



Aalto University
School of Arts, Design
and Architecture

Sustainable design S3

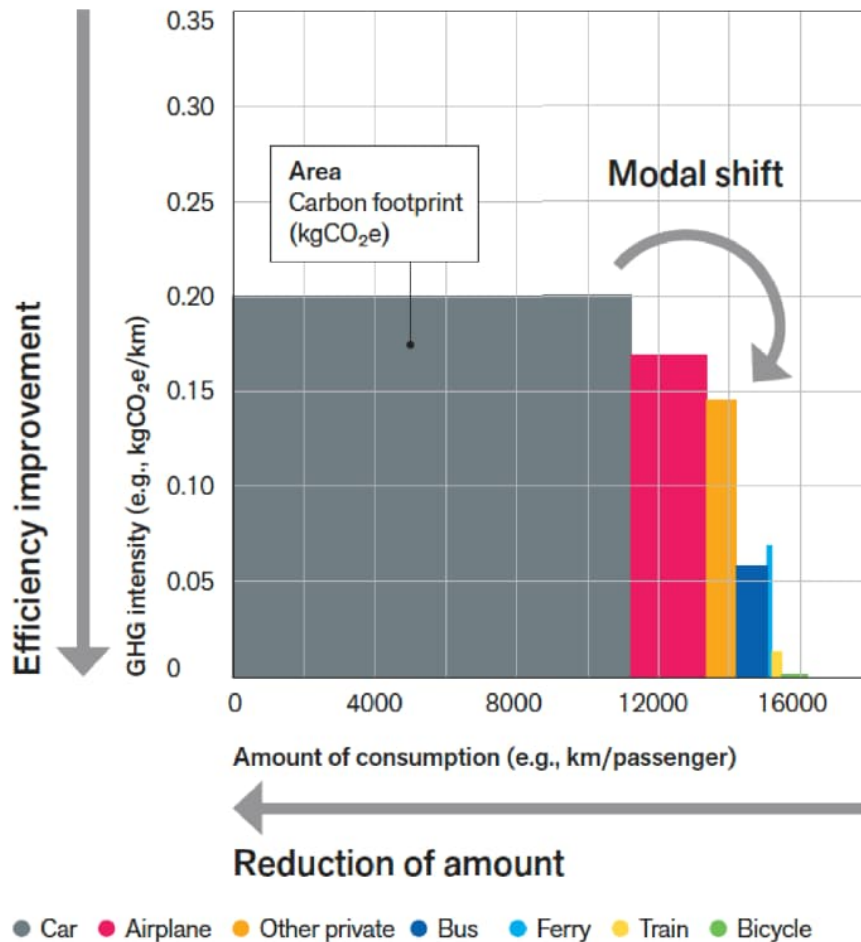
Product labels: Tools to guide product design
and certify performance

Mikko Jalas
26.4.2022

Agenda

- 9.15 - 9.30** **Last session: Multiple levels of design for sustainability**
- 9.30 - 10.30** **Labeling and certification schemes**
break
- 10.45-11.00** **What labels did you choose: place them on the Flinga-grid (link at My Courses Announcements)**
- 11.00-11.30** **Discussion**
- 11.30-11.45** **Next session: How do products/services communicate sustainability**

How we produce



What we produce

How much we produce



<https://www.aalto.fi/en/department-of-design/15-degree-lifestyles>

Business concepts for reduced output

- Extended warranties
- Leasing (service & capital)
- Availability/capacity (pay per time)
- Service (pay per unit)
- (Energy) Performance contracting
- Mobility as Service (flexible set of means to produce contracted outcomes)

A&C (p .333): Compare manufacturing vs maintenance costs



Product labels and certification schemes

Type 1 (e.g. Nordic Swan and EU Ecolabel’): Publicly agreed criteria for superior environmental, life-cycle performance within a product group.

