



Module 2

EU & National Drive

Circular Economy in Construction



24
partners

12
countries

Date of Event

*Author/ **Institute***

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To equip the learner with the relevant knowledge and skills required to list and describe the key policy and legislative drivers for a circular economy relevant to construction workers.





1. Display familiarity with the **key terms and definitions** associated with circular economy
2. Explain the **key principles and drivers** behind the transition to a sustainable circular economy at EU level.
3. Outline the **impact of climate change** and green policies related to the built environment
4. List the **policies** that are relevant at national level for circular economy and green construction
5. Understand how to **keep up-to-date** with changes and amendments to relevant environmental and circular national policies.





Topic 1 – EU Circular Economy Principles

Topic 2 – Green Policies for construction

Topic 3 – National Regulations



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1. EU Circular Economy principles



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Linear Economy



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Climate change, the loss of biodiversity and the depletion of natural resources have provoked an unprecedented global crisis, leading to what some scientists consider to be a new geological era: the Anthropocene.

This situation has been caused, in large part, by the current model of production and consumption, called **“linear economy”**. This economic system, implemented since the first industrial revolution, is based on the pattern of “produce, use and throw away”, under **the assumption that natural resources are inexhaustible**.



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Linear Economy

The linear model is reaching the limit of its capacity and has resulted in significant negative environmental impacts that compromise the habitability of the earth for future generations.

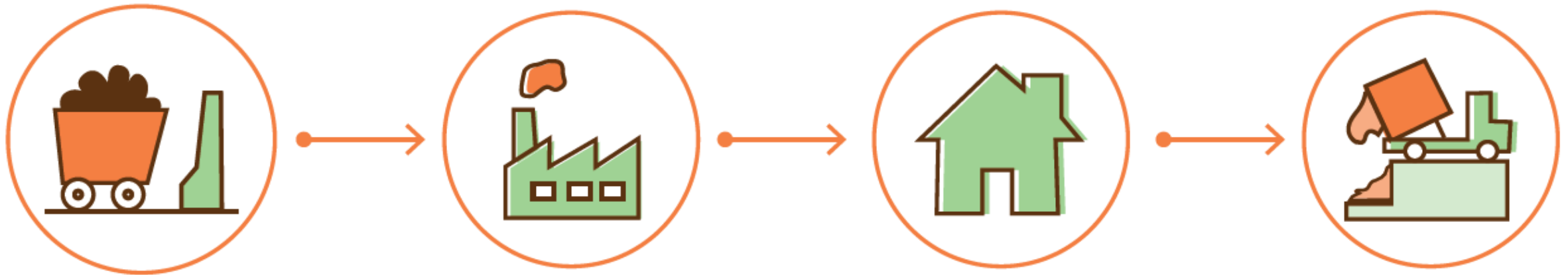


Diagram of linear economy. Source: GBCE. Circular economy in building.2021



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Circular Economy



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- The circular economy, a new model of production and consumption, emerged as a **more sustainable alternative to the linear economy**.
- The objective of the circular economy is to achieve more efficient and resilient production and consumption systems, that **minimize the use of natural resources and preserve the ones they use within continuous cycles, maintaining or improving their value**.
- The circular economy requires a new approach in the following areas:
 - the design of products and services;
 - management and market models;
 - how to convert waste into resources;
 - national regulations;
 - the commitment of citizens to change their consumption habits.



