NOKIA

Circular products inserted into Life Cycle Assessment

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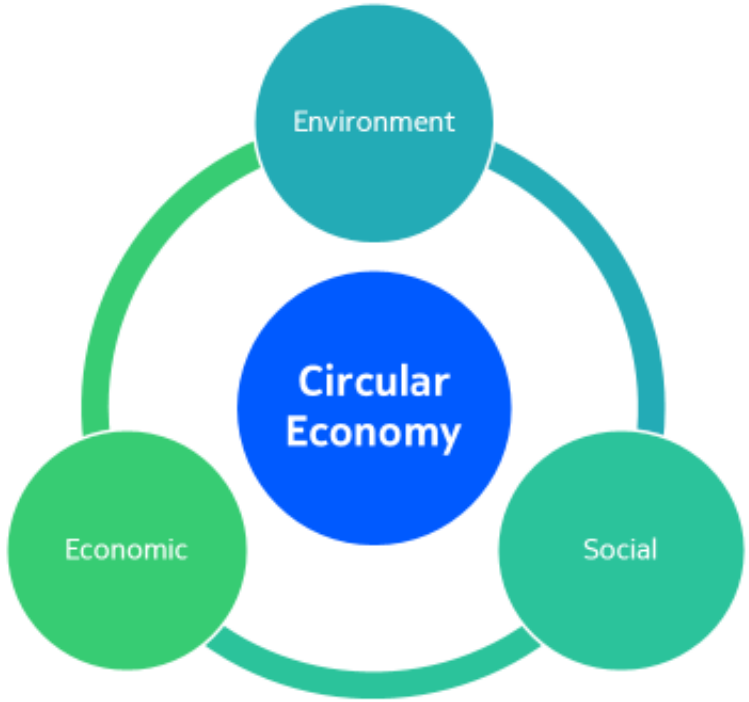
From linear to circular economy

Megatrend status

300%

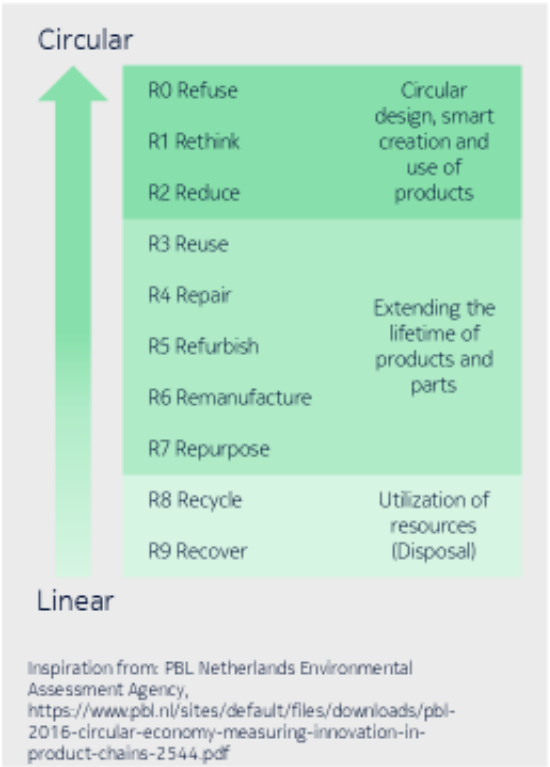
Increase in volume of discussions, debates and articles over the past 5 years

