European product law: efforts to address product lifetimes, repairability, and resource efficiency

C. Dalhammar, IIIEE, Lund University
Circular Business models

Bioeconomy

New products and markets (e.g. wood construction, biobased plastics & products, biorefineries, wood-based textiles), industrial ecology in supply chains etc.

Manufacturing

Durable & sustainable products, remanufacturing, repair, re-use, sharing & renting (cars, tools etc.), PSS, modular design, design for durability & repair, software support & upgrading etc., recycling of materials
The circular economy: towards a new business paradigm with support from public policy

Abstract

Today, we have a linear economy and the current situation is a product of past decisions on consumption, manufacture and disposal of unnecessary and unwanted products, which in turn has a huge impact on the health and sustainability of our environment. We need to start questioning how we make products, market, sell and encourage.

As a foundation for this process, this report highlights what the circular economy is about and some key trends we need to address to move towards a circular economy. It also highlights the need to connect the business and policy development agenda to the circular economy, where sustainability, resource efficiency and social acceptability are a key element.

Moving away from the throwaway society

Key messages

- Our history is shaped by the linear economy and the way we use and dispose of our products.
- Linear economy is a value system that seeks to maximize the value of products and services.
- Circular economy seeks to minimize the use of resources and maximize the value of products and services.
- We need to change current perceptions on consumption and waste management.
- Public policy can play a key role in supporting the transition to a circular economy by setting guidelines and providing incentives.
Citizen roles in "circular" consumption

Avoid unnecessary purchasing
Buy durable, high-quality and repairable products
Buy re-used, repaired and 2-hand
Use product labels and life cycle information
Choose: services over products, sharing over leasing and leasing over buying

Return for 1. re-use and repair & 2. recycling
Properly sort & collect products

Avoid replacing functioning products
Proper use; maintenance; updates

Repair instead of buying new through repair ‘services, communities or DIY’

Re-sell, exchange or give away instead of throwing away

Engage in P2P sharing schemes

Source: O. Mont., Maitre-Ekern & Dalhammar
Legal developments with large future influence on corporate practices

1. Sustainable products - policies, laws and standards
2. Corporate social sustainability (CSR) and supply chain due diligence
3. Carbon disclosure and carbon markets
4. Sustainable finance (e.g., the Taxonomy)
5. Industrial policy: state aid, competition

“EU’S NEW INDUSTRIAL POLICY WILL BE PROMINENT ON 2023 AGENDA” Euractiv, Dec. 2022
“Thus, I argue that a life-cycle world-view is becoming part of current, late-industrial culture in the Western world...”

“Every product casts a shadow...”

Eva Heiskanen, 2002, 1999
“Extending the lifespan of smartphones and other electronics by just one year would save the EU as much carbon emissions as taking 2 million cars off the roads annually” EEB

“One third of all food produced is lost or wasted –around 1.3 billion tonnes of food –costing the global economy close to $940 billion each year. Up to 10% of global greenhouse gases comes from food that is produced, but not eaten. Source: United Nations Environment Program” (UNEP 2021).

“Private consumption: Textiles EU's fourth largest cause of environmental pressures after food, housing, transport” EEA

Modelling suggests that the sum of unsold products being destroyed in the European Union from only two product categories (textiles and electronics) is expected to reach €21.74 billion by 2022 (Rödig et al. 2021)

Rags, Not Riches: Why Ghana Is Fast Fashion’s Dumping Ground

Published 1 month ago
By Peace Hyde
Digital product passports

Supporting standards for products, materials, reporting and monitoring etc. Legal framework for sustainable finance, e.g. reporting and taxonomy

Upstream – supply chains
- Proposal for a Regulation on deforestation-free products
- Conflict Minerals Regulation
- Proposal: Carbon border adjustment mechanism
- Timber Regulation
- Proposal: Directive on Corporate Sustainability Due Diligence
- Proposal: Regulation on prohibiting products made with forced labour on the EU market
- Critical Raw Materials

Examples of EU policies
- Supply Chain Due Diligence Act (Ger)
- Fashion Sustainability and Social Accountability Act (NY State)
- Corporate responsibility for human rights (Can)
- Transparency Act (Nor)

Examples of national, regional and local policies
- Mandatory labeling information (Fra)
- Repair fund (Fra)
- Criminalisation of planned obsolescence (Fra)
- Repair index (Fra)
- Proposed durability index (Fra)
- Longer guarantees in consumer law (several EU MS)

Design, production, information
- Proposal Ecodesign Regulation
- Ecodesign Directive
- REACH, RoHS, ELV Directive etc.

