

ecomatters

Reusability and a new tool for reusable product design

According to the waste management hierarchy, reuse is the third option, right after prevention and reduced use.

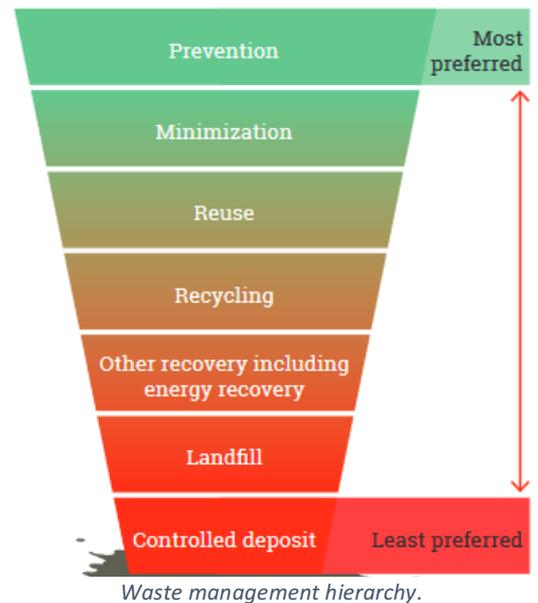
Recycling is positioned further down the ladder, why then is it more commonly seen in the regulations and guidelines?

Design for reuse

When researching the reuse of products, it can be observed that recyclability receives more attention than circularly minded reuse strategies. While recyclability is an important aspect to keep in mind during product design since recycling recovers the value of materials at the end-of-life stage, reuse however ensures the maximum potential of materials beyond just using them in their first life cycle. By designing re-usable products, we also save the energy and resources that would be spent for producing single-use items, their disposal and end-of-life processing.

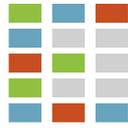
The eventual re-usability of a product is determined in an early phase of design. At that moment a designer has to make a lot of choices which has implication for the products' use and disposal. For a product to be fit for reuse, it has to be reliable, durable, often lightweight and able to preserve quality, therefore the choice of material is crucial. Considering modular design provides further advantages by making repair, refurbishment, and, in the end, also recycling easier. Some applications require special qualities for product protection, for example watertight containers for liquids. To nudge the customer into reusing the product, it needs to be convenient to use and to have good visual appearance to incentivise customers' loyalty to the product.

Principles of recyclability should still be included in design for reuse, since the product will eventually reach the end-of-life and its treatment should result in material recovery for further use. Therefore, the product designers should avoid using hazardous and harmful substances and multiple materials.



Source: Single-use plastics. A Roadmap for Sustainability. UN Environment Programme, 2018





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Obstacles for implementing multi-use products and packaging

So far, we came across several obstacles for the implementation of reusable solutions on a large scale. First of all, there is a gap in regulations. Clear targets for reusable products are missing in legislation and without the push from governments, it is difficult to accelerate the transition from single-use to a circular economy. The financial support to boost the reuse business models is underdeveloped, making it difficult for the entrepreneurs to deliver on the targeted transition. Reuse systems are quite complex to implement successfully as this requires the involvement of parties from the entire value chain of the product to come together. The customers' engagement and involvement are important elements of reuse schemes and consumers need to have an incentive to participate.

Multi-lifecycle tool

As part of the EIT Climate-KIC founded eCircular project, Ecomatters is working on developing a tool for identifying design strategies for multi-lifecycle use of products and packaging. The tool will specifically look at reuse approaches as an enabler for companies to design new concepts aimed at replacing single-use plastic products and packaging. To create this tool, we have been conducting desk research and expanding our knowledge with additional insights through reaching out to experts in sustainable product and packaging design, circular design and eco-design; as well as start-up companies developing new propositions around reusability. From the interviews we gathered valuable, first hand insights on how the reusability can be implemented in practice, what the policy implications are and which hurdles entrepreneurs have to overcome.

The tool aims to help entrepreneurs and SMEs to expand their insights and embark on a journey of reusability. We are looking forward to the results. Keep an eye on our website for the latest news regarding the tool: <https://www.ecomatters.nl/>.