



CIRCULAR ECONOMY  
APPROACHES IN  
SOLID WASTE  
MANAGEMENT



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# REGIONAL WORKSHOPS ON CIRCULAR ECONOMY APPROACHES WITH FOCUS ON CONSTRUCTION SECTOR

INTRODUCTION TO MEASURES FOR CDW MANAGEMENT AT ITS END OF LIFE

# Objectives, barriers and enabling conditions

Objective – to recover high-quality (pure) material fractions for recycling or reuse

Policy options:

- Landfill restrictions
- Enforcement measure. Recovery targets
- End-of-waste - legislation and standards regarding recycled materials
- **Measures to increase recycled content in construction products**
- **Selective deconstruction, pre-demolition auditing, deconstruction reporting**

Driving factors:

- **Economic factors** - materials with a higher value, for which treatment costs are lower, but selective demolition or source separation are more expensive, labor-intensive and more time-consuming
- **Legal requirements** for mandatory separation, removal of hazardous materials, occupational hazards legislation and safety requirements



# Landfill restrictions

**Objective** – for favoring recycling, developing a market for recycled CDW materials by making landfilling difficult and undesirable

## Landfill tax

- **Tax structure on the basis of waste types:** haz./non-haz; inert/ other (UK) or further breakdown (demolition waste - the lowest rate per ton; excavated soil; non-inert excavated soil (medium rate); non-hazardous waste; other (hazardous) waste
- **Structure on the basis of landfill technology** – the rate is lower for landfills fulfilling high standards (e.g. bottom sealing layer, drainage system, etc.); Esp. if there are landfills that cannot be ceased. More difficult to control.
- **Tax rate** – if it is too high it is equal to a ban esp. for CDW (large quantities). Inelastic. Illegal dumping, "waste tourism", "sham recovery" - low standard backfilling

**Landfill ban** - on recyclables, suitable for incineration, untreated mixed W, inert CDW (diverted for backfilling in Malta)

**Gate fees** – ensure to cover all costs including financial guarantee

# Enforcement measures

## Site waste management plan

- Integration with the procedures for **approving construction activities** or obtaining an **environmental permit** prior to construction permitting
- Contains: estimations how materials will be managed, targets achieved
- Control: contracts; reporting; invoices

## Mandatory deposit

- Deposit prior to demolishing buildings (all regions of Spain) or before obtaining a building permit (Basque), reimbursed after proving CDW was lawfully managed
- the amount of the deposit is based on the cost of the CDW management - 120%
- in cases of sustainable building - 60% (analysis is required)
- Information system for tracking the path of CDW - each shipment of CDW is assigned “waste stream code” and stored in the register



# End-of-waste

## End-of-waste status – promotes recycling

- reduces the administrative work required to obtain permits, reporting
- more attractive by increasing confidence in its quality
- CPR applies - creates a level playing field, thus increasing legal certainty

## Quality requirements and quality-assurance process

- List of waste types authorized in recycled construction materials (concrete, bricks, asphalt, excav. soil, slag, street sweepings, etc.)
- recycler has to inspect input material (visual, documents) to assess its suitability
- recycler must ensure product meets **quality requirements** (quality classes, parameters and limit values depending on application) by applying the following **quality-assurance process**
  - **Declaration of Conformity** check for the 1<sup>st</sup> batch (1 week production) - 10 random samples from the batch to form representative sample, testing by an external authorized specialist, test results determine the quality class, documenting - assessment report, at least once per year
  - **Factory production control** – to verify declared quality class during the production, the same procedure (every batch), not done by external specialist but testing is by accredited laboratories; if the batch does not comply - waste

# End-of-waste

## End-of-waste status of the quality-assured recycled construction materials

- End-of-waste status could be given only if the produced recycled material:
  - meets the highest quality requirements (class UA), **and**
  - is handed over for use as aggregates for unbound and for hydraulically or bituminously bound applications
- Recycled construction materials from another quality class could obtain End-of-waste status if for the respective product (including designation of the product) there are :
  - EU end-of-waste criteria such as scrap metals – EU Regulation 333/2011, declaration of conformity, keep records, evidence, quality management system
  - national end-of-waste criteria such as recycled wood that may only be used in plants for the production of wood-based materials – Ordinance, standard,. The waste owner has to establish quality management system with external quality assurance, create a certificate of assessment and to send it for approval to the Ministry of Environment. Waste owner reports annually quantities, recipients, results of external control and is subject to inspections