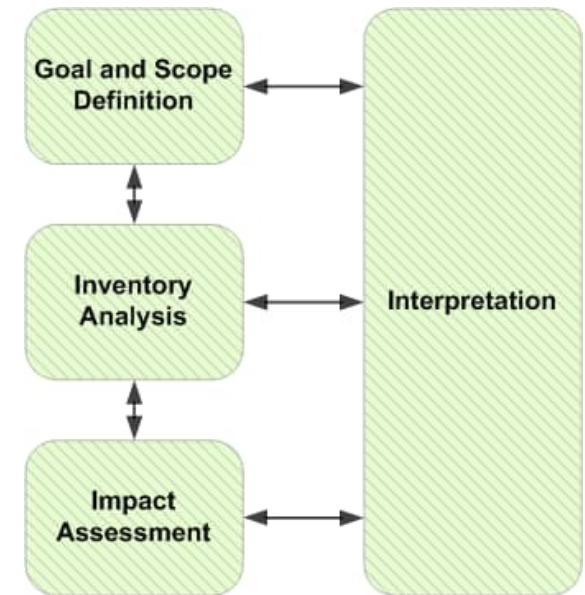
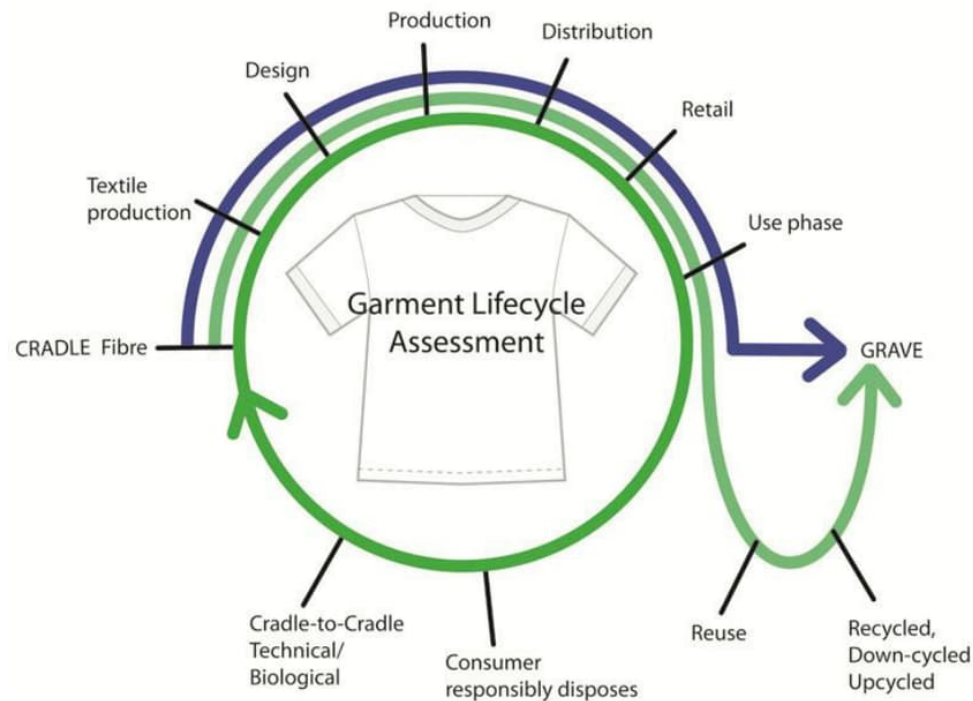
Type 2 (Self-declared claims): Self-declared environmental claims. Must not be misleading)

Type 3 (Environmental product declarations EPD): Quantified, verified information about product life cycle. B2B use mainly.

ISO 14000 standard series on Life Cycle Assessment and product declarations
EU (pending regulation: Product Environmental Footprint (PEF) and Organization Environmental Footprint (OEF)

<http://norden.diva-portal.org/smash/get/diva2:1370715/FULLTEXT01.pdf>

Life Cycle Assessment (ISO14040)



Payne (2011) The Life-cycle of the Fashion Garment and the Role of Australian Mass Market Designers. International Journal of Environmental, Cultural, Economic and Social Sustainability (7). DO 10.18848/1832-2077/CGP/v07i03/54938

