

# Driving the market towards circular economy

Professor Arne Remmen ar@plan.aau.dk

Research group on Sustainability, Innovation & Policy Department of Development and Planning Aalborg University (cph campus)

Better World Fashion

**98% REUSE 100% UNIQUE** 













### Screening impacts

The calculation estimates that a BWF jacket compared to industry standard will reduce

Water: 340 L

Co2: 16 kg

Chemicals: 3.75 kg

Waste: 6 kg



#### Sustainable Products in a Circular Economy

#### **6.THE ENVIRONMENTAL FOOTPRINT METHODS**

There are more than 465 environmental labels worldwide, up from 430 in 2013. In the EU, more than 100 environmental labels are active There are more than 80 leading initiatives on greenhouse gas reporting only.

• These labels and initiatives are based on different methods, with a varied level of reliability and environmental issues covered. This proliferation of initiatives and labels is creating **confusion and mistrust** in environmental information — and results in a sub-optimal level of using more environmentally friendly products and solutions. More than 60% of respondents in the public consultation considered that there are too many different and confusing labels bearing environmental information.

#### COMMISSION STAFF WORKING DOCUMENT – March 2019

Sustainable Products in a Circular Economy

- Towards an EU Product Policy Framework contributing to the Circular Economy



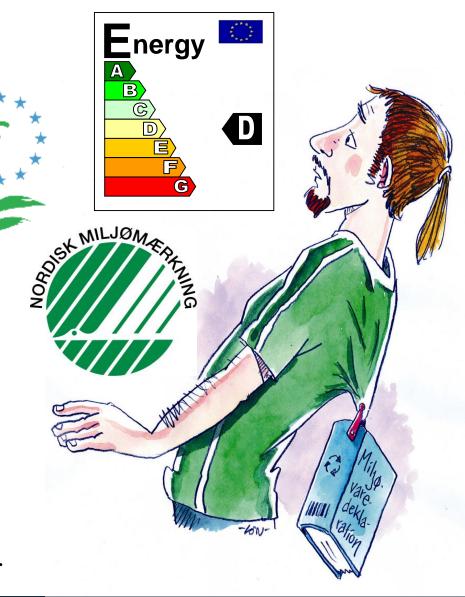
#### **Informed choices?**

When the consumers have the right information. Then they will buy the right products!

But what else is on their agenda?

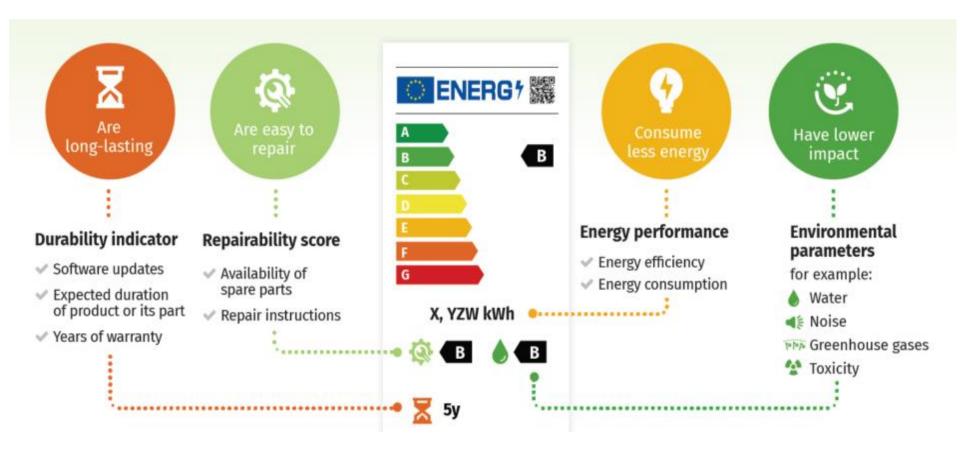
- Health
- Quality
- Design
- Price (total cost of ownership)
- Durability (repair, upgrade, etc.)
- Functionality

Importance of social practise, culture, etc.





