MISTRA SUSTAINABLE CONSUMPTION
FRÅN NISCH TILL MAINSTREAM

REES MISTRA Resource-Efficient and Effective Solutions

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

C. Dalhammar, IIIEE, Lund University

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Circular Business models

Bioeconomy

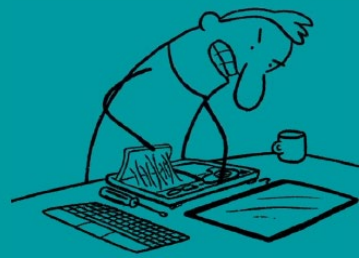
New products and markets (e.g. wood construction, biobased plastics & products, biorefineries, wood-based textiles), industrial ecology in supply chains etc.

Manufacturing

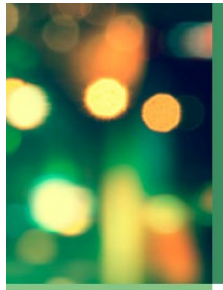
Durable & sustainable products, remanufacturing, repair, re-use, sharing & renting (cars, tools etc.), PSS, modular design, design for durability & repair, software support & upgrading etc., recycling of materials

REMOVABLE, REPLACEABLE AND REPAIRABLE BATTERIES

HOW TO IMPROVE THE CIRCULARITY OF RECHARGEABLE BATTERIES IN CONSUMER ELECTRONICS AND LIGHT ELECTRIC VEHICLES



6TH DECEMBER 2021



Increasing the lifespan of products

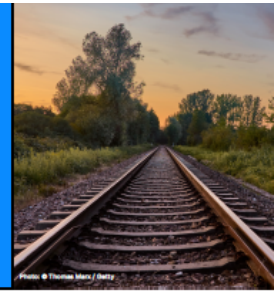
Policies and consumer perspectives

ER 2021:25

The circular economy: towards a new business paradigm with support from public policy

SEI Stockholm Environment Institute

CEEW THE COUNCIL



Abstract

Today, we live in a linear economy and the current situation is a product of past ideas on effective markets, legal concepts and legal culture, business models and ideas on ownership and consumer culture. For us to move to a more circular economy, we need to start questioning how we look at products, markets, ownership and resources.

As a foundation for this process, this report highlights what the circular economy is about and some key issues we need to address to move towards a circular economy. It also highlights the need to connect the business and policy developments related to the circular economy to other sustainability fields, such as climate change and chemicals, and to place it within the broader context of sustainable consumption. A circular economy is not only about taking care of our resources; we must also ensure that all humans have access to the resources they need to live a decent life. Thus, the social dimensions of the circular economy should not be neglected: it must be an economy that benefits all humans.

Key messages

- Our language is a means for change –we must pay attention to terms we use and how they affect our thinking and actions.
- Circular economy is a vision of an economic system based in a systemic approach to maintain a circular flow of resources, by regenerating, retaining or adding to their value, while contributing to sustainable development.
- The circular economy principles are: systems thinking, value creation, value sharing, resource availability focus, resource traceability and ecosystem resilience.
- Nothing is 100% circular even in a circular economy
- A new mindset is needed for design of circular economy solutions, and there is a need for an extended life cycle perspective
- We must change current perceptions on consumption and ownership; develop a standardized nomenclature and common concepts in legal frameworks, and; support circular business models through laws and public procurement

BACKGROUND PAPER

May 2022

Mattias Lindahl[1]
Carl Dalhammar[2]

