

19. Construction and demolition waste

Key points:

- Construction and demolition is the biggest source of waste, contributing to around a third of all waste in the EU (in mass).
- Most construction and demolition waste can be easily recovered through recycling or backfilling.
- Data on construction and demolition waste are currently not sufficiently robust; this is particularly the case for recovery operations due to a different understanding and accounting of backfilling among Member States.

Overview and context

Construction and demolition is the single biggest source of waste in mass in Europe: it accounted for 33.5 % of all waste in the EU in 2014 (871 million tonnes)²¹³. Construction and demolition waste (CDW) consists of numerous materials, including concrete, bricks, gypsum, wood, glass, metals, plastic, solvents and excavated soil, many of which can be recycled²¹⁴. The most (economically and environmentally) valuable fractions (e.g. metals, plastics, glass) represent only a small percentage of all CDW²¹⁵. High re-use or recovery rates of such materials could lead to significant sustainability gains, but these would not be reflected in the overall recovery statistics, which are currently dominated by the largest material fractions (in mass). Moreover, the increase of re-use in the construction and demolition sector could have positive effects with regards to both job creation and environmental impacts²¹⁶.

CDW arises from activities such as the construction, renovation, total or partial demolition of buildings and civil infrastructure, and road construction and maintenance.

Important factors for feeding these materials back into the economy are:

- the proper design of building materials and constructions;
- the selective demolition of constructions;
- the sorting of recoverable and hazardous fractions from demolition waste; and
- quality assurance schemes to build up trust in recycled materials²¹⁷.

CDW is subject to a mandatory recovery target (70 % by 2020) under the Waste Framework Directive²¹⁸. Recovery of CDW can



213 SWD(2018) 17 final. Commission Staff Working Document. 'Measuring progress toward circular economy in the European Union — Key indicators for a monitoring framework'.
214 DG Environment, Resource-efficient use of mixed wastes, http://ec.europa.eu/environment/waste/studies/mixed_waste.htm.
215 SWD(2018) 17 final. Commission Staff Working Document. 'Measuring progress toward circular economy in the European Union — Key indicators for a monitoring framework'.
216 Rreuse, 2017, 'Austrian social enterprises develop a business model for re-use of building materials', <http://www.rreuse.org/austrian-social-enterprises-develop-a-business-model-for-re-use-of-building-materials/>.

217 SWD(2018) 17 final. Commission Staff Working Document. 'Measuring progress toward circular economy in the European Union — Key indicators for a monitoring framework'.
218 Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (OJ L 312, 22.11.2008, p. 3).

also include backfilling operations. 'Backfilling' means any recovery operation where suitable non-hazardous waste is used for purposes of reclamation in excavated areas or for engineering purposes in landscaping. Waste used for backfilling must substitute non-waste materials, be suitable for the aforementioned purposes,

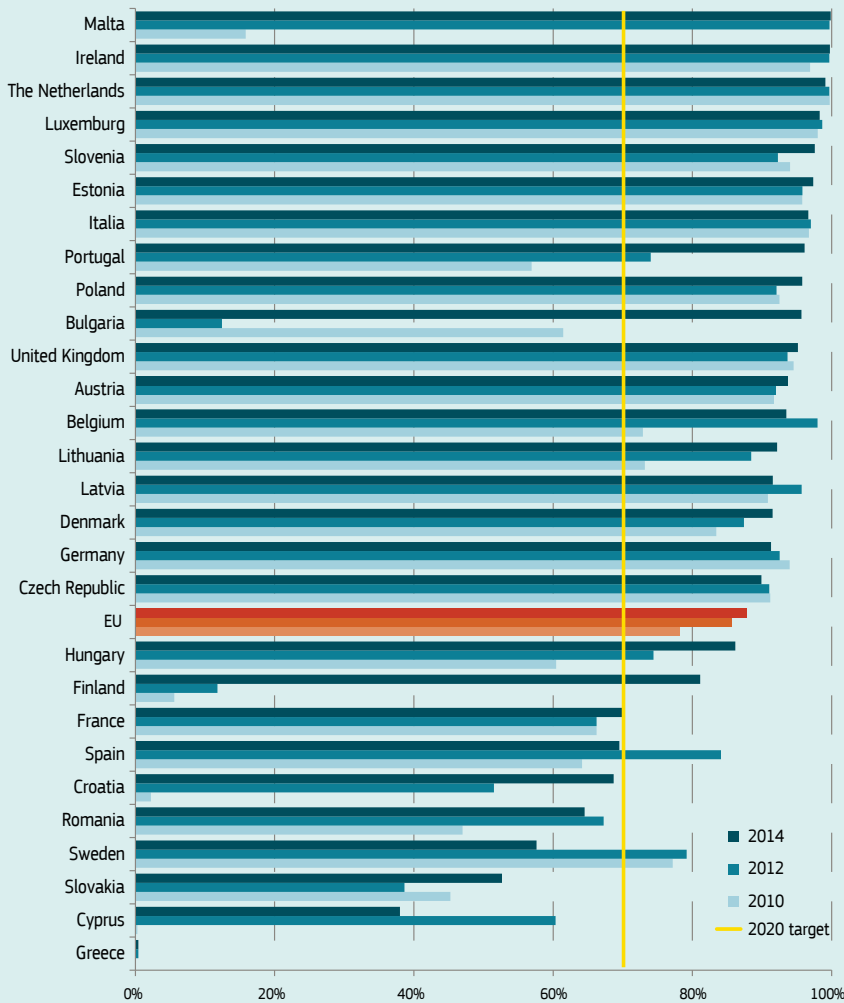
and be limited to the amount strictly necessary to achieve those purposes²¹⁹.

