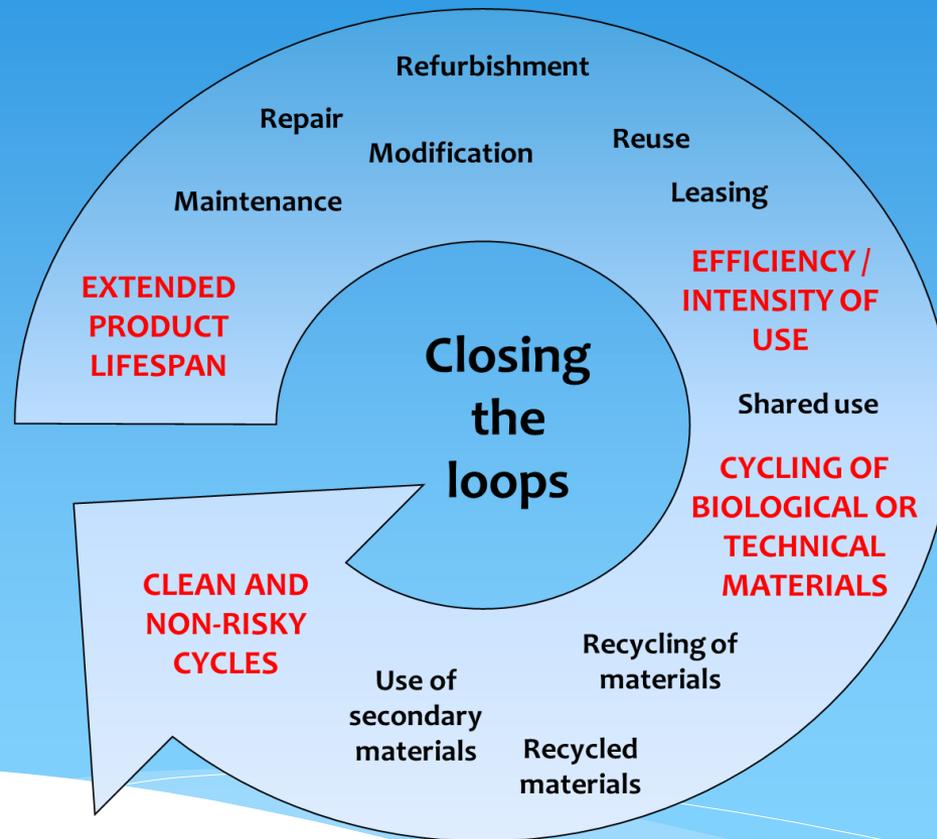


Circular Procurement



CIPRON –project:

Finnish Environment Institute

IVL Swedish Environmental Research Institute

Copenhagen Resource Institute



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 - * Definition
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 - * Different approaches to circular procurement
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 - * Textiles
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Definitions for circular procurement

Procurement that supports circular economy
(NewForesight, 2014, MVO Nederland, 2015)

Procurement that stimulates and creates demand for goods that contribute to the circular economy
(Green Deal, Circular Procurement, 2013)

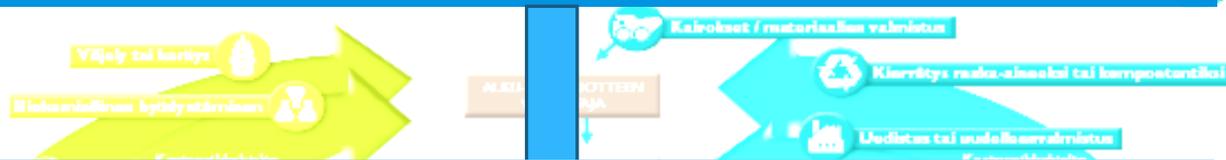
Procurement with no negative external impacts or waste
(NewForesight, 2014)

Procurement or recycled / reused products and parts with no harmful substances
(NewForesight, 2014)



Circular Procurement closes the loop by:

