



CONSTRUCTION & DEMOLITION WASTE Policy do's & don'ts

The European Commission has embarked on several initiatives to analyse and improve construction and demolition waste (C&DW) recycling rates across Europe. According to the Commission, construction and demolition waste accounts for a third of the EU's total waste production per year, amounting to some 450-500 million tonnes¹. Given that at least a third of this C&DW is concrete, The Concrete Initiative is working actively on this topic. **This paper provides some "do's & don'ts" for successful policy on C&DW.** These guidelines are relevant for C&DW in general, not just for concrete.



The concrete case

For all types of C&DW, recycling rates are low in many Member States due to a lack of efficient sorting and collecting of C&DW, combined with an insufficient demand for, and confidence in, recycled materials. These aspects are two sides of the same coin. Often, the infrastructure is not in place to allow for quality recycled materials to reach a potential client in a cost-efficient manner.

Fortunately for concrete, recycling is not technically difficult. Concrete can be 100% recycled after demolition. Recycled aggregates from demolition concrete are traditionally used in unbound applications such as for road base, and they are also used as aggregates for new concrete.

Concrete can be 100% recycled – in new concrete or in other applications.

Given these different potential uses for concrete C&DW, and since virgin aggregates will still need to be extracted in order to fulfil the total demand², it should be carefully considered whether the best use of recycled aggregates is in new concrete or in unbound applications. Therefore, in policy, both "open-loop" and "closed-loop" recycling should be valid options. Neither option is the clear winner from an environmental perspective in all cases.

Likewise, policy should avoid requirements on minimum recycled content. Given the variable supply of materials coming from C&DW, it is doubtful that this measure would be beneficial or even feasible. One would not wish to see a situation whereby recycled aggregates travel long distances (translating into an increase in transport-related CO₂ emissions), even when virgin aggregates are available nearby.

In conclusion, it is impossible to generalise about how best to use recycled concrete aggregates. One thing is clear: better processes for demolition, collection and sorting of C&DW will help with providing a consistent supply of good quality recycled aggregates.



DO

Tackle “prevention” and reduction/minimisation” of waste before “recycling”

It is recognised today that a hierarchy exists in the treatment of waste and in addressing the circular economy. Recycling is one solution, but due to its energy consumption and other impacts, it is not the preferred one. Prevention and minimisation should be favoured: maintenance, repair and reuse of structures should be preferred options. In this case, the durability and flexibility of buildings for re-use or “re-purposing” is a key factor.

DO

Encourage all recycling that results in a reduced use of virgin materials & energy, be it “open loop” or “closed loop”

Open loop recycling, i.e. recycling into an application different to the original one, has environmental benefits (less need for virgin materials, often lower transport CO₂ etc.), which in some cases can be even greater than the benefits of closed loop recycling. A case by case assessment can determine the most environmentally favourable (and economically feasible) application. Words such as “downcycling”, which portray open loop recycling in a negative light, should be avoided, as should “upcycling”, which suggests a superiority of application which may not in fact apply in all regions and circumstances.

DO

Phase out landfilling of construction and demolition waste

Diverting C&DW material from landfill is a way to keep a plentiful supply of this material in the economy and encourage the market to find solutions to its use. A relevant transition period should however be established, as the infrastructure to deal with the diverted waste will need time to develop.

DO

Apply performance-based policy for the use of recycled material from C&DW

Material from C&DW can be of variable quality, just as primary material can be. A performance-based approach to determine the appropriate use of such materials allows both secondary and primary materials to be judged on the same basis and used in the most appropriate application. A performance-based approach allows one to set the goal (e.g. performance of the final product) without setting restrictive requirements on how to achieve it (e.g. x % recycled content).



DO

Reward the application of sustainable behaviour in public procurement and elsewhere

Rewarding the carrying out of an assessment of the feasibility to source and use secondary (and primary) materials according to local availability and environmental benefit, is preferable to setting specific requirements which may not be achievable in all regions.

DO

Address waste from building renovation explicitly in policy and account for its impact in the total impact of renovation

Waste from renovation is not "demolition" waste and therefore it may be missed in policy looking only at demolition. Yet, this source of waste may be significant from an environmental point of view, both because of the materials concerned, as well as the potential volumes given Europe's ambitious targets for renovation in the coming years.