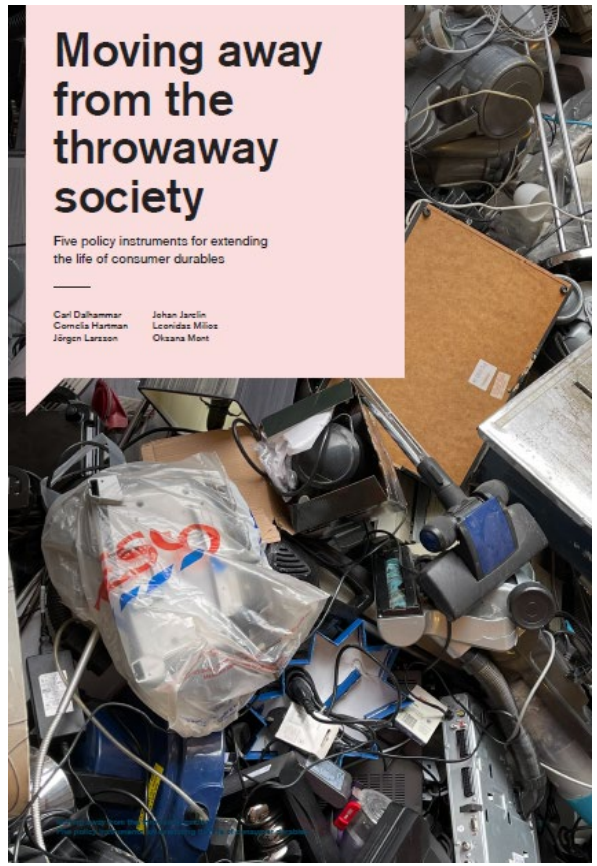
1 Lindqvist University
2 Lund University

This Background Paper supports the scientific report, *Stockholm+50: Unlocking a Better Future*

Moving away from the throwaway society

Five policy instruments for extending the life of consumer durables

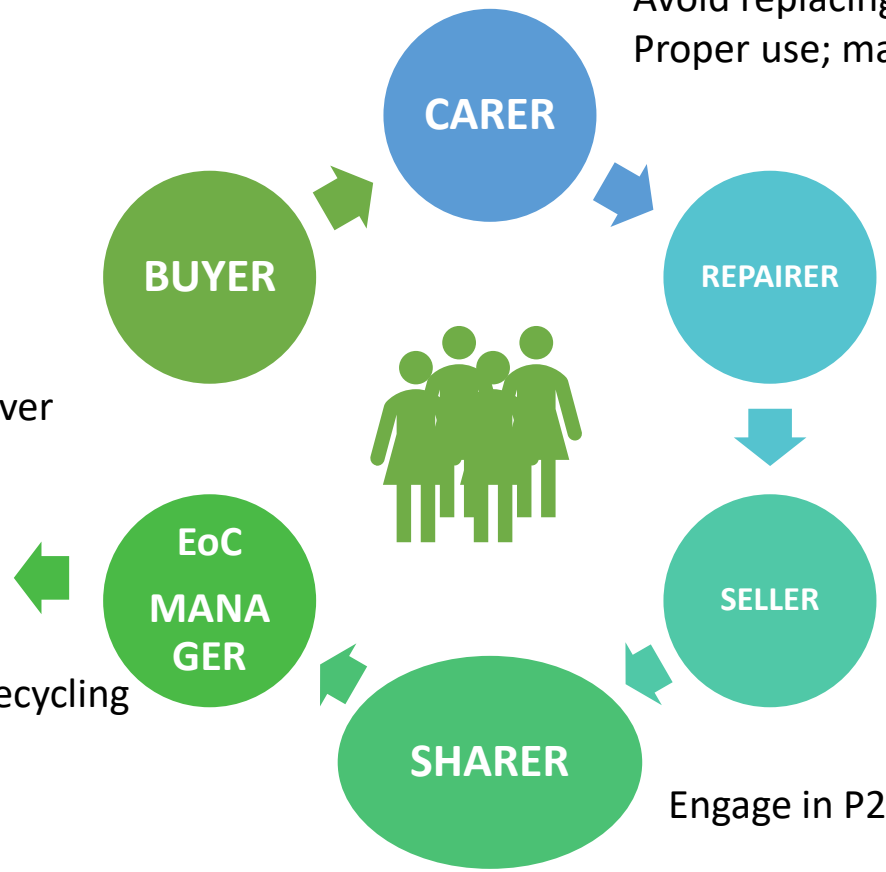
Carl Dalhammar
Cornelia Hartman
Jörgen Larsson
Johan Jarclin
Leonidas Milios
Oksana Mont