Maintaining value and minimizing the value destruction



Maximizing the cycling of products and raw materials



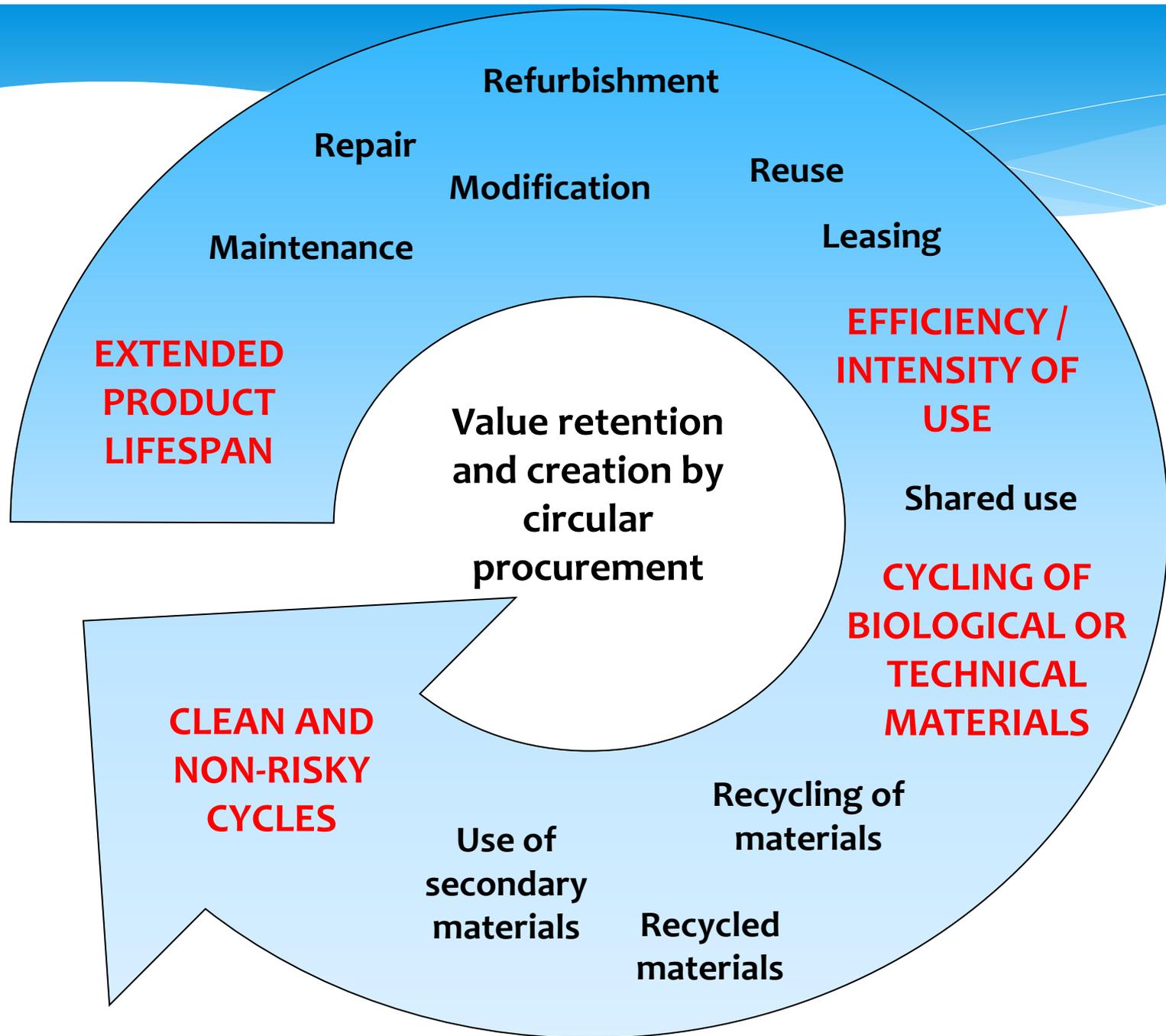
Minimizing harmful substances

Promoting new business models related to circular economy

Circular public procurement:

Procurement of competitively priced products, services or systems that lead to extended lifespan, value retention and/or remarkably improved and non-risky cycling of biological or technical materials, compared to other solutions for a similar purpose in the market

Circular procurement is a part of green and/or sustainable procurement focusing on closed loops and efficient and non-risky cycling of materials



FOUR APPROACHES TO CIRCULAR PUBLIC PROCUREMENT

Procurement including GPP based "circular" criteria

Improved products and services are procured by adding more GPP and circular criteria to the tender competition:

- Recyclability
- Share of recycled materials
- Reuse
- Packaging material
- etc.



