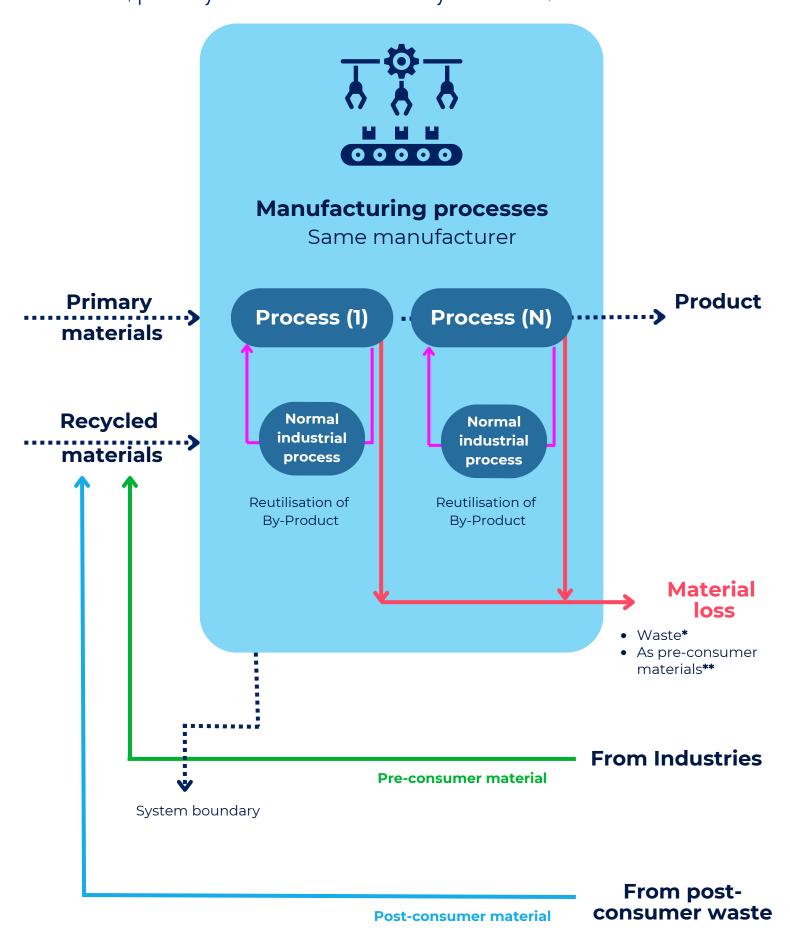
3. Annex

Figure 1: Material streams in production (Recycled, pre-consumer, post-consumer, primary and Reutilisation of By-Products)



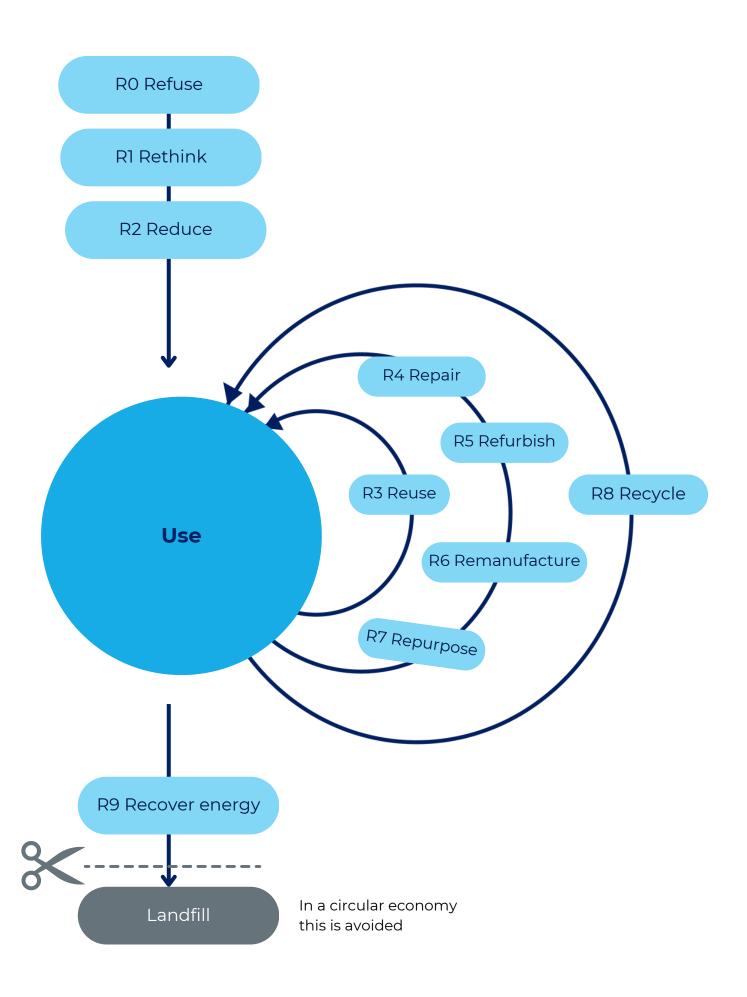
^{*}With no commercial value, sent to be landfilled or for energy recovery via incineration.

^{**} With commercial value, sold to/used by another manufacturer to be used as pre-consumer materials

Figure 2: 9R Strategy Framework definitions

Circular economy	Strategies		
Pinceasing circularity Property	Smarter product use and manufacture	R0 Refuse	Make product redundant by abandoning its function or by offering the same function with a radically different product
		R1 Rethink	Make product use more intensive (e.g. by sharing product)
		R2 Reduce	Increase efficiency in product manufacture or use by consuming fewer natural resources and materials
	Extend lifespan of product and its parts	R3 Reuse	Reuse by another consumer of discarded product which is still in good condition and fulfils its original function
		R4 Repair	Repair and maintenance of defective product so it can be used with its original function
		R5 Refurbish	Restore an old product and bring it up to date
		R6 Remanufacture	Use parts of discarded product in a new product with the same function
		R7 Repurpose	Use discarded product or its parts in a new product with a different function
	Useful application of materials	R8 Recycle	Process materials to obtain the same (high grade) or lower (low grade quality
		R9 Recover	Incineration of material with energy recovery
economy			

Figure 3: R-Ladder in product lifecycle



Source: Fostering Education for Circular Economy through Life Cycle Thinking, June 2021, DOI:10.5772/intechopen.98606, Licenses BY 3.0