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

Avoid replacing functioning products
Proper use; maintenance; updates



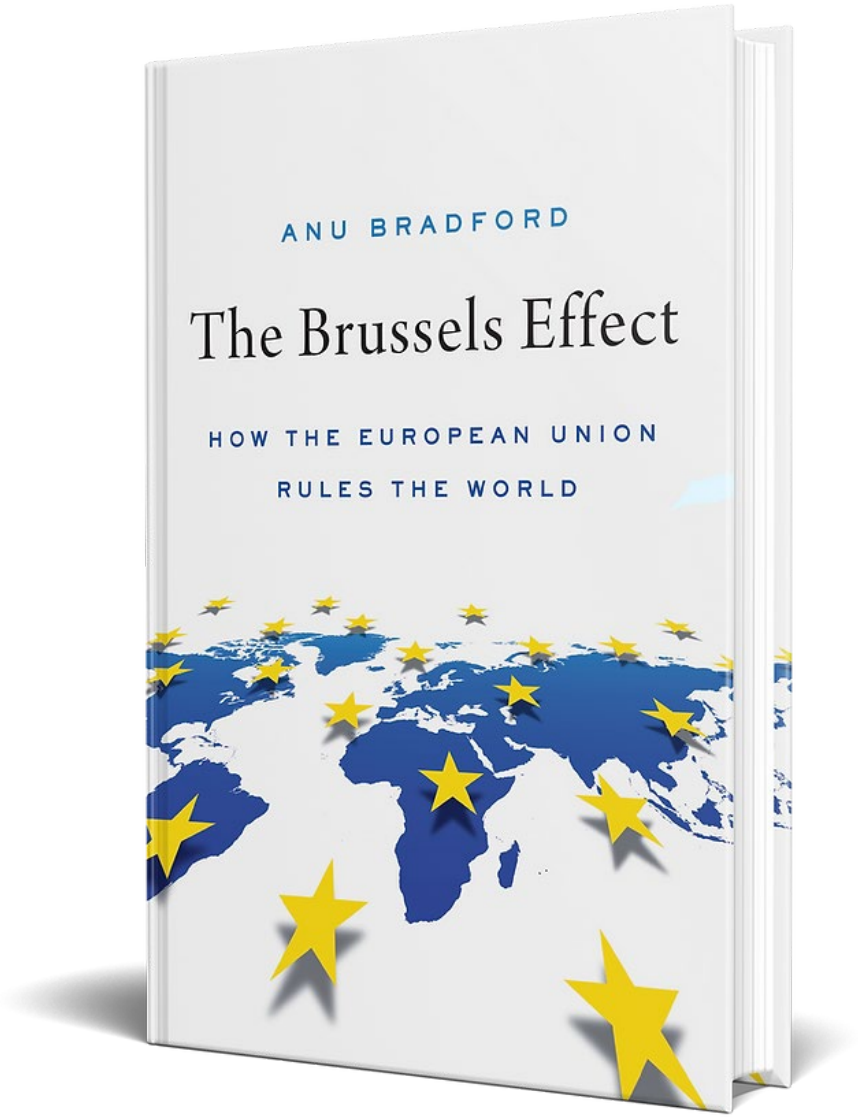
Repair instead of buying new through repair ‘services, communities or DIY’

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

Engage in P2P sharing schemes

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

Source: O. Mont., Maitre-Ekern & Dalhammar



MISTRA
Resource-Efficient and Effective Solutions

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

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"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

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Digital product passports

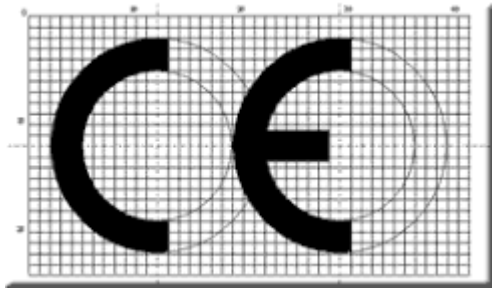
Supporting standards for products, materials, reporting and monitoring etc.
Legal framework for sustainable finance, e.g. reporting and taxonomy