Examples:

- Packages
- Paper products
- ICT devices
- Furniture

Procurement of new "circular" products and materials

New products and materials are procured and/or developed by innovative public procurement:

- Products that are significantly better in terms of recyclability, share of recycled materials, long lifespan, disassembly



Examples:

- Building components of recycled material
- Textiles made of recycled material

Procurement of services and new business concepts

Product - service systems are procured and concepts that promote circular aspects are applied:

- Leasing concept
- Buy per use
- Shared use
- Buying and selling back



Examples:

- Buying light instead of lamps
- Leasing furniture instead of buying it

Procurement promoting circular ecosystems

Investments are made that stimulate the development of "circular ecosystems"

- Develop or support closed loops
- Create networks and alliances
- "Waste as material"



Examples:

- Buses running by locally produced biogas
- Construction projects with closed material loops

Better quality products



New products



Service concepts



Circular ecosystems

Elements of circular procurement 1-2

1. Extended product lifespan is focused on in the procurement

- * Reuse of products, parts or materials is required
- * Long guarantee is required or the length of guarantee is awarded
- * Availability of spare parts is required (after the guarantee)

2. Efficiency and/or intensity of use is preferred

- * Shared use is procured or supported, i.e., car sharing
- * Leasing concept is used

Elements of circular procurement 3

3. Cycles of biological or technical materials are focused on in the procurement process

- * Requirements are presented for using recycled materials in the product or certain fraction
- * Requirement is presented for recycled packaging
- * Requirements are presented for utilizing (nearby) secondary material flows or by-products
- * Requirements are presented for recyclability of the products, parts or fractions
- * Requirements are presented for recyclability of packages (regard to materials to which a recycling system exists)
- * The European waste hierarchy (favour material recycling over energy recovery) is supported in the procurement

Elements of circular procurement 4

4. Clean and non-risky cycles are paid attention to in the procurement process

- * Requirements for the use of non-toxic chemicals are presented
- * Requirements for the safe disposal of materials or parts are presented

Certain tools can be used in the procurement process to address circular elements

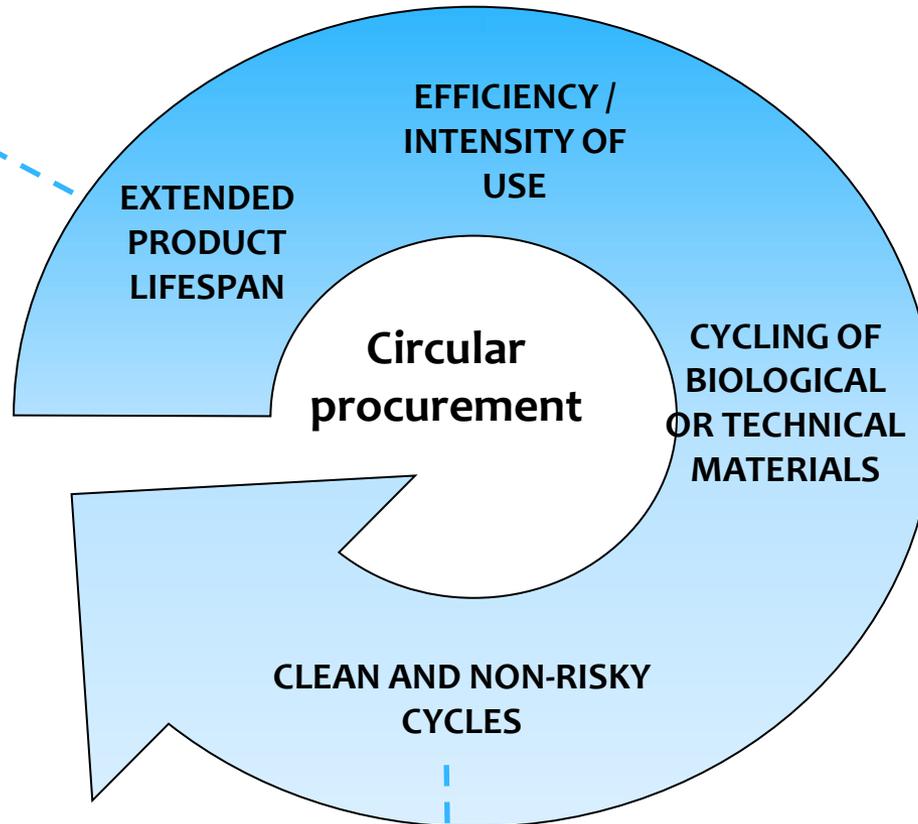
1. Life cycle costing (LCC) is used as a basis for cost calculation
2. Performance based procurement is used in target setting and description of subject matter
3. Eco-label criteria or Green Public Procurement (GPP) criteria that support recycling, reuse, recyclability, non-toxicity, etc., are used
4. Eco-design is paid attention to

How is efficiency or intensity of use improved through procurement? For example, concept of shared use, etc.

