Market analysis of recycled sands and aggregates in North-West Europe: drivers and barriers

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Secondary Raw Materials for Concrete Precast Products
(in progress: 2017 → 2020)

Objective
Increase the use of CDW as secondary raw materials for cement and concrete precast products
Recycling construction and demolition waste accounts for 8% of the total generated aggregates in the EU

2.7 billion tonnes of aggregates generated in the EU28+EFTA in 2016 (UEPG, 2018)

Natural origin

47.4% crushed rock  40.3% sand & gravel

Recycled origin

8% recycled (220 million tonnes)

Concrete

Mixed

Construction & demolition wastes (CDW)
The market of recycled aggregates may be influenced by many parameters

**Focused parameters in NWE**

- Availability of RA and recycling plants
- Challenge with natural aggregates
- Regulation on CDW landfilling
- Standards and specifications
- Quality certification of RA
- Financial incentives
- Public perception
- Green public procurement

**Difficulties:**

- some national statistics are not available or not directly comparable
- market of RA is influenced by local and regional contexts
Recycling and re-use of CDW is developed in NWE


“A minimum of 70% of the generated non-hazardous CDW (excl. excavated soils and stones) must be re-used or recycled by 2020”.

The objective is already reached by the investigated NWE countries.

In 2016, NWE countries generated almost 60% of the recycled aggregates produced by the EU-28 (UEPG, 2018)

In terms of production:

![Bar chart showing recycling and re-use of CDW in NWE countries.](chart.png)
Challenge with primary raw materials

In 2016, NWE countries generated almost **40%** of the natural sands & aggregates produced by the EU-28 (UEPG, 2018)

Percentage of recycled sands and aggregates compared to the total production
Favourable market context for recycled aggregates in the Netherlands

Demand vs supply for sands and aggregates:

Demand higher than supply
Imports represent 20% of the demand in sands and aggregates

Lack for coarse aggregates
70% (10-11 Mt) are imported every year
Regional disparities in Belgium

Production of **natural** sands & aggregates
70-75 million tonnes/year

- Flanders: 20%
- Wallonia: 80%

Consumption of sands & aggregates
100 million tonnes/year

- Wallonia: 23%
- Brussels: 11%
- Flanders: 66%

Production of **recycled** sands & aggregates
16.5 million tonnes/yr from ~350 recycling plants

Production Recycling plants

- Wallonia: 21% Wallonia: 29%
- Flanders: 79% Brussels: 3%

Mean distance from quarries

- Flanders
- Brussels
- Wallonia
Inert waste landfilling: availability and legislation

- **NL** and **BE**: ban for inert waste landfilling
- **DE** and **LU**: < 5% (high landfilling taxes, many recycling plants available)
- **FR**: ~15-20% (more inert landfills than fixed recycling facilities)

The cost for 1 tonne of aggregates may double every 30 km by road

![Graph showing density of inert waste facilities](image)

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Conclusions

Based on a **quantitative analysis:**

Investigated **NWE countries possess an extensive network of CDW treatment facilities** despite the abundance of primary raw materials.

Countries where **the market of recycled sands and aggregates seems the most suitable are the Netherlands and Belgium** (mainly Flanders) characterized by:

- lack of available local natural rocky materials
- favourable legislation
- developed network of recycling facilities
Thank you for your attention

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