Upstream – supply chains	Design, production, information	Point of sale	Product destruction	Use phase	End-of-use
Examples of EU policies					
▪ 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	▪ Proposal Ecodesign Regulation ▪ Ecodesign Directive ▪ REACH, RoHS, ELV Directive etc.	▪ 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	▪ Rules on reporting/bans on unsold goods in proposal for Ecodesign Regulation	▪ Legal proposal on right-to-repair ▪ Proposed Battery Regulation: easier to replace batteries in products ▪ Rules on right-to-repair in Ecodesign Directive	▪ Rules on producer responsibility and packaging ▪ Standards on e.g. remanufacturing ▪ New legal definition on e.g. refurbishment & remanufacturing, proposed Ecodesign Regulation
Examples of national, regional and local policies					
▪ Supply Chain Due Diligence Act (Ger) ▪ Fashion Sustainability and Social Accountability Act (NY State) ▪ Corporate responsibility for human rights (Can) ▪ Transparency Act (Nor)	▪ 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)	▪ Partial ban, destruction on unsold goods (Fra) ▪ Duty of Care (Ger) ▪ No VAT on donated goods (Bel)	▪ Repair fund (Fra) ▪ Tax reductions on repairs (Swe) ▪ Repair vouchers & repair networks (Vienna, Graz)	▪ Re-use options at recycling stations ▪ Public procurement of remanufactured goods ▪ Local re-use centers and support to second-hand sector

Created by C. Dalhammar & L. Milios

Product law: EU internal market requirements

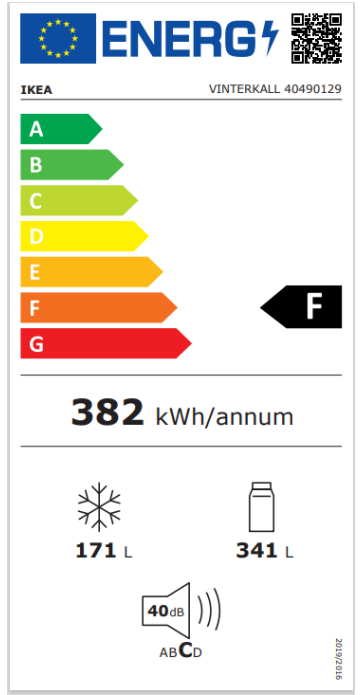
- **Product safety** regulations etc.
- **Chemical content** in goods; REACH Regulation, RoHS Directive, End-of-life Vehicles Directive, Toy Safety Directive, Product Safety Directive etc.
- **Energy efficiency** of goods: The Ecodesign Directive



- **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!



NORDIC COUNTRIES

The Circular Economy: implications for product regulation

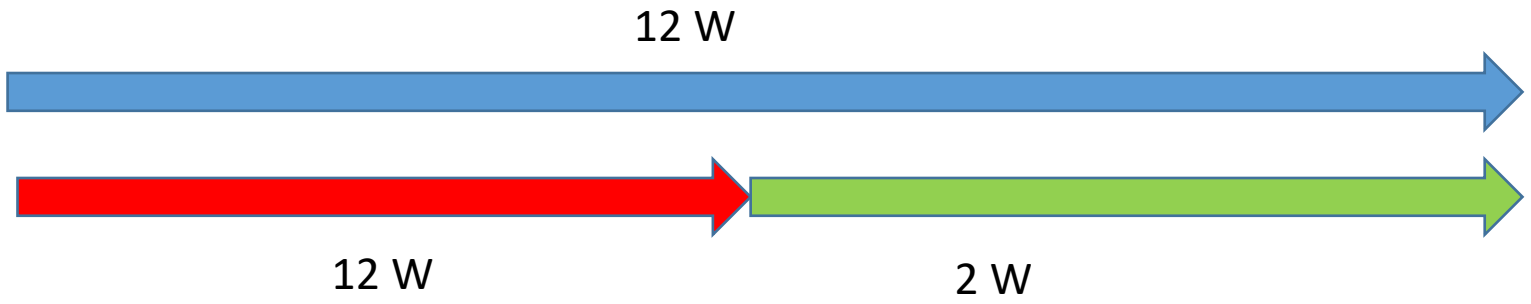
- We want products with longer lifetimes, to save resources
- This can be achieved through changes in product design, or by stimulating repair activities
- We also want to stop destruction of unsold products
- Several legal frameworks can be applied to support these developments