How is life extension taken into account?
What kinds of requirements

e.g., for:

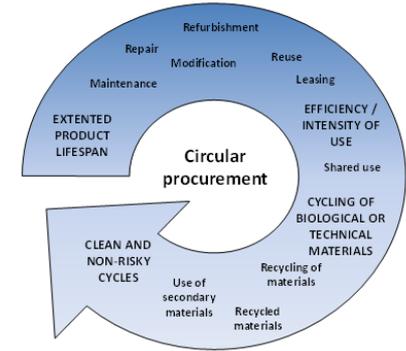
- Maintenance
- Guarantee
- Refurbishment
- Repair
- Modification
- Reuse/leasing



- How is cycling of materials taken into account in the procurement process? For example: recycling of materials is required, use of recycled materials is required, use of secondary materials is allowed, etc.
- What kinds of criteria are used?
- What kinds of contract terms are used?

How are non-risky cycles and materials taken into account?

Cases



- * Reuse of bricks for two schools
- * Environmental criteria for building and construction
- * Public transportation (alternative / biofuels)
- * Sustainable waste collection and transport
- * Waste water sludge treatment
- * Developing processes for resource efficient food and catering services

Reuse of bricks for two schools

Procurement authority: City of Copenhagen

Subject for procurement: Buildings for extension of 2 schools



Procurement procedure: Open public procurement procedure with specification of the type of bricks to be used in the new buildings

Type of criteria used: The tender documents specified that the bricks used for the outer wall should be reused bricks or some with similar appearance (hand made appearance).

Impact on circular procurement and / or economy: The strict requirements for the appearance of bricks will ensure reuse of bricks from demolition activities and thereby reduce the emission of GHG with 0.5 kg CO₂ eq per brick.

Multilocker waste collection system

Procurement authority: East-Uusimaa, Porvoo Finland

Subject for procurement: Multilocker waste collection system, in which the mixed waste bin was re-placed by a waste bin with four lockers.



Procurement procedure: Started by a pilot project from which information from the market was gained. Open procedure for the actual service.

Impact on circular procurement: Significant savings were gained due to more efficient recycling rates. The collected amount of recycled waste doubled compared to ordinary waste collection system (mixed waste and bring sites). The CO₂ emissions of transportation were not significantly reduced because the service did not cover all households in the area, only the ones who voluntarily ordered it. Therefore there were two parallel collection systems working in the area.

PUBLIC TRANSPORTATION

Procurement authority: Kalmar länstrafik, Sweden

Subject for procurement: All types of public transportation including city and regional transport modes, and specific service transportation



Procurement procedure: Negotiated procedure

Type of criteria used: Certified environmental and work environment management systems, a gradual reduction of emissions of NOx and particles during the contract period, noise limitations, **requirements on energy efficiency, use of biofuels and electricity**, follow-up procedures.

Impact on circular procurement and / or economy: Strict requirements and follow-up procedures for exchanging fossil fuels with different types of biofuels (biogas, sustainable synthetic diesel, "green electricity, RME and ethanol) including electricity simulating the generation these fuels from local activities and manufacturing.

WASTE COLLECTION AND TRANSPORT

Procurement authority: VA SYD, Malmö, Sweden



Subject for procurement: Collection and transportation of household waste in an efficient and environmentally sound manner

Procurement procedure: An open procurement procedure

Type of criteria used: Requirements for collecting different waste fractions, certified environmental and work environment management systems, stimulate ECO-driving, parking in warm garages to avoid "cold-starting" of vehicles and other equipment.

Impact on circular procurement and/ or economy: Strict requirements for collecting different types of waste in separate containers for further activities of VA SYD which will secure the further handling of the waste for material and energy recovery in a proper context according to the intent of a circular economy.

Waste water sludge treatment

Procurement authority: Helsinki Region Environmental Services Authority HSY

Subject for procurement: procurement of 4 – 5 pilots of new technologies, which will be tested on their site. The objective is to test and evaluate new methods of treating and utilizing digested sewage sludge and other biomasses at their waste treatment center in Espoo.



Procurement procedure: Negotiations

Type of criteria used: The solutions suggested for testing must comply with the European waste hierarchy, and thus favor nutrient and material recycling over energy recovery. The procurer is interested especially in methods that produce fertilizers or biochar.

Impact on circular procurement: Improved nutrient and material recycling, new technology development

Service for biowaste and sewage sludge treatment

Procurement authority: City of Porvoo. The procurement was undertaken as a joint procurement of several waterworks facilities and biowaste management facilities.

Subject for procurement: The circular aspect of the procurement was to improve recycling and reuse of phosphorus and nitrogen through the treatment service. The annual volume of the service was 24 500 tons of sewage sludge and 6 000 tons of biowaste.

Procurement procedure: Negotiation

Type of criteria used: Cycling of nutrients was included already in the definition and objectives of the procurement. Several technical criteria were stipulated to the final call for tender, stating that minimum of 80 % of the nitrogen delivered to the treatment plant must be directed to be used as a fertilizer product or industry chemical, and only 20 % may end up to the local waste water treatment plant.