#### **Energy labelling: in the future?**



Source: ECOS, www.ecostandard.org MAY, 2019



#### **Need to balance:**

Impacts vs Potentials
Information vs Value
Assessment vs Improvement
Accounting vs Narratives
(tælle vs fortælle)
Reduce risks vs competitive advantages
Engineering schools vs Business schools

Building bridges between the different world views



#### **PEF**

#### The EU work on PEF has many benefits

- Common efforts on methodology, BUT there will not only be one
- Product category rules getting more formalised (PEFCR)
- Improved databases

#### The results of LCA/PEF will still depend on:

- Definition of the **functional** unit
- The system boundaries
- The **data quality**



Approach

OPERATIONAL OPTIMIZATION "Eco-Efficiency"

2.

ORGANIZATIONAL TRANSFORMATION

"New Market Opportunities" 3.

SYSTEMS BUILDING

"Societal Change"

Innovation. Objective

Innovation Outcome

Innovation's Relationship to the Firm Compliance, efficiency

 "Doing the same things better"

Reduces harm

Novel products, services or business models

 "Doing good by doing. new things"

Creates shared value

Fundamental shift in firm purpose

CSR + Life cycle management

Novel products, services or business models that are impossible to achieve alone

 "Doing good by doing new things with others"

Creates net positive impact

Extends beyond the firm to drive institutional change

Cleaner production/Waste minimisation Eco-design/cleaner products Energy and water savings

to business as usual

Incremental improvements

Circular economy /Industrial ecology Product service systems



## PEF and circular economy

**PRODUCT** Environmental Footprint is born as part EU's Integrated Product Policy (IPP) and Sustainable Consumption and Production (SCP/SDG 12)

While circular economy expand this to a system perspective

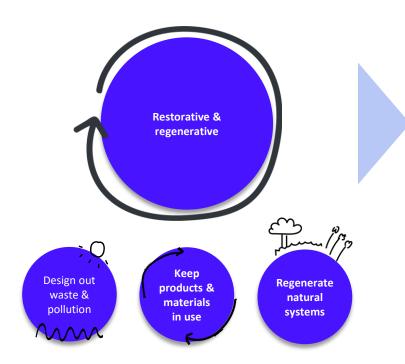
- The problems are interconnected and can not been reduced by just focusing on product improvements
- System changes are necessary in the mobility, in building sector and in the food system

An electric car is better than a petrol, but the mobility system has to be changed



#### Designing for the circular economy

# **Circular economy vision & principles**



#### **Design strategies**

Safe & circular material choices

**Dematerialisation** 

Format choices to avoid leakage

From product to service

Product life extension

Embedding

**Modularity** 

intelligence

Designing for inner loops

Designing for leaky nutritious loops

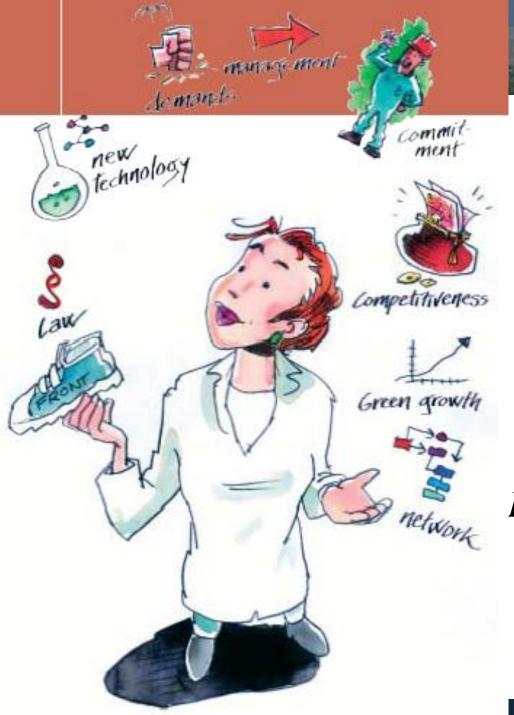
+ Business Model Strategies

Ellen MacArthur Foundation presentation, 2019

<sup>\*</sup> For illustration purposes. Not exhaustive







Thank you for your attention

Arne Remmen

ar@plan.aau.dk

Department of Development and Planning Aalborg University Denmark