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 technogical developments and cost reductions?
- Importance of user behaviour, application



Cf. Richter et al. 2019. Trade-offs with longer lifetimes? The case of LED lamps considering product development and energy contexts. Journal of Cleaner Production

We have taught people that recycling is good…

…now we want longer product lifetimes and support for other 'R' activities!

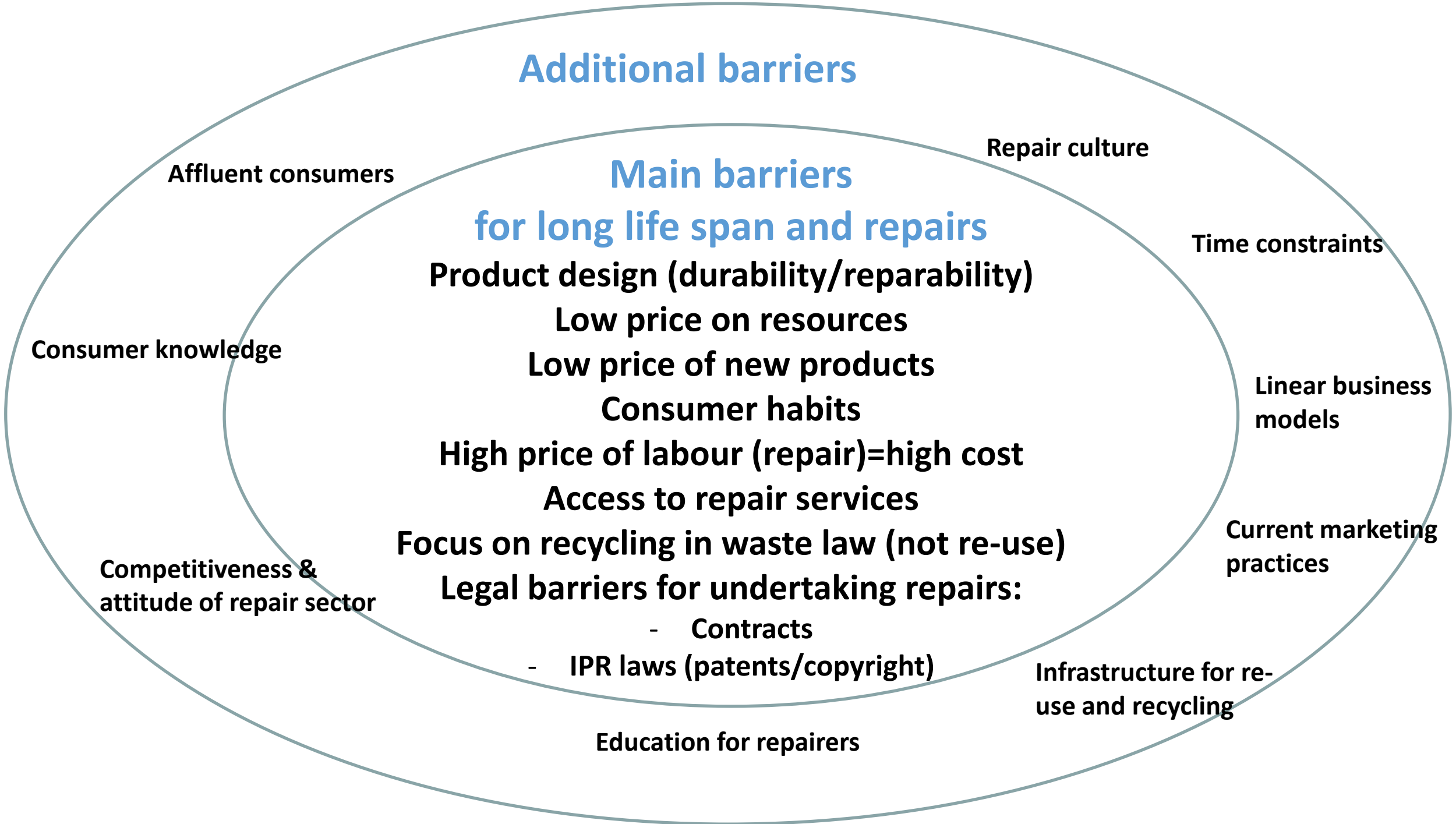
"In a circular economy, the value of products and materials is maintained for as long as possible."