Impact on circular procurement: Contributes to circular economy especially in terms of cycling of materials as well as confirming clean and non-risky cycles.

Biogas buses in public transportation

Procurement authority: City of Vaasa, Finland

Subject for procurement: Biogas buses

Procurement procedure: Open procedure



Type of criteria used: Sustainability criteria were set for the vehicle fleet, including for example: fuel consumption must remain on a level that was stipulated in the tender. Vehicles must fulfil Euro 6 norm. Eco-driving system was required, and service program for the fleet was requested. Fuel consumption and maintenance program were weighted 60 %.

Impact on circular procurement: a totally new business and delivery network was developed including the more efficient utilization of waste and biogas production from local waste. The market for biogas was also aimed to be expanded to private markets. Expected savings for the biogas buses was 1 000 t CO₂ per year.

Developing processes for resource efficient food and catering services

Procurement authority: Sodankylä, Finland

Subject: Developing the central kitchen and catering through careful planning and new technology

Focus areas:

- Increasing the amount of locally produced food
- Deliveries of food raw materials instead of semifinished products – possibilities to freeze
- Packaging and logistics is paid attention to
- Recipes and seasonal food is paid attention to

Impact on circular procurement and/or economy: Less waste food, less wasted resources, more efficient food chains, flexibility on resource use, less packaging, better handling of storages.



Strategy to reduce consumption in Oslo

Focus areas:

The aim is to reduce the municipal material consumption and to increase the Oslo Citizens' awareness of own material consumption. The city has developed measures to improve sharing, minimize consumption through public procurement, more venues for reuse, recycling and less waste of food.

Main ideas for public procurement include better identification of “need” instead of a solution, evaluation of quality and long-term perspective, identification of material re-use instead of disposal and criteria for minimizing packaging.

An example of implementing the strategy is the program “Re-using with care” which is a collaboration agreement on re-usage of furniture and ICT-equipment meant for all agencies within the municipality. The positive outcome has been the emerge of two different Employment Training Providers (ETP) and promotion of second hand use, less waste and less consumption.

Potential sectors for circular procurement - High procurement volume and possibilities for circular solutions

* **Construction**

- * Buildings
- * Roads / infrastructure

* **Furniture**

- * Components made of recycled materials
- * Planning services
- * Life cycle furniture services (leasing)

* **Food and catering**

- * More efficient food chains, reducing disposal of raw materials in the value chain
- * Concepts on how to reduce the disposal of food
- * New protein sources

* **Local energy production and biobased energy**

- * Public transportation based on biofuels

* **Textiles**

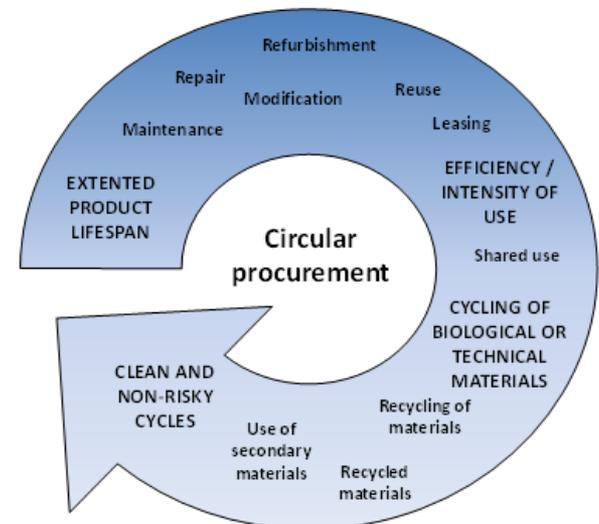
- * Use of recycled (and recyclable) material

* **Waste management**

- * Multilocker collection system
- * Buying resource efficiency instead of waste handling

* **Waste water treatment**

- * Efficient and clean cycling of nutrients



Suggestions for Nordic way forward

- * **Development of service concepts** to support extended life of products and materials
 - * Repair and modification business, markets for secondary use
- * **Need for market dialogue** between procurers and business and **objective information** about possibilities of new and improved products, materials and business concepts
- * Providing **pilots and experiments** for new “circular” products by public procurement - > fostering the development of new products and diffusion of innovations
- * **Developing the supporting conditions** for “circular products”, for example the recycling systems and logistics for different materials
- * Making use of **the new public procurement law**
 - * Potential of **innovation partnership** in developing new products and solutions
 - * Potential of **life cycle costing** in taking secondary materials, reuse and recyclability of materials into account in public procurement while making also the economic benefits of circular procurement visible