

FREE CHECKLIST · LCA METHOD

ecoinvent system model decision checklist

The system model you pick in ecoinvent is a goal-and-scope decision, not a software default. Use this checklist before you link a single background dataset.

1. The four ecoinvent system models

SYSTEM MODEL	WHAT IT ASSUMES	TYPICAL USE
Allocation, cut-off by classification	Waste is the producer's burden; recyclable materials enter the next life burden-free	Attributional studies and PCFs under rules that prescribe the cut-off (recycled content) approach
Allocation, cut-off, EN15804	Cut-off logic with the cut-off point moved to the end-of-waste state; includes EPD inventory indicators	EPDs under EN 15804+A2
Allocation at the point of substitution (APOS)	Waste treatment burdens are shared with the users of the valuable products it creates	Attributional studies where shared responsibility for recycling and recovery fits the goal
Substitution, consequential, long-term	Marginal suppliers meet extra demand; by-products earn credits for what they displace	Decision support: the effect of a change, a policy or a new technology

2. Five-step selection

Step 1 — Rule first. Is the study governed by a PCR, a standard or a data-exchange rule?

- ☐ EN 15804 EPD → Allocation, cut-off, EN15804
- ☐ PCF under PACT, TfS or Catena-X → cut-off (recycled content) approach
- ☐ PEF → Circular Footprint Formula, as the PEF method sets it
- ☐ No rule applies → go to Step 2

Step 2 — Question second. What is the study for?

- ☐ Accounting, reporting or a product claim → attributional (cut-off or APOS)
- ☐ A decision about a change: new plant, new material, a policy → consequential

Step 3 — Material profile. Flag high sensitivity if the product involves:

- ☐ Recycled or secondary materials
- ☐ By-products or co-products
- ☐ Markets with constrained supply (a material made only as a by-product)
- ☐ Waste treatment with energy or material recovery

Step 4 — Three-model screening. Calculate the key results in cut-off, APOS and consequential.

- ☐ Record the spread for every impact category you report
- ☐ Check whether hotspots and rankings stay the same
- ☐ If the conclusion changes, say so in the interpretation

Step 5 — Declare and defend. State the system model and the reason in the goal and scope.

- ☐ Name the model in the report and in every data table
- ☐ Give the reason: the rule, the study question, or both
- ☐ Report the screening spread where sensitivity is high
- ☐ Never compare results calculated with different system models

WHY IT MATTERS: ONE DATASET, THREE ANSWERS

Market for magnesium, for reuse in titanium sponge production. Same dataset, same impact method, three system models. Results relative to cut-off:

IMPACT CATEGORY	APOS	CONSEQUENTIAL
Climate change	0.91x (lower)	2.31x
Non-renewable energy	0.81x (lower)	1.82x
Eutrophication	2.47x	8.88x
Freshwater ecotoxicity	14.8x	16.0x
Human toxicity	3.55x	30.7x
Terrestrial ecotoxicity	3.27x	34.5x

APOS is lower than cut-off on climate change and higher on toxicity: the ranking flips by category. Results from one dataset illustrate sensitivity; they are not a general rule.

3. Screening worksheet

IMPACT CATEGORY	CUT-OFF	APOS	CONSEQUENTIAL	MAX / MIN	CONCLUSION CHANGES?

4. Report declaration

- ☐ System model named in the goal and scope
- ☐ Reason for the choice stated (rule, study question, or both)
- ☐ Same system model used for every background dataset
- ☐ Screening spread reported where sensitivity is high
- ☐ Comparisons made only between results in the same system model
- ☐ Limitations of the chosen model discussed in the interpretation

NEED A SECOND OPINION?

DEISO reviews system model choices, runs LCA projects and reviews existing studies.

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