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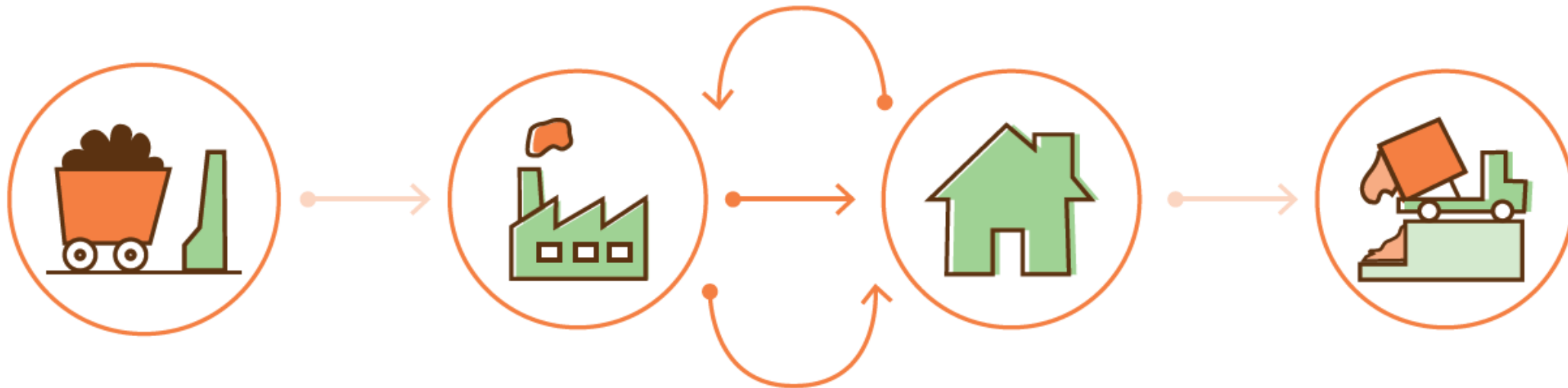


Circular Economy



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The decarbonization of European Economy by 2050 is at the core of the European Green Deal adopted at the end of 2019. The implementation of the circular economy will be key to achieving a decarbonised Europe.



Circular economy scheme. Source: GBCE. Circular economy in building.2021



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Circular Economy

- A circular economy aims to return products, materials and resources into the product cycle at the end of their use, while minimising the generation of waste. **The fewer products we discard, the less materials we extract, the better for our environment.**
- This process starts at the very beginning of a product's lifecycle: **smart product design and production processes can help save resources**, avoid inefficient waste management and create new business opportunities.

*This involves sharing, leasing, **reusing**, **repairing**, **refurbishing** and **recycling** existing materials and products as long as possible*



Image source:
eumonitor.eu



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For a circular economy there are 3 principles of action applicable to the building sector:

1. “Avoiding the generation of waste and pollution by design”.

To achieve this, it is necessary to **reduce** the amount of raw materials, water and energy needed to meet the needs required at any given time, and prioritize the use of renewable energy and secondary raw materials





2. “Keep products and materials in use for as long as possible”.

To achieve this, efficient management of the resources that are used is essential. The aim is to keep material resources in use for as long as possible and to recirculate them in the value chain as many times as possible through **reuse and recycling** ... Energy recovery should always be the last option and landfill is not envisaged in the theoretical framework of CE.





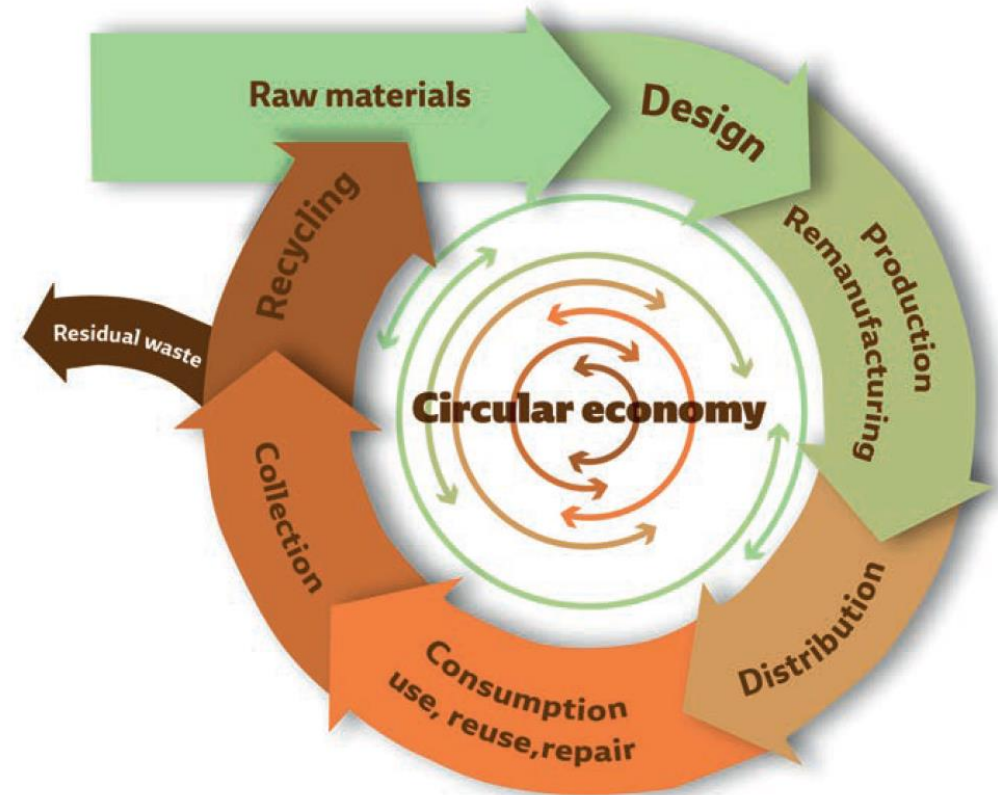
3. “Regenerate natural capital”