European Commission

Term	User	Level
Repair & maintenance	First user	Product
Re-use	Second Hand	Product
Refurbish	Second Hand	Product
Repurpose	Second hand in another application	Product
Remanufacture	Second Hand	Component
Recycle	Same industry (closed) Any other industry (open)	Material
Recovery	Any	Energy/material

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"

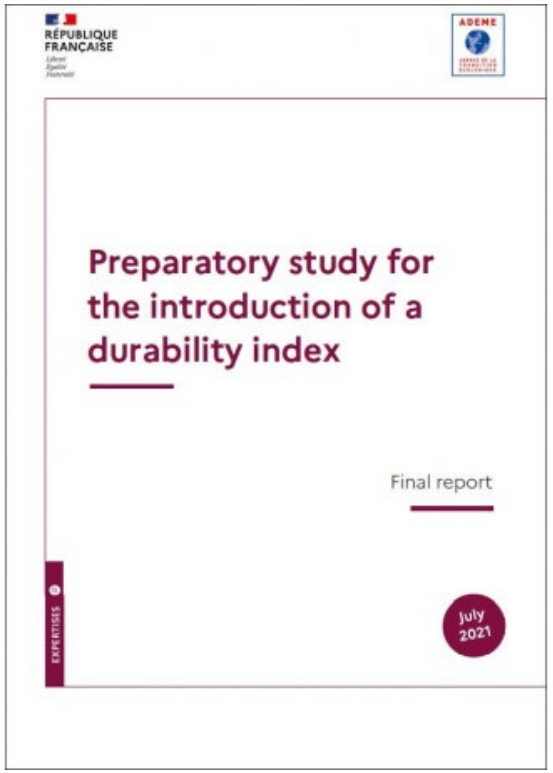

Additional barriers
Affluent consumers
Repair culture
Main barriers
for long life span and repairs
Time constraints
Product design (durability/reparability)
Low price on resources
Consumer knowledge
Low price of new products
Consumer habits
Linear business models
High price of labour (repair)=high cost
Access to repair services
Focus on recycling in waste law (not re-use)
Current marketing practices
Competitiveness & attitude of repair sector
Legal barriers for undertaking repairs:
- Contracts
- IPR laws (patents/copyright)
Infrastructure for re-use and recycling
Education for repairers

