CIRCULAR
RECYCLING

How to ensure high-quality recycling in a circular economy

The Danish Society of Engineers, IDA's recommendations for national efforts for the promotion of high-quality recycling in the circular economy.

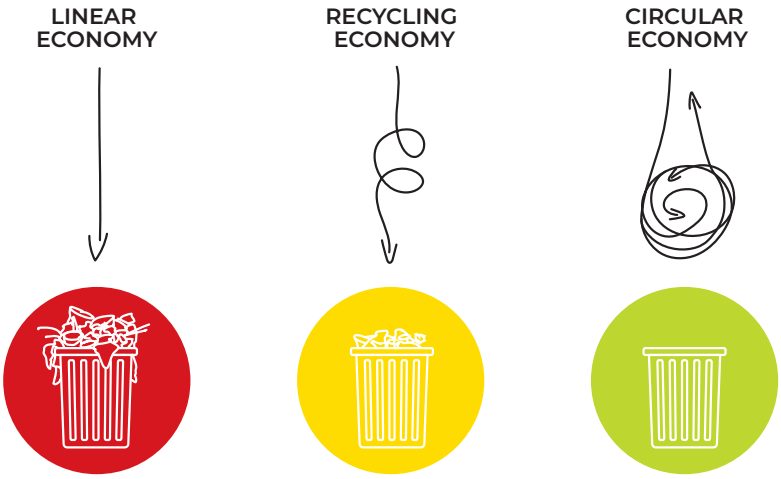
We need to create sustainable material systems using far fewer resources at global scale than today. The answer is more genuine reuse and life-time extension of products; it must also be ensured that waste that cannot be avoided can be kept in a circular loop where it substitutes virgin raw materials again and again. To create a circular loop where all extracted materials can be used several times, we need to have more focus on the fact that there are many qualities of recycling - and some are better than others. We call the optimum form of recycling for high-quality recycling. In IDA's opinion the decisive thing is that we promote high-quality recycling in Denmark; this is recycling where focus is on keeping materials as close to their original state as possible. IDA therefore proposes, among others, that a recycling hierarchy is established with a differentiation between four forms of recycling.

In IDA, we encourage the creation of Denmark into a green development laboratory within production and consumption. We believe that in Denmark we must contribute to a global green transition by creating solutions that can be used all over the world. Technology and know-how developed in Denmark will also be beneficial to Danish systems exports and job creation. With the right framework conditions in place, the willingness to make national investments, and cooperation between public and private players we can attain the target of establishing a systemic and structural new thinking of recycling, thereby creating the next windmill adventure based on Danish experience.

IDA recommendations:

1. Design for recycling should move from today's niche and voluntary priority to becoming a politically decided requirement and an established norm.
2. A multi-faceted understanding of recycling: some forms of recycling are superior to others in a resource, climate, and environment perspective, thereby having priority.
3. Recycling in the future is measured not only by quantities recycled, but also the quality of the actual recycling.
4. Establishment of a recycling hierarchy - see IDA model in the figure - to support the best possible form of recycling and form the basis for political prioritisation.

Recycling should not just supplement the linear economy as an extra step. Recycling must be part of the circular economy by sending raw materials of high quality back in the loop to replace virgin raw materials of the same quality. The illustration with the three bins is well-known; it shows the difference between the present use-and-discard economy (left-hand side) and the bin in the middle illustrating the recycling economy, by contrast to the bin at the right-hand side showing the circular economy with a long product life, reuse, and high-quality recycling.



Need for Danish strategy for recycling

A national strategy for recycling must specifically support a development towards higher quality of recycled materials on the domestic market; it must also contain concrete measures and instruments ensuring high-quality recycling of Danish waste thereby establishing a new Danish stronghold in the green transition. Basically, this strategy must ensure preservation and recirculation of those materials and raw materials that have already been extracted, thereby avoiding the extraction of new materials.

A Danish strategy for recycling must have three overarching, guiding objectives:

1. Reduction of the demand for new resources.
2. Long-term perspective recycling that is not a barrier to subsequent recycling loops.
3. Impacts on climate and environment are in focus, and climate gas reductions are obtained already in the short- and medium-term perspectives.

IDA identifies six areas for effort that should be contained in a Danish strategy, the aims being in 2024:

1. A new, multi-faceted and differentiated approach to recycling based on the understanding that not all recycling is genuinely circular. This understanding is mirrored in every form of recycling of Danish waste.
2. A regulation in Denmark securing a large market demand for reclaimed resources for all product types, thereby supporting that Danish businesses are at the cutting edge at the global level when it comes to the manufacture of products based on recyclates.
3. Research, technological development, and sector partnerships across the value chain along with concrete action plans set out by the political level must ensure that Denmark has access to technology supporting our objectives for high-quality recycling for all fractions. At least one of these technologies - preferably for some of the most challenging fields of recycling such as textiles and electronics - is developed in Denmark.
4. Focus on competences and implementation of a mindset where circularity is the norm in all relevant study programmes. Upskilling, retraining, and refresher training into a circular understanding and consumption have priority.
5. Experience in the use of data as the key to high-quality recycling: Denmark's digital stronghold is exploited, and we are a development laboratory for circular digital solutions. This could be ensured if we become a test country for the EU Digital Product Passport.
6. Implementation in Denmark of the world's most ambitious producer responsibility system with extensive focus on circularity.

The political vision should encompass the following:

Waste collected for recycling in Denmark is subjected to high-quality recycling. Opting for high-quality recycling must support Denmark to become a genuine development laboratory for high-quality recycling no later than in 2024.

Per capita waste generation must be far lower than today. Waste that cannot be avoided must be recycled in a much more optimal way. IDA wishes to promote sustainable production, reduced pressure on the resources of the Earth, and a genuine support of circular economy.

Read more on www.ida.dk