*This principle is essential to **guarantee the supply of natural goods and services** on which human survival and well-being depends.*

The circular economy is regenerative, and is inspired by natural cycles, where everything that is born and grows returns to its point of origin, the earth, and is born again, forming a constant dynamic balance. **In nature there is no "waste", all elements have a function, and are reused and transformed to be used in different stages.**



- Not only does CE provide environmental benefits, it also **boosts competitiveness and employment generation**, with the creation of new business opportunities and innovation in products and services.
- Implementing digitalization and new technologies is key to achieve circularity.



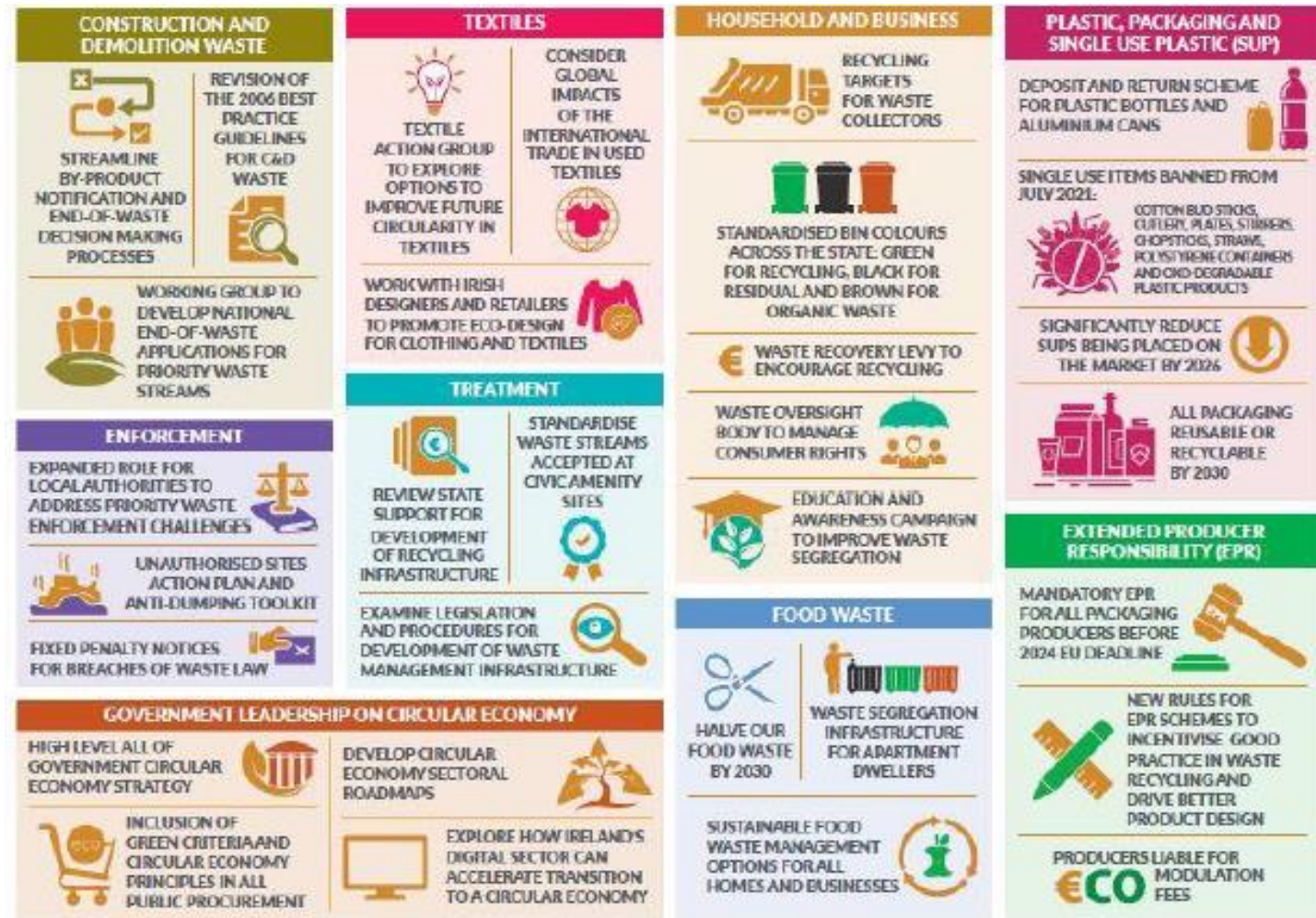
Circular economy scheme. Source: Adapted from European Commission. COM (2014) 398 final