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



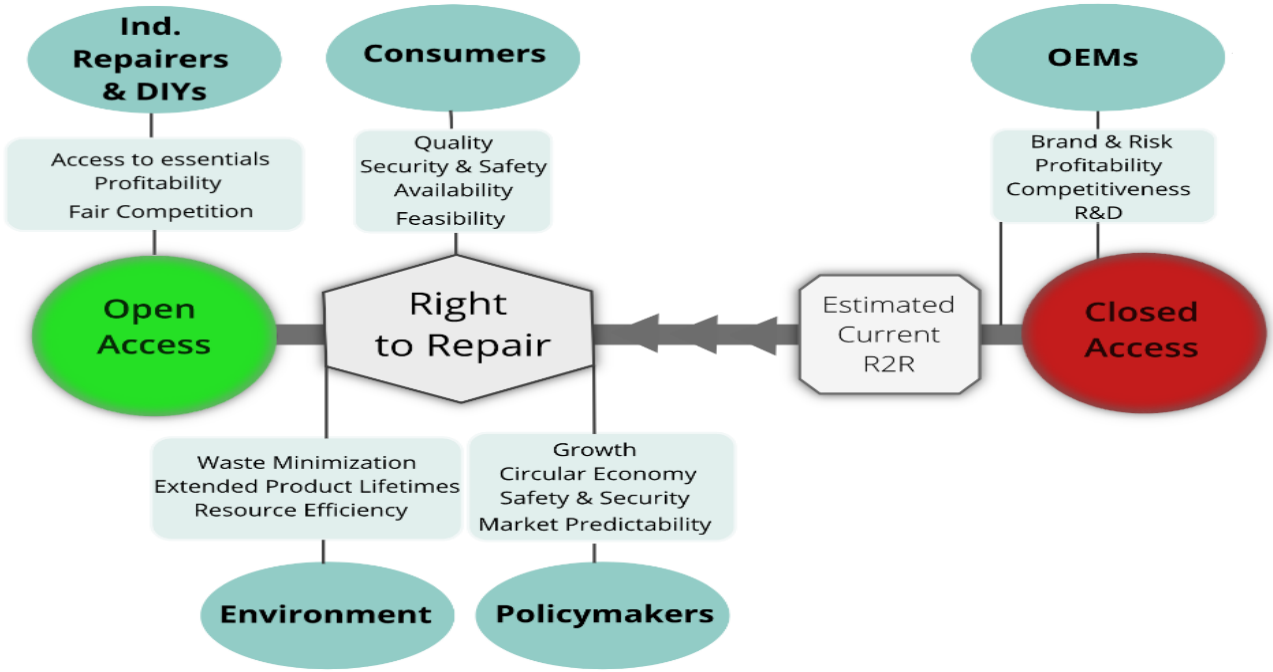
- Longer consumer guarantees in consumer law
- Some countries have a three year mandatory guarantee e g Sweden

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

- Proposed: French ’durability index’

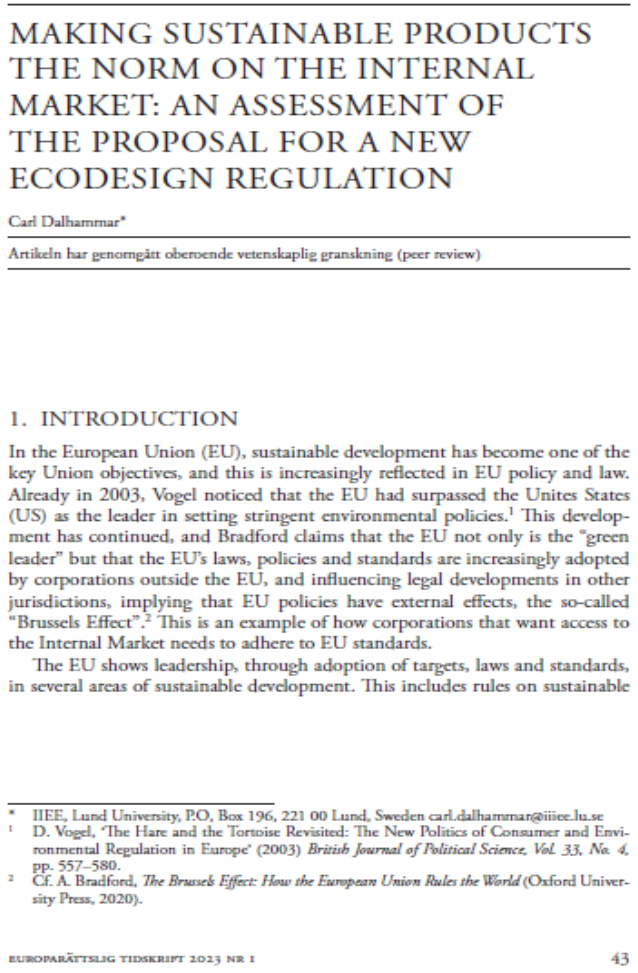
Promoting ’right-to-repair’ (R2R)