Examples of EU policies
- Precautionary principle
- Toxics in products
- Ecodesign Directive
- REACH, RoHS, ELV Directive etc.

Examples of national, regional and local policies
- Duty of Care (Ger)
- No VAT on donated goods (Bel)

Point of sale
- Rules on consumer rights, guarantees, marketing
- Proposals for consumer information: Empowering consumer green transition
- Proposed labeling in proposal for Ecodesign Regulation
- Proposed Directive on Green Claims

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Examples of national, regional and local policies
- Partial ban, destruction on unsold goods (Fra)
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Product destruction
- Rules on reporting/bans on unsold goods in proposal for Ecodesign Regulation

Examples of EU policies
- Proposal on Ecodesign Regulation
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Examples of national, regional and local policies
- Repair fund
- Tax reductions on repairs
- Repair vouchers & repair networks (Vienna, Graz)

Use phase
- Legal proposal on right-to-repair
- Proposed Battery Regulation: easier to replace batteries in products
- Rules on right-to-repair in Ecodesign Directive

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Examples of national, regional and local policies
- Re-use options at recycling stations
- Public procurement of remanufactured goods
- Local re-use centers and support to second-hand sector

End-of-use
- Rules on producer responsibility and packaging
- Standards on e.g. remanufacturing
- New legal definition on e.g. refurbishment & remanufacturing, proposed Ecodesign Regulation

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Created by C. Dalhammar & L. Milios
Product law: EU internal market requirements

• **Product safety** regulations etc.


• **Energy efficiency** of goods: The Ecodesign Directive

• **Extended producer responsibility** for goods (packaging, electronics etc.) – producers responsible for collection and recycling of used products
Product policies: demand side

• Public procurement
  – Electric cars, biobased healthcare products, wood-based construction, reconditioned furniture etc.
  – Influences product offerings, volumes of scale
  – Some effects on design, e.g., more biobased products

• Mandatory labels, e.g., EU energy label
  – Influences design, especially among top performers

• Voluntary labels, e.g., eco-labels, TCO labeling
  – Influences design, but not always visible!
  – Used as benchmark!
The Circular Economy: implications for product regulation

- We want products with longer lifetimes, to save resources

- This can be achieved through changes in product design, or by stimulating repair activities

- We also want to stop destruction of unsold products

- Several legal frameworks can be applied to support these developments
Longer product lifetimes can be environmentally beneficial…

- For passive products that do not use energy, e.g. furniture, clothing
- For energy-using products with the majority of environmental impacts in the production stage, e.g. computers, tablets, phones
- For energy-using products with slowing rates of energy-efficiency improvements, e.g. vacuum cleaners
- For energy-using products with low intensity of use, e.g. appliances in a summer house
- For energy-using products used in decarbonised energy context, e.g. Norway, Sweden
Is longer lifetime always good? LED lamps as an example

- Is it better to have **one 12 W lamp** that lasts 50 000 hours...
  - Saves resources!
- ...than chose a **12 W lamp** that lasts 25 000 h, and is then replaced by a **2 W lamp** that lasts 25 000 hours?
- Importance of electricity mix? Cf. Norway vs. Poland!
- Importance of technological developments and cost reductions?
- Importance of user behaviour, application

We have taught people that recycling is good… 
…now we want longer product lifetimes and support for other ’R’ activities!

“In a circular economy, the value of products and materials is maintained for as long as possible.”

European Commission

<table>
<thead>
<tr>
<th>Term</th>
<th>User</th>
<th>Level</th>
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</thead>
<tbody>
<tr>
<td>Repair &amp; maintenance</td>
<td>First user</td>
<td>Product</td>
</tr>
<tr>
<td>Re-use</td>
<td>Second Hand</td>
<td>Product</td>
</tr>
<tr>
<td>Refurbish</td>
<td>Second Hand</td>
<td>Product</td>
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<tr>
<td>Repurpose</td>
<td>Second hand in another application</td>
<td>Product</td>
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<tr>
<td>Remanufacture</td>
<td>Second Hand</td>
<td>Component</td>
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<tr>
<td>Recycle</td>
<td>Same industry (closed)</td>
<td>Material</td>
</tr>
<tr>
<td></td>
<td>Any other industry (open)</td>
<td>Material</td>
</tr>
<tr>
<td>Recovery</td>
<td>Any</td>
<td>Energy/material</td>
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</tbody>
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**Lifetime is dependent** on e.g. product design and quality of materials, price of repairs vs. price of new product, proper maintenance/service, access to reasonably priced spare parts and repair services, and repair information etc.; consumer behaviour and fashion trends; access to re-use infrastructure and repair support, secondhand shops etc.