Waste and recycling



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Today, the global
economy is only
8.6% circular



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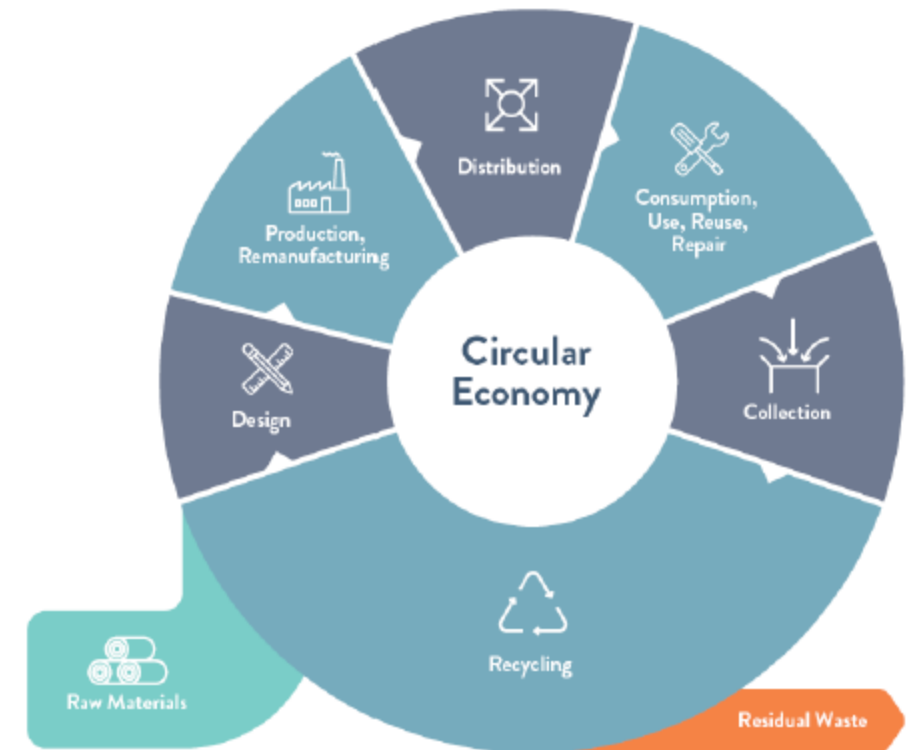
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Impacts

- Raw material extraction and material processing is responsible for 90% of biodiversity loss and water stress.
- As part of Green Deal, a **new EU circular economy strategy** was published in March 2020, which aims to:

*Make **sustainable** products, services and business models **the norm** and transform consumption patterns so that no waste is produced in the first place.*



Learn more!