EPD: Karat RE AB Ludvig Svensson

www.environdec.com

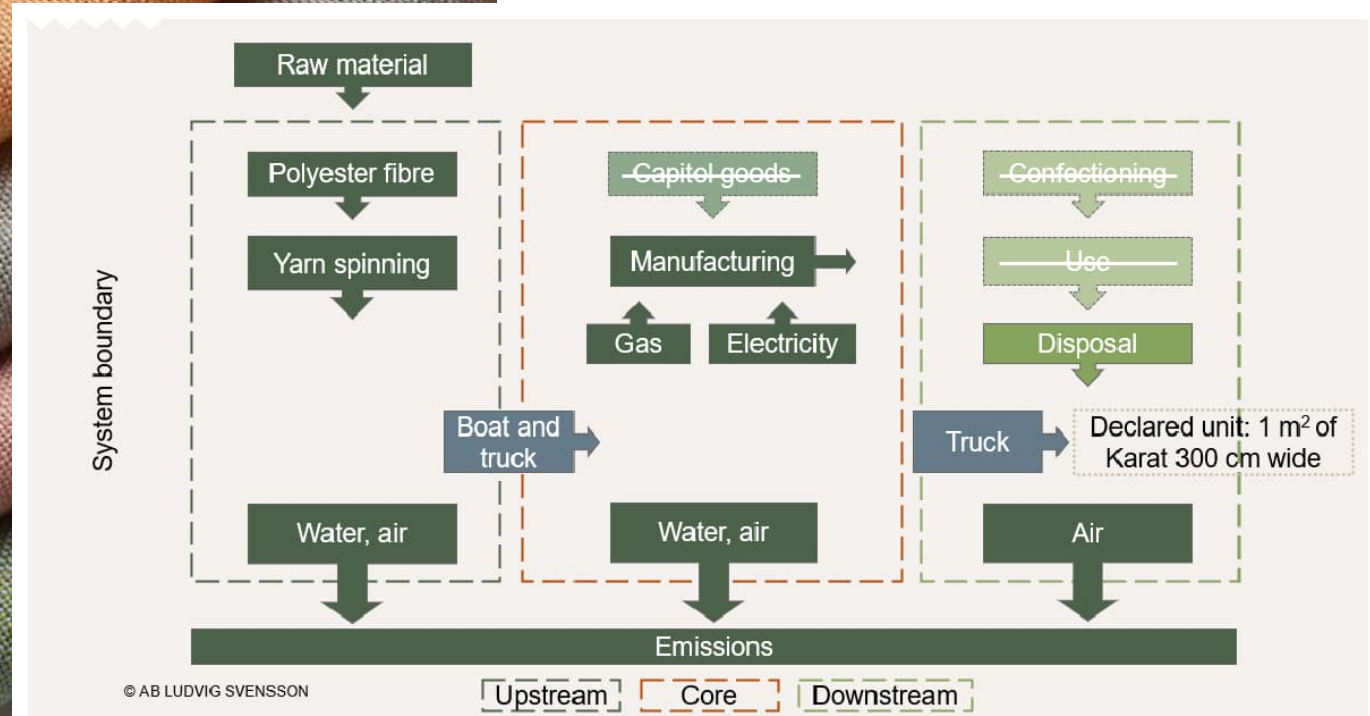
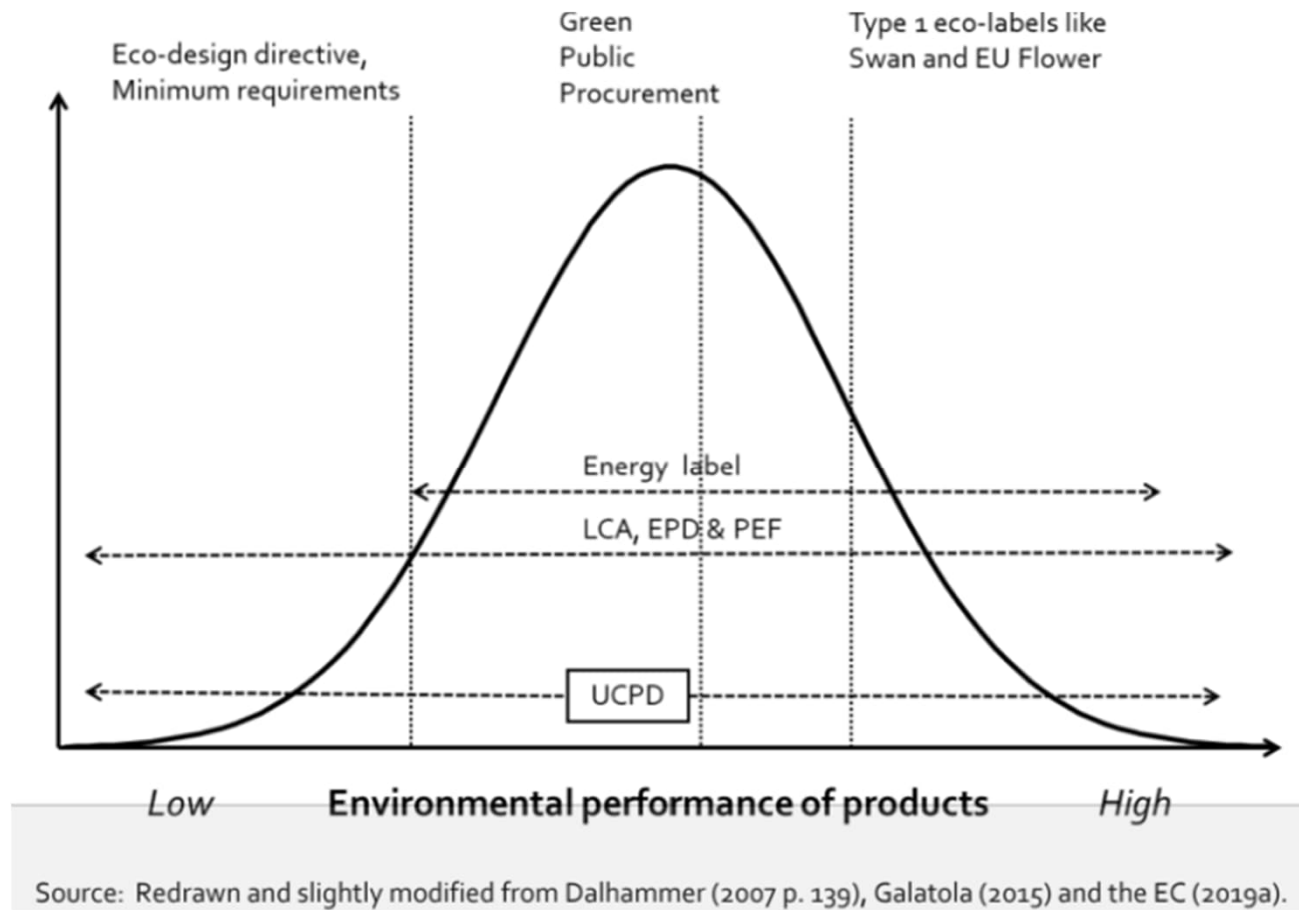