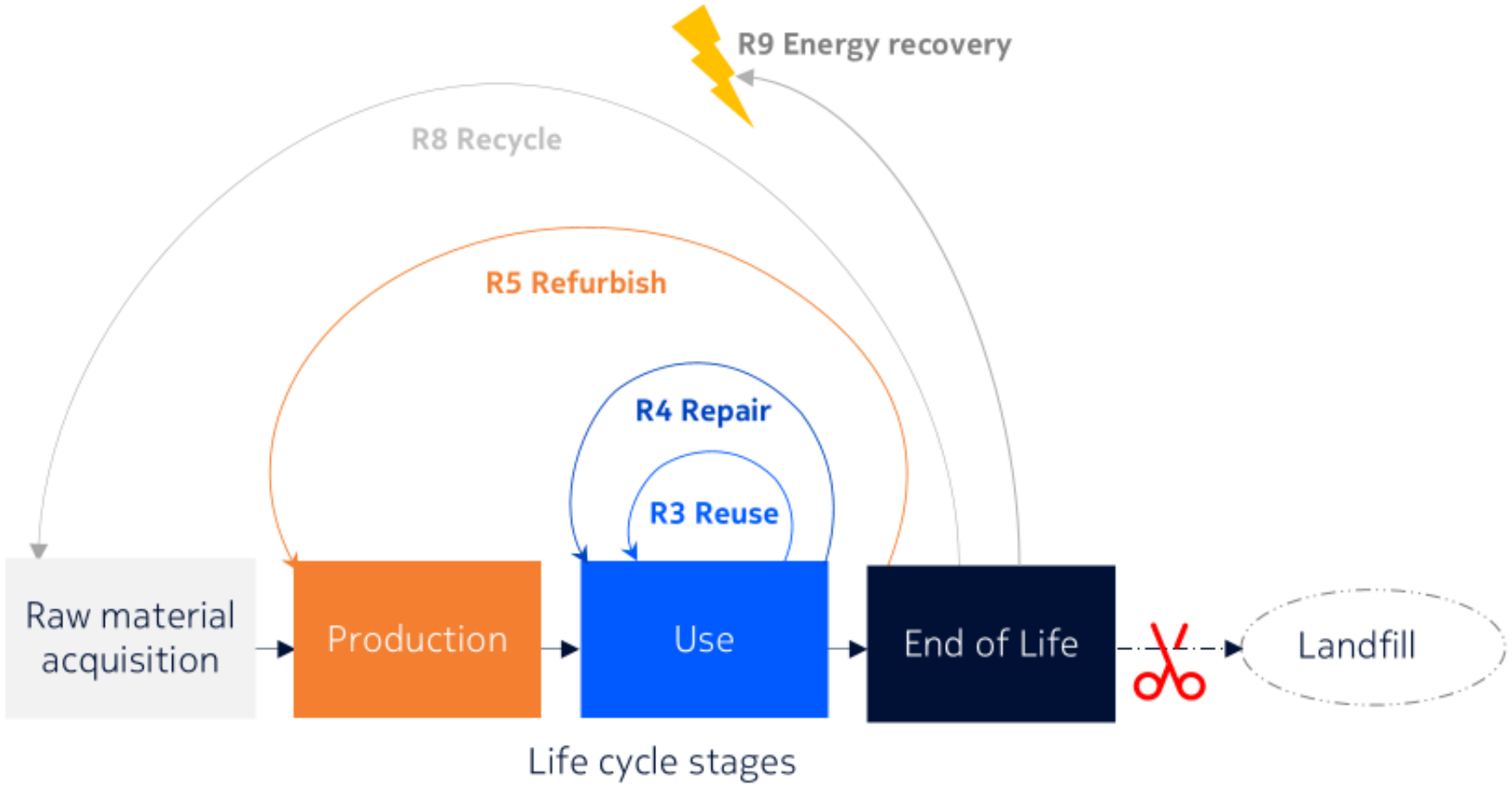
Source: The Circularity Gap Report 2024



Circular economy contains losses

Keep the product at its highest utility level





Nokia is bringing circular economy into actions

ICT sector having an impact

Reduction in embodied emissions in circular products

units refurbished

metric tons of e-waste recycled

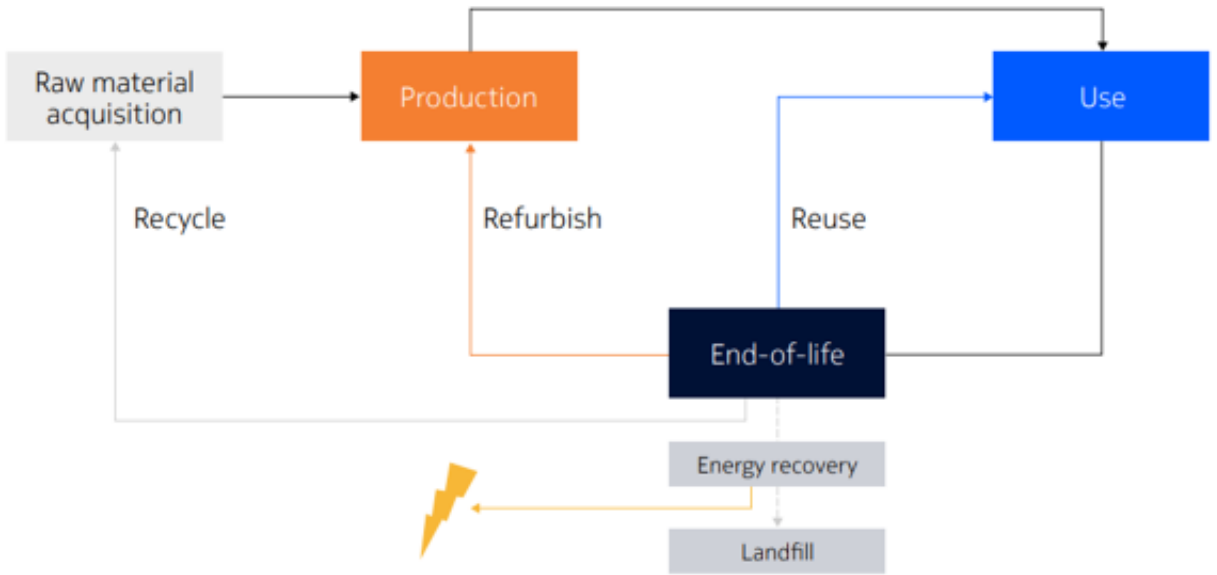
Key data highlights from Nokia for year 2023

