-waste**
- **Residual waste** treatment is not regarded as circular but is an important aspect of integrated solid waste management
- **Integrated solid waste management projects** usually comprises both recycling (collection and treatment) and residual waste treatment/disposal components



Waste hierarchy and circular economy priorities

Circular Economy priorities

Waste hierarchy /priorities



Strategies

R0 Refuse	Make product redundant by abandoning its function or by offering the same function with a radically different product
R1 Rethink	Make product use more intensive (e.g. by sharing product)
R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
R3 Reuse	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
R4 Repair	Repair and maintenance of defective product so it can be used with its original function
R5 Refurbish	Restore an old product and bring it up to date
R6 Remanufacture	Use parts of discarded product in a new product with the same function
R7 Repurpose	Use discarded product or its parts in a new product with a different function
R8 Recycle	Process materials to obtain the same (high grade) or lower (low grade) quality
R9 Recover	Incineration of material with energy recovery

Energy recovery is not considered circular in the EU taxonomy

The EU Taxonomy

- The EU taxonomy is a classification system created by the EC establishing a list of environmentally sustainable economic activities based on a set of definitions and rules enshrined in the [EU Taxonomy Regulation](#).
- The EU Taxonomy Regulation establishes the following **six environmental objectives**:
 - (1) Climate change mitigation, (2) Climate change adaptation,
 - (3) Sustainable use and protection of water and marine resources, (4) **Transition to a Circular Economy**,
 - (5) Pollution prevention and control, (6) Protection and restoration of biodiversity and ecosystems
- The core of the EU Taxonomy Regulation is the definition of a **sustainable economic activity**, based on two criteria:
 - The activity must “**substantially contribute**” to at least one of six environmental objectives, AND
 - “**Do no significant harm**” to any of the other objectives, while respecting basic human rights & labour standards.
- Under the EU Taxonomy Regulation, the EC has to come up with the actual list of environmentally sustainable activities by defining **technical screening criteria (TSC)** for each environmental objective through **delegated acts (DA)**. The task of developing the taxonomies and proposing TSC is done by a Technical Expert/Working Group appointed by the EC.
- A [first DA on sustainable activities for climate change adaptation and mitigation objectives](#) was published in the Official Journal on 9 December 2021 and is applicable since January 2022.
- A **second DA for the remaining four environmental objectives** will be published by the end of 2022, based on proposals of the [EC Technical Working Group published in March 2022](#)

The EU Taxonomy – Solid waste activities deemed “environmentally sustainable”

- Sustainable activities contributing to the climate related objectives cf. [First Taxonomy Delegated Act](#) adopted in June 2021 (follow links to [EU Taxonomy Compass](#) for activity descriptions and specific TSC):

Substantial contribution to Climate Change Mitigation and Adaptation	5.5 Collection and transport of non-hazardous waste in source segregated fractions
	5.7 Anaerobic digestion of bio-waste
	5.8 Composting of bio-waste
	5.9 Material recovery from non-hazardous waste
	5.10 Landfill gas capture and utilisation

- Sustainable activities contributing to the other 4 env. objectives cf. [proposal of EC’s Technical WG](#), March 2022

Substantial contribution to the Circular Economy	Collection and transport of non-hazardous and hazardous waste as a means for material recovery
	Recovery of bio-waste by anaerobic digestion and/or composting
	Treatment of hazardous waste (for material recovery)
	Depollution and dismantling of end-of-life products
	Sorting and material recovery of non-hazardous waste
Substantial contribution to Pollution Prevention and Control	Collection and transport of hazardous waste
	Treatment of hazardous waste (for pollution prevention and control)
	Remediation of legally non-conforming landfills and abandoned or illegal waste dumps

EIB support to circular cities and projects

Knowledge sharing

The EIB CE guide
Access to finance study

Circular city guidance

The 15 circular steps for cities
The Circular City Funding Guide

Circular city advisory

Circular City Centre (C3)
Circular Economy TA facility (CETAF)

The EIB supports
circular cities and
projects

Lending - also to smaller
and riskier projects

Blending - combining
loans with grants or
guarantees

Advisory - financial and
technical: Advisory Hub
InnovFin Advisory, JASPERS

EIB CE lending 2017 - 2021

Sector	CE lending 2017-2021 (EUR m)	Share
Industry and services	1,229	41%
Agriculture and bioeconomy	597	20%
Waste management	491	16%
Water management	257	9%
Mobility	134	4%
Urban development	151	5%
Energy	141	5%
Total CE financing	3,000	100%

109 operations in total



European
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The EIB bank

For more **circular** information:

www.eib.org/circular-economy