Product lifetime/repairability/recyclability are thus ”potentials”
Main barriers for long life span and repairs

- Product design (durability/reparability)
- Low price on resources
- Low price of new products
- Consumer habits
- High price of labour (repair) = high cost
- Access to repair services
- Focus on recycling in waste law (not re-use)

Legal barriers for undertaking repairs:
- Contracts
- IPR laws (patents/copyright)

Additional barriers

- Time constraints
- Education for repairers
- Consumer knowledge
- Affluent consumers
- Competitiveness & attitude of repair sector
- Repair culture
- Linear business models
- Current marketing practices
- Infrastructure for re-use and recycling
How promote product durability? I

• EU Ecodesign requirements - product design
  – Exists for vacuum cleaners, light bulbs
  – Vacuums: motor lifetime and hose stability
  – Light bulbs: lifetime, different dimensions

• …but difficult to regulate for many product groups
  – need for standards
• Problem of testing products
How promote product durability? II

• Longer consumer guarantees in consumer law
• Some countries have a three year mandatory guarantee e.g. Sweden

• Criminalization of planned obsolescence (FR)
• Using competition law to fine companies for slowing down cell phones (IT)

• Proposed: French ‘durability index’
Promoting ‘right-to-repair’ (R2R)

- Ecodesign Directive: manufacturers must provide spare parts, repair manuals, software to independent repairers and consumers
- Consumer law: EU R2R proposal
- French repair index
Proposal for the Ecodesign for Sustainable Products Regulation

• Will replace the current Ecodesign Directive

• Aims at harmonization of member state measures
  – Labeling, destruction of unsold goods

• Wide scope: most product groups included, except medical products and foodstuff
Proposal for the Ecodesign for Sustainable Products Regulation

• Introduces digital passports

• Can be used to set a number of requirements on products, e.g.
  – Energy efficiency
  – Substances and micro plastics
  – Lifetime, repairability
  – Recycled content
“The new EU Energy Labels will incorporate circularity aspects, such as a repair score, by means of supplementary information. For other products, the new ESPR label will provide such information. Some products may bear both the EU Energy Label and an ESPR label, in case there is evidence that this will be more effective for consumers and less burdensome for industries. “

Källa: Ecos
Proposal for the Ecodesign for Sustainable Products Regulation

• Digital product passports: can be used to keep track of a product, and aid certain practices such as:
  - Market surveillance of products;
  - Recalls of dangerous products;
  - Digital receipts;
  - Keep track of fraudulent products, and illegal products sold over e-commerce;
  - Support activities like recycling;
  - Allow a consumer to get information about a re-used product.

‘product passport’ means a set of data specific to a product that includes the information specified in the applicable delegated act adopted … that is accessible via electronic means through a data carrier… (Art. 2)
Digital product passports

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Created by C. Dalhammar & L. Milios
Environmental aspects for lighting

Beyond energy efficiency

– Extending lifetimes through warranties, standardization, modularity, repairability, availability of spare parts
– Improvements in raw materials use and manufacturing
– Use and recycling of critical materials
– Lighting pollution effects on ecosystems and health
– Thinking carefully about lighting to increase well-being
  • Rebounds and maximum lighting needs

Source: J.L. Richter
Revised and new GPP criteria

Lifetime extension
• Proposed warranties of min. 4 years
  – Industry divided
  – case by case?
  – Some asking for 8 years
• Ensure reparability
  – Diagram to aid repair
  – Guarantee of accessibility (i.e. able to use common tools)
  – Availability of spare parts
    • Enforcement?

Source: Seattle Municipal Archives.
Tack så mycket! Thank you!

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- Greening the Economy: Sustainable Cities
  How can we shape our urban development towards sustainable and prosperous futures?

- Circular Economy: Sustainable Materials Management
  How can we create a circular economy through sustainable materials management?

  How can we work with nature to design and build our cities?

- Sharing Cities: Governance and Urban Sustainability
  How can we govern the sharing economy in our cities?