Table 3. Impact categories according to PCR on Karat

PARAMETER		UNIT	Upstream	Core	Downstream	TOTAL
Global warming potential (GWP)	Fossil	kg CO ₂ eq.	1,21E+00	2,47E-01	3,91E-01	1,85E+00
	Biogenic	kg CO ₂ eq.	8,73E-03	3,23E-03	7,37E-06	1,20E-02
	Land use and land transformation	kg CO ₂ eq.	5,00E-04	4,38E-04	5,55E-06	9,44E-04
	TOTAL	kg CO ₂ eq.	1,22E+00	2,51E-01	3,91E-01	1,87E+00
Acidification potential (AP)		kg SO ₂ eq.	4,06E-03	1,67E-03	9,27E-05	5,81E-03
Eutrophication potential (EP)		kg PO ₄ ³⁻ eq.	1,66E-03	5,91E-04	9,30E-05	2,35E-03
Formation potential of tropospheric ozone (POCP)		kg C ₂ H ₄ eq.	2,20E-04	9,26E-05	3,30E-06	3,16E-04
Ozon-depletion potential		kg CFC11 equivalents	1,81E-06	1,38E-07	2,83E-09	1,95E-06
Abiotic depletion potential – Elements		kg Sb eq.	7,35E-06	9,98E-06	6,08E-08	1,74E-05
Abiotic depletion potential - Fossil fuels		MJ, net calorific value	2,03E+01	1,17E+01	2,33E-01	3,22E+01
Water scarcity potential		m ³ eq.	4,64E-01	1,02E-01	3,96E-03	5,70E-01



EU: Sustainable products initiative

[**The Sustainable Products Initiative**] echoes the European Green Deal in pointing to the leading role that Europe's industry must play in this, by reducing its carbon and material footprint and embedding circularity across the economy, and underlines the need to move away from traditional models, and revolutionise the way we design, make, use and dispose of products.