- 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



MAKING SUSTAINABLE PRODUCTS THE NORM ON THE INTERNAL MARKET: AN ASSESSMENT OF THE PROPOSAL FOR A NEW ECODESIGN REGULATION

Carl Dalhammar*

Artikeln har genomgått oberoende vetenskaplig granskning (peer review)

1. INTRODUCTION

In the European Union (EU), sustainable development has become one of the key Union objectives, and this is increasingly reflected in EU policy and law. Already in 2003, Vogel noticed that the EU had surpassed the Unites States (US) as the leader in setting stringent environmental policies.[1] This development has continued, and Bradford claims that the EU not only is the "green leader" but that the EU's laws, policies and standards are increasingly adopted by corporations outside the EU, and influencing legal developments in other jurisdictions, implying that EU policies have external effects, the so-called "Brussels Effect".[2] This is an example of how corporations that want access to the Internal Market needs to adhere to EU standards.

The EU shows leadership, through adoption of targets, laws and standards, in several areas of sustainable development. This includes rules on sustainable

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1 D. Vogel, 'The Hare and the Tortoise Revisited: The New Politics of Consumer and Environmental Regulation in Europe' (2003) *British Journal of Political Science, Vol. 33, No. 4,* pp. 557–580.
2 Cf. A. Bradford, *The Brussels Effect: How the European Union Rules the World* (Oxford University Press, 2020).

EUROPARÄTTSLIG TIDSKRIFT 2023 NR 1 43

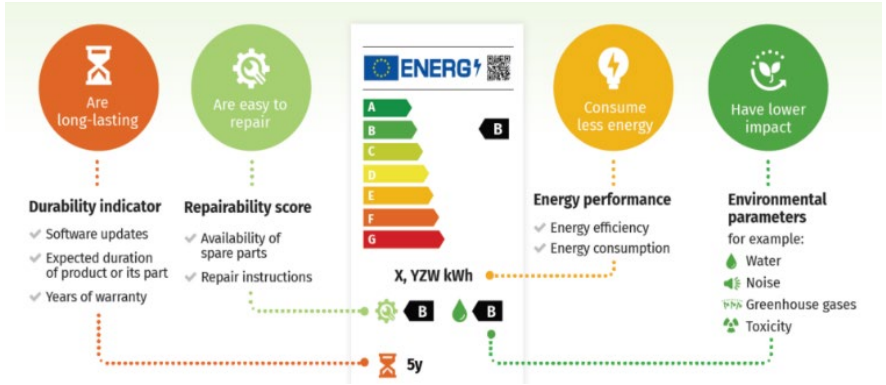
Proposal for the Ecodesign for Sustainable Products Regulation

- Introduces **digital passports**

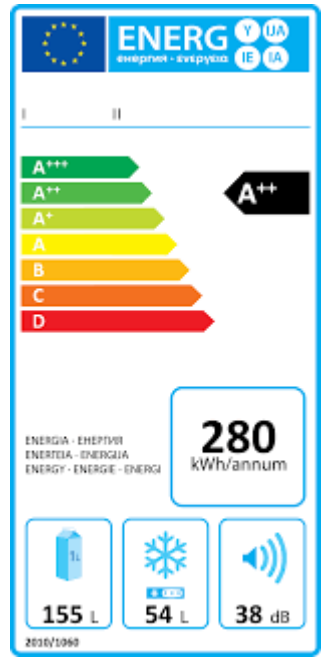
- Can be used to set a number of requirements on products, e g
  - **Energy efficiency**
  - **Substances and micro plastics**
  - **Lifetime, repairability**
  - **Recycled content**

Labeling, Art. 14

“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

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

Upstream – supply chains	Design, production, information	Point of sale	Product destruction	Use phase	End-of-use
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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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  How can we live a good life on one planet with over seven billion people?
- Greening the Economy: Sustainable Cities
  How can we shape our urban development towards sustainable andprosperous futures?
- Circular Economy: Sustainable Materials Management
  How can we create a circular economy through sustainable materials management?
- Urban Nature: Connecting Cities, Nature and Innovations
  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?