The search for suitable data...

Data on 'mineral waste from construction and demolition' are currently available in Eurostat and collected every two years in accordance with Regulation (EC) No 2150/2002 on waste statistics²²⁰.

A CDW 'recovery rate' can be expressed as the volume of CDW prepared for re-use, recycled or subject to material recovery (including backfilling operations) as a ratio of all CDW collected and treated. Figure 19.1 illustrates the EU's CDW 'recovery rate' for different years. This indicator has been also included as a key indicator in the circular economy monitoring framework.

Figure 19.1: Recovery rate of construction and demolition waste in the EU²²¹.



219 Directive of the European Parliament and of the Council amending Directive 2008/98/EC on Waste, PE 11 2018 REV 2, 30.05.02017.

220 Regulation (EC) No 2150/2002 of the European Parliament and of the Council of 25 November 2002 on waste statistics (OJ L 332, 9.12.2002, p. 1),

<http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:02002R2150-20101018&qid=1512989524851&from=EN>.

See Eurostat — treatment of waste by waste category, hazardousness and waste operations, http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=env_wastrt&lang=en.

221 Adapted from SWD(2018) 17 final. Commission Staff Working Document. 'Measuring progress toward circular economy in the European Union — Key indicators for a monitoring framework'.

Backfilling ranks lower than recycling in the 'waste hierarchy' in the Waste Framework Directive. Currently, due to differences of interpretation, the dividing line between backfilling and disposal varies among Member States²²². There are also diverging views on whether all backfilling operations constitute 'genuine' recovery or whether it may rather be necessary to narrow the scope of backfilling to ensure that it contributes to resource efficiency and does not pose a threat to the environment²²³. Overall, quality of reporting is clearly an issue. In particular, there is a high degree of uncertainty about waste-generation data and the amounts of CDW that are backfilled, whereas data on CDW treated in (for example, recycling) plants are believed to be more reliable. The lack of robust and comparable data on CDW makes it difficult to gauge actual recovery rates in the EU.

On 25 May 2016, the Commission organised a workshop to address, *inter alia*, the issue of data and statistics on CDW²²⁴. Some of the main recommendations that emerged as regards improving data collection and quality were that:

Member States using surveys to collect data on CDW should update the surveys on a yearly basis and ensure that they cover a representative sample of industries. Extrapolation from CDW data is often necessary where they do not cover all waste production and treatment deposits.

For Member States using administrative sources to collect data on CDW, the key points are to avoid both undercoverage (and the subsequent underestimation of CDW amounts) and double counting (and subsequent overestimation of CDW amounts).

For all data collection methodologies, consistency and comparability among Member States could be improved by:

- using a common definition of CDW;
- reporting backfilling data separately (it may be necessary to clarify the definition of 'backfilling', e.g. by specifying operations to be included or excluded);
- collaboration between national bodies to achieve the wide range of tasks entailed in collecting CDW data;
- statistical control (quality checks) and correction of the data; and
- including imported waste in the treatment table and excluding exported waste.

Separate reporting of backfilling is possible and already the practice in European statistics, but it has not been applied consistently by all Member States. In future, a comprehensive reporting of data on backfilling is required under the newly amended Waste Framework Directive and this should make possible to introduce some revised indicators (as compared with that in Figure 19.1), which show recycling and backfilling separately or show data on the recycling rate only (excluding backfilling). In addition, the Commission will publish a guidance document on backfilling in 2019, which should contribute to harmonise the practices.

Although mineral waste is the predominant fraction of CDW in most EU countries (it accounts for 20 % to 80 % of the total mass), disaggregated figures on non-mineral waste (such as metals, asphalt, wood, gypsum, etc.) are also needed, especially due to their economic and environmental importance. In addition, revised indicators and targets could include further detail on higher-quality recycling (i.e. processes that feed quality used secondary raw materials back into construction).

Better data on CDW, broken down by material, will be needed, *inter alia*, to assess whether it is appropriate to make additional preparations for re-use and recycling targets for CDW and its material-specific fractions by the end of 2024, as required by the amendment to the Waste Framework Directive²²⁵.

²²² e.g. in cases where construction materials are reprocessed to comply with certain specifications and are used in building or infrastructure foundation.

²²³ Bio by Deloitte, background paper for workshop on 'Improving management of construction and demolition waste'.

²²⁴ Bio by Deloitte, minutes of workshop on 'Improving management of construction and demolition waste' (July 2016): Resource-efficient use of mixed wastes;

²²⁵ <http://ec.europa.eu/environment/waste/studies/pdf/construction/Minutes.pdf>

²²⁵ <http://www.europarl.europa.eu/sides/getDoc.do?pubRef=-//EP//TEXT+TA+P8-TA-2018-0114+0+DOC+XML+VO//EN>.