The core of this legislative initiative is to extend the scope of the **Ecodesign Directive** beyond energy-related products so that it covers the broadest possible range of products and helps achieve a circular economy

Furthermore, the **Empowering consumers for the green transition initiative** will improve information on products at the point of sale in particular on their durability and reparability, and help prevent greenwashing and premature obsolescence.

Quotes from: https://ec.europa.eu/info/law/better-regulation/have-your-say/initiatives/12567-Sustainable-products-initiative_en

Fit for
55

Circular
Economy
Action
Plan

Integrated
product
policy

Material selection: rules of thumb

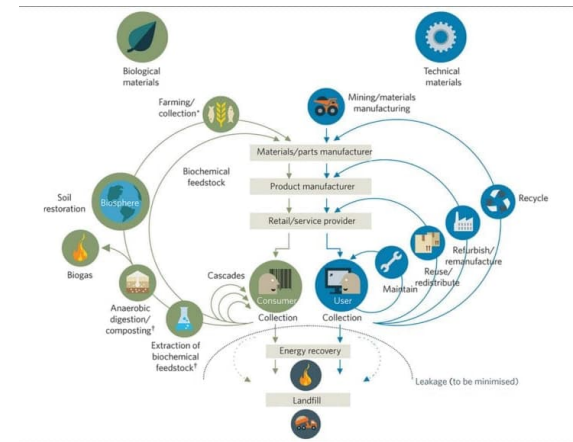
Green vs blue

Waste from another process

**Recycled material, in the loop
vs down-cycled**

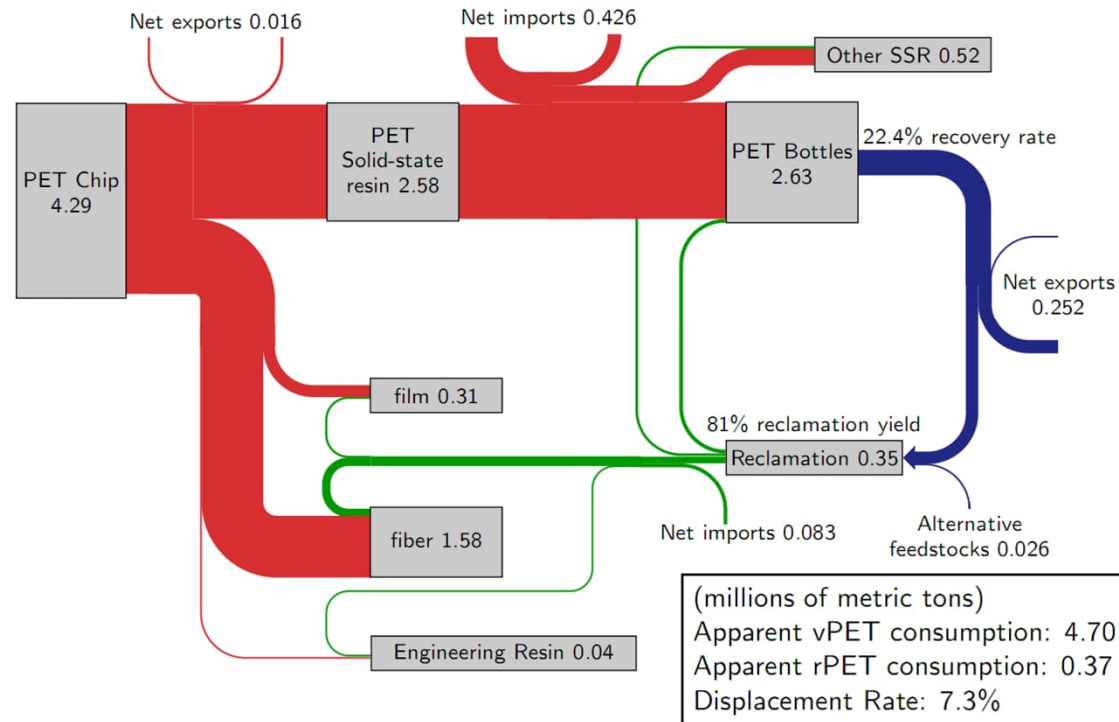
Recyclable

Non-toxic and safe



Material flow of single material:

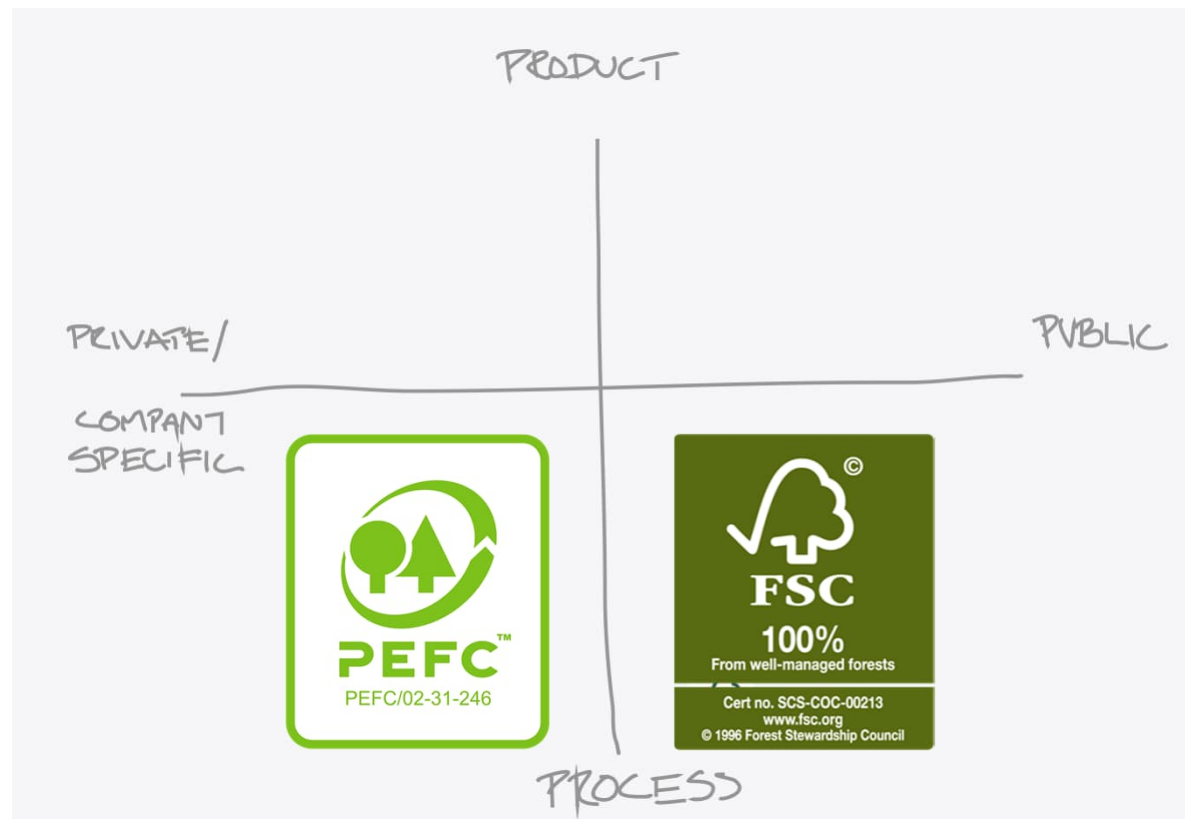
PET Material Flow – US (2006)



(PET beverage bottle recycling by B. Kuczenski and R. Geyer, University of California, Santa Barbara)

Label exercise

- Form groups of four
- Present the others the labels you chose
- Go to...
<https://flinga.fi/s/F8ENP94>
- Place your label logos on the board according to whether they set mostly product or process criteria and are governed by private or public bodies.
- Place duplicates only if you disagree about the position



Next session: How does design speak?

Iconic – likeliness, metaphors

Indexical –traces of manufacture or origin

Symbolic – arbitrary, has to be learned

S.Vihma: Design reaches beyond providing affordable tools for people to do their job.

T. Keinonen: Design without aesthetics is simply bad engineering.

M. Jalas: Design makes the world around us understandable

Exercise: Select a product/service that communicates sustainability effectively and interestingly or is controversial. Submit an image and observations on how and what the products communicates (appr 200 words). Use Susan Vihma's categories of semiotic meanings. Grade 1-5.