Life Cycle Assessment evolution in ITU-T L.1410

"Methodology for environmental life cycle assessments of information and communication technology goods, networks and services"

L.1410: 2014

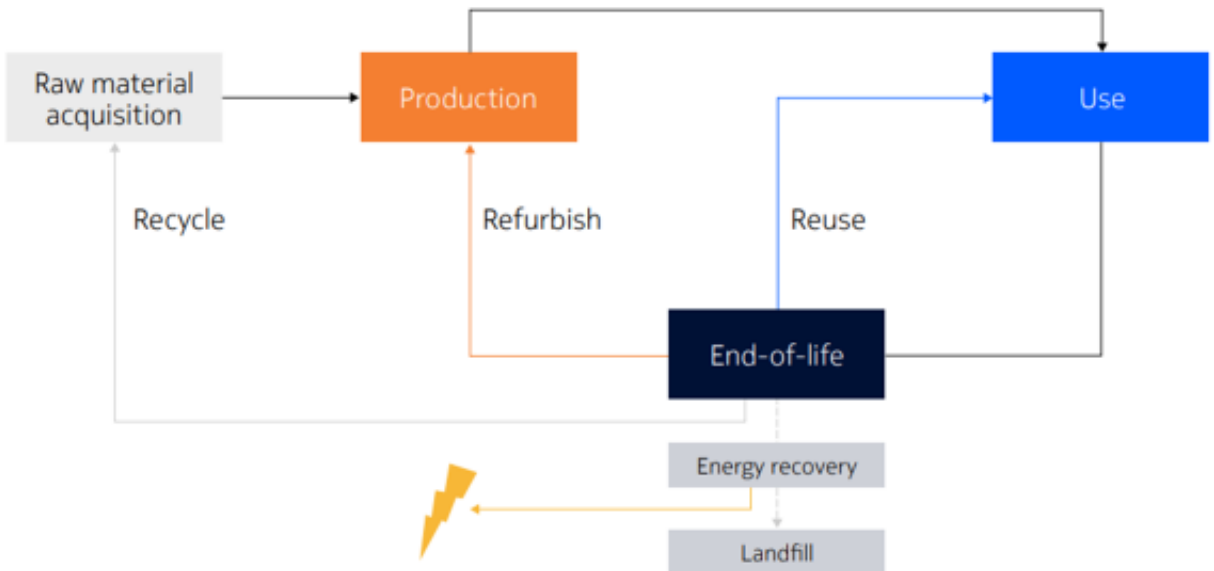
L.1410: 2024



ITU-T Recommendation L.1410, https://www.itu.int/ITU-T/recommendations/rec.aspx?rec=16010
Figures from Nokia White paper: https://nokia.ly/CE