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Currently, the Earth's annual demand for resources due to anthropogenic (human) activities exceeds its regenerative capacity. In 2019, humanity consumed an amount of natural resources equivalent to 1.6 Planets.

In the following web page you can consult data of the ecological footprint in your country per person.

➤ You can find more information about the theories on which the circular economy is based on the following website:

➤ In this website you will find 8 videos that explain the circular economy.

➤ In this link you will find the film "closing the loop", with comments from world experts, as well as innovative cases of circular economy.



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2. Green Policies for construction



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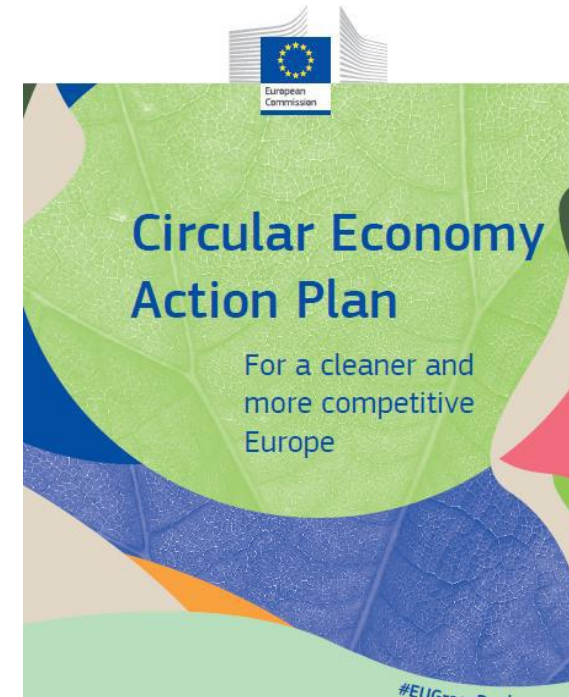


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The Green Deal is a roadmap for achieving a sustainable, carbon-neutral, competitive and resource-efficient economy. Its objectives are:

- ✓ reduce net **greenhouse gas emissions to zero** by 2050,
- ✓ Disconnecting idea of economic growth from resource consumption by **promoting the circular economy**,
- ✓ improve the **quality of life** of Europeans,
- ✓ **restore biodiversity** and reduce pollution.



New Action Plan for the Circular Economy

- An initiative of the 'Green Deal' presented in March 2020
- Aims to modernise the European economy through a **green and digital transformation**
- The Plan proposes measures to achieve:
 1. That the products marketed in the European Union are **sustainable**
 2. That consumers receive information on the **durability** and repairability of the products they purchase
 3. **Avoiding the production of waste**, and converting the waste produced into secondary raw materials.



Action Plan for the Circular Economy: Construction

- **The construction sector is one of the most resource-intensive** sectors and has high potential for circularity
- For the construction sector, the plan proposes a **strategy** to achieve a sustainable built environment based on the **principles of circularity**
- It proposes:
 1. Introduce requirements on the content of secondary materials for certain products, considering their **safety and functionality**.
 2. To **increase the durability, adaptability** of buildings following principles of circularity in their design
 3. Integrate **life cycle assessment** into public procurement using the Level(s) tool.
 4. Consider setting **carbon reduction targets**
 5. Review the targets set in EU legislation for CDW, for the **recovery of materials**
 6. Rehabilitate abandoned or contaminated sites and promote **the safe, sustainable and circular use of excavated soils**.



Renovation Wave

- Published in October 2020, it is another initiative of the ‘Green Deal’ directly focused on buildings

What is it?