Don't set simple targets on recycled content

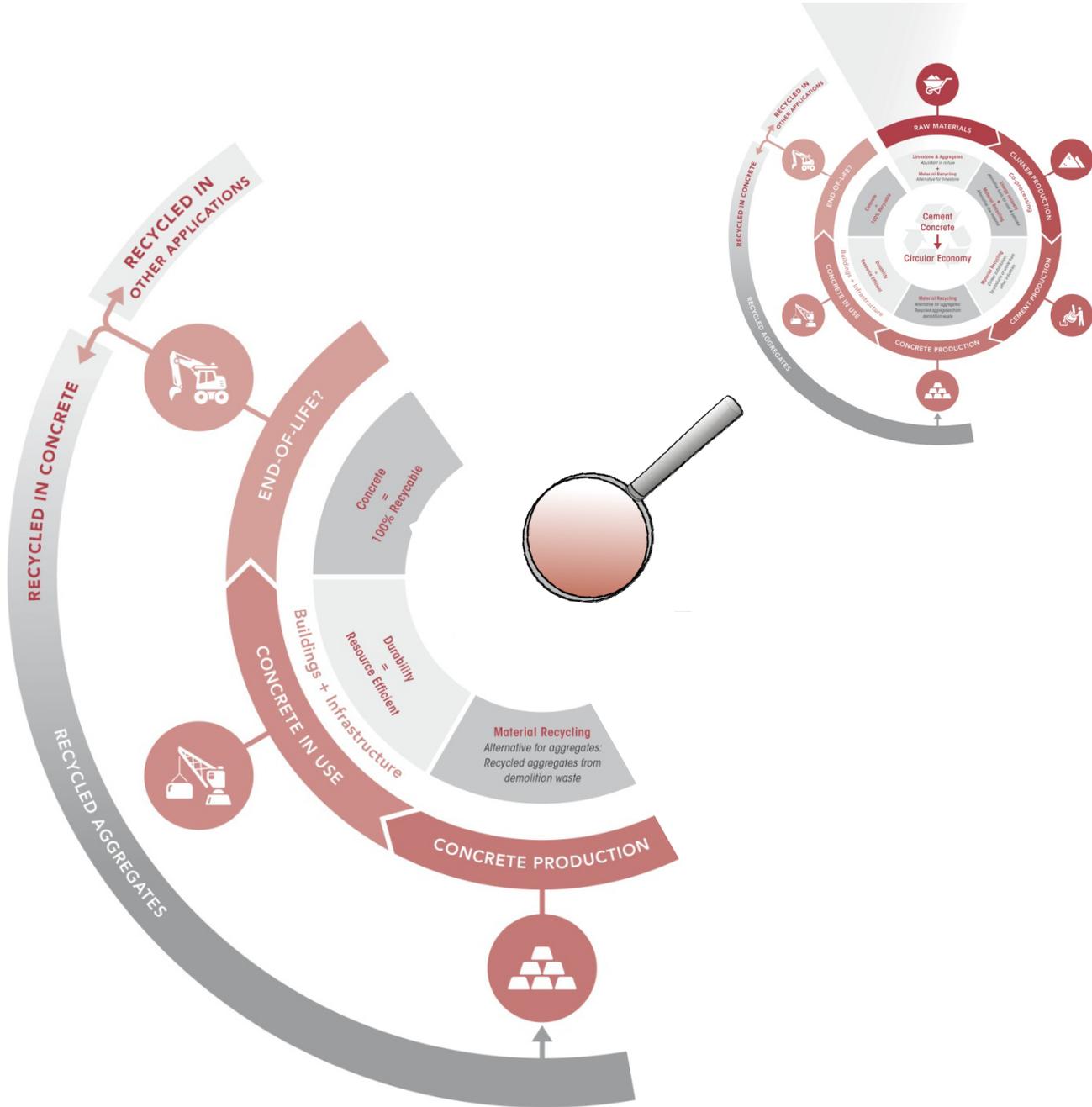
DON'T

It is not always a given that a recycled material has the lowest environmental impact. For example, if secondary material is not available close to the construction site, then the environmental impact of transport could be greater than if locally available virgin material were to be used. Proximity is a key factor.

Don't discriminate against primary materials by way of blanket taxes or levies.

DON'T

As mentioned above, locally available virgin material can have a lower environmental impact than recycled material. Taxation of virgin aggregates has proven to be ineffective in increasing the use of recycled aggregates in the UK. Such taxes are not an effective way to combat the perception of secondary material as being inferior, and therefore are ineffective in creating demand for secondary materials.



¹http://ec.europa.eu/environment/waste/pdf/2011_CDW_Report.pdf

² If all concrete C&D waste in Europe were recycled, this could supply 10% of the total demand for aggregates for all applications. If all concrete C&D waste were recycled to supply aggregates just for use in new concrete, this would fulfil 32 % of the total demand. (Rough figures based on 2008 production)