Moving for circular LCA in ITU-T L.1410

L.1410: 2024



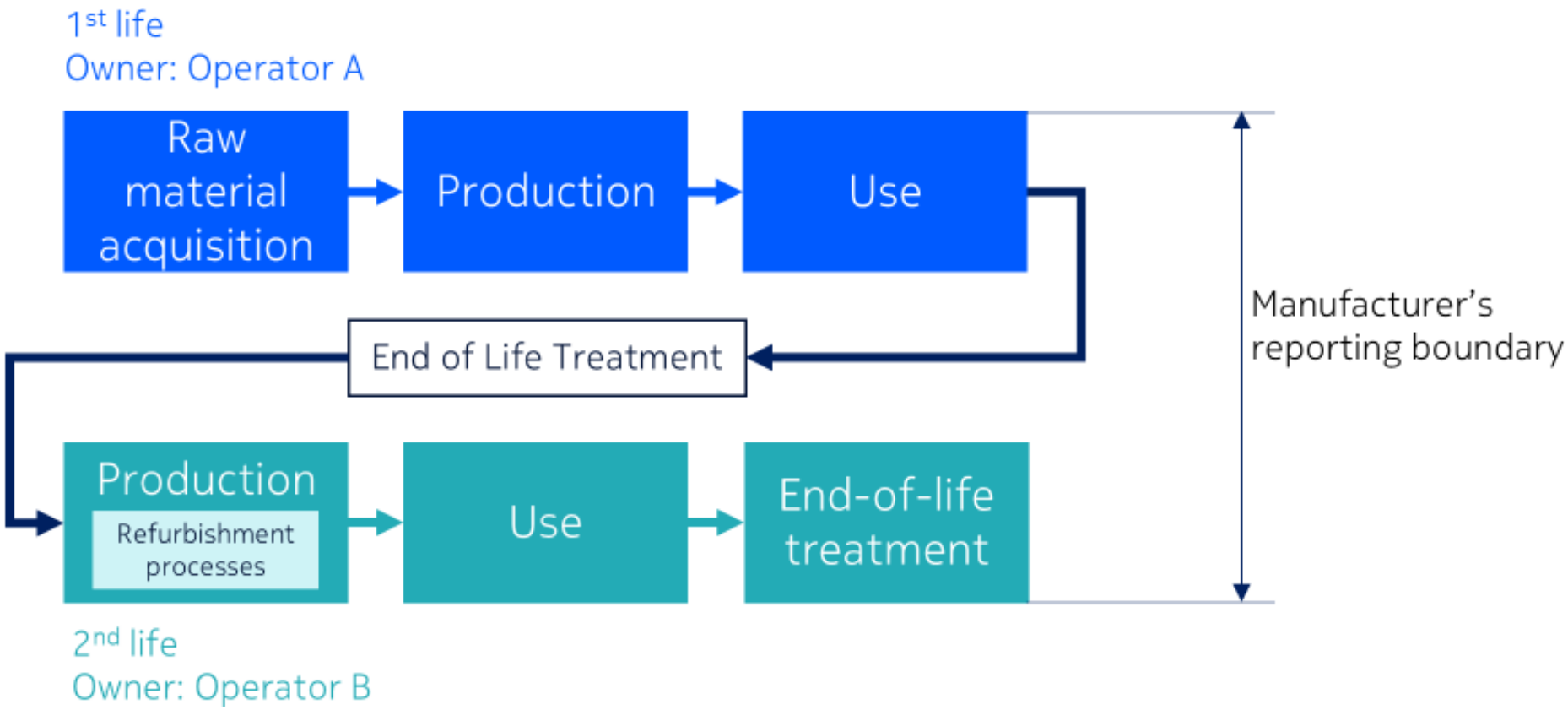
L.1410
2024 version

Adding support for circularity, including enhanced guidance on

- reuse
- refurbishment
- circular processes
- multiple life cycles

Clear guidance for mapping circular life cycle stages

Example case



ITU-T L.1410 supports circularity

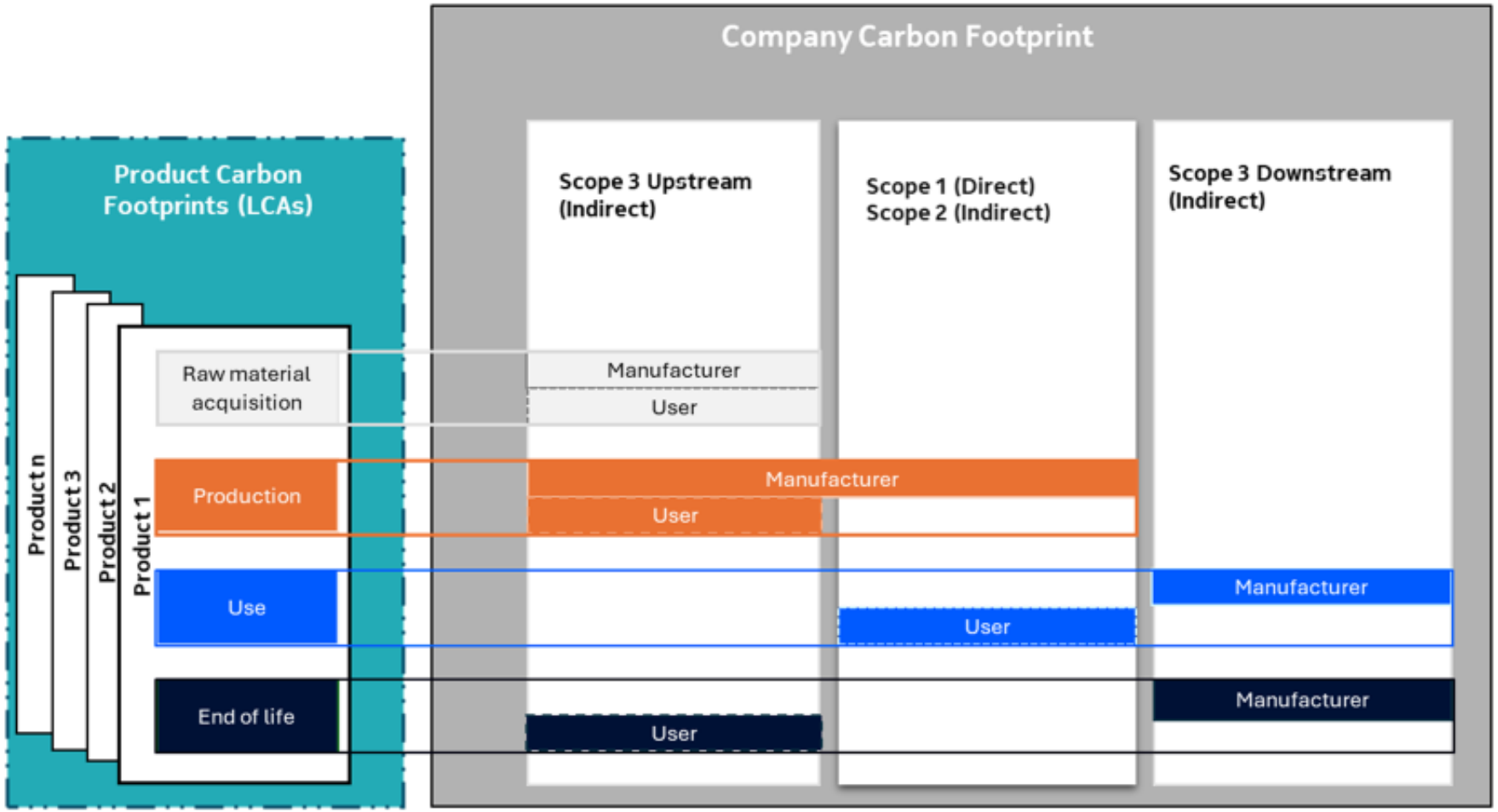
Comparison of LCA standards

Aspects	GHGP Product Standard	ITU-T L.1410/ETSI 203 199	EU PEF
Year of publication	2011	2012, updated in 2014. Revised in 2024	2013, revised in 2021
Scope	Global scope for all products.	Global scope specific for ICT products	Regional scope EU for all products
Built based on	ISO 14040, ISO 14044 and PAS 2050, also ILCD Handbook	ISO 14040, ISO 14044 and ILCD Handbook	ISO 14040, ISO14044, ILCD Handbook, PAS 2050, Draft ISO14067, ISO 14025, ISO 14020, GHGP, BPX 30-323-0 (ADEME)
LCA stages	1. Material acquisition and pre-processing 2. Production 3. Distribution and storage 4. Use 5. End of life	1. Goods raw material acquisition 2. Production 3. Use 4. Goods end of life treatment Note: Distribution is a repeating generic process	1. Raw material acquisition and pre-processing 2. Manufacturing 3. Distribution 4. Use 5. End of life
Impact categories	1 category, Climate change (GHG emissions)	16 midpoint impact categories	16 midpoint impact categories
Comparative assessments	Not supported	Supported	Supported
EoLT allocation and circularity	Material recycling only: Closed loop (0/100) or recycled content method (100/0).	Supports extended operating lifetime. 2024 revision includes circular processes. For material recycling: 50/50, 0/100, 100/0 methods.	Material recycling only: CFF model. 100/0 and 0/100 methods not possible.

Full comparison table in Nokia White Paper - Beyond the numbers: A deeper dive into the interplay of company footprint, product footprint and circular products, https://nokia.ly/CE

Entering circular products into company reporting

Product footprint mapping with company footprint



Take away

Embrace circular economy at highest utility level

ITU LCA standard revised with circular processes

Circular practices into other standards as needed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