- An action plan which aims to double the annual rate of energy **renovation of the built environment by 2030**, to promote in-depth energy renovations, while making buildings healthier, greener, more accessible and resilient. Its goals are:

- (a) *‘combating fuel poverty and improving the least efficient buildings’;*
- (b) *‘the renovation of public buildings, such as administrative, educational and health centres’;*
- (c) *‘decarbonisation of heating and cooling systems’.*





3. National Regulations



Circular Economy in Ireland

- On the broader measure of circularity, **Ireland currently lags behind** its EU peers.
- In 2019, Ireland's circular material use rate (the share of material recovered and fed back into the economy - thus saving extraction of primary raw materials - in overall material use) was the second worst in the EU according to Eurostat figures.
- Ireland's rate was **1.6%, compared to an EU average of 11.9%**. The best performing EU Member State, the Netherlands, achieved a rate of 28.5%.
- Countries which have been most successful in moving towards circularity appear to benefit from having **overarching national circular economy policies**



Circular Economy in Ireland

- The new **Whole of Government Circular Economy Strategy** 2022-2023 provides a national policy framework for Ireland's transition to a circular economy.
- In terms of national policy, **the 2020 Waste Action Plan for a Circular Economy** (WAPCE), sets the direction for waste planning and management in Ireland up to 2025.

Much of the specific context for circular economy activity in Ireland derives from EU policy and legislation. EU strategies to re-align Europe's economy towards a more circular model are central to the **European Green Deal**.



Ireland: Waste Action Plan for a Circular Economy 2020-2025



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- Introduces a range of **specific actions and targets** to achieve transition to circular economy
- Specific targets **for construction & demolition waste**:
 - Revision of the 2006 Best Practice Guidelines for C&D waste
 - Streamline by-product notification and end-of-waste decision making processes
 - Working group to develop national end-of-waste applications for priority waste streams



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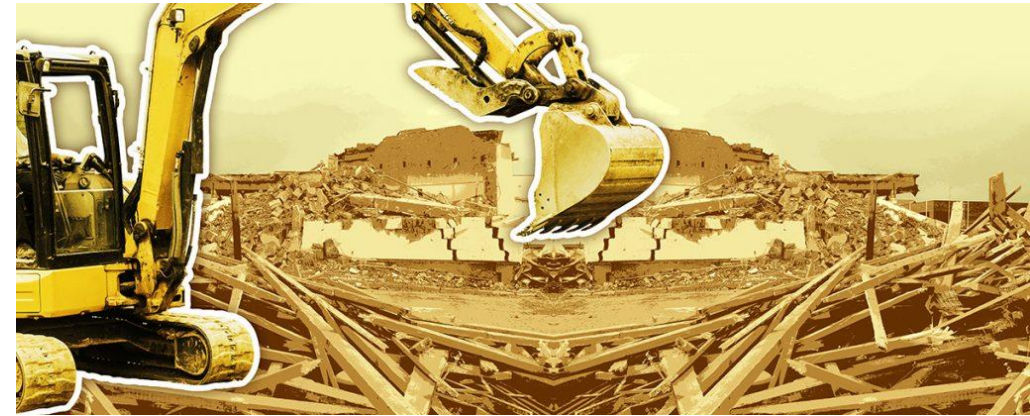
Construction and Demolition Waste

- Construction and demolition (C&D) waste is waste from any building works, demolition and development (including transport infrastructure).
- In 2017, almost 5 million tonnes of C&D waste were collected by authorised waste collectors.
- Excavated soil and stone is the largest element of construction and demolition waste at approximately 80%
- The remainder includes concrete, brick, tiles, metal, glass, wood, plastic and metal.



Construction and Demolition Waste

- C&D waste is the largest waste stream in the EU representing approximately one third of all waste produced.
- Management of C&D waste therefore poses a major challenge to both the construction and waste industries.
- However, improvements in C&D waste management practices can also offer many opportunities in terms of reduced environmental and financial costs to the industry and to society.



LEARN MORE



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There is a need to plan for C&D waste management at the earliest possible stage in a construction project, ideally at concept stage.

The **EPA National Waste Prevention Programme** has gathered a list of resources for waste prevention and best practice on C&D waste on the [EPA website](#).

- [European Green Deal](#)
- [EU Circular Economy Action Plan](#)
- [EU Renovation Wave](#)
- [Ireland: Whole of Government Circular Economy Strategy 2022 – 2023](#)
- [Ireland: Waste Action Plan for a circular Economy](#)



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