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"FUNDAMENTALS OF CIRCULAR ECONOMY"

PART 1

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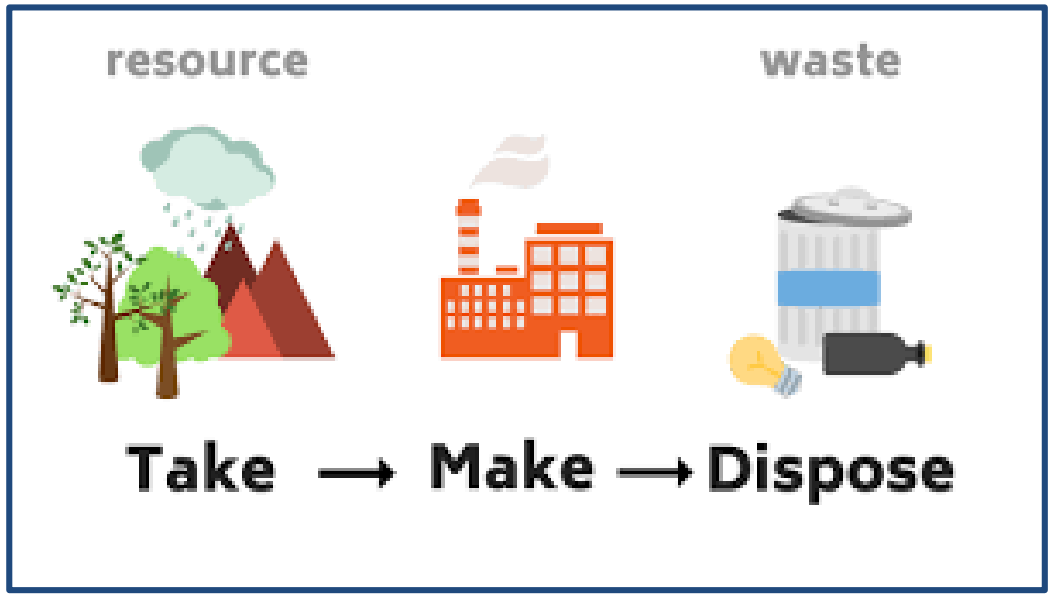
CONCEPT of Circular Economy

The current **LINEAR ECONOMY** "take, make, discard" is a reflection of a time when resources, energy and credit were believed to be unlimited and easy to obtain and there was no awareness of the serious environmental consequences.

The warning discourse of many ecologists was denied or minimized



ASPECTS of Circular Economy

intersection of environmental and economic aspects.

ENVIRONMENTAL ASPECTS: The linear system of our economy (extraction, manufacturing, utilization and disposal) has reached its limits.

Depletion of a series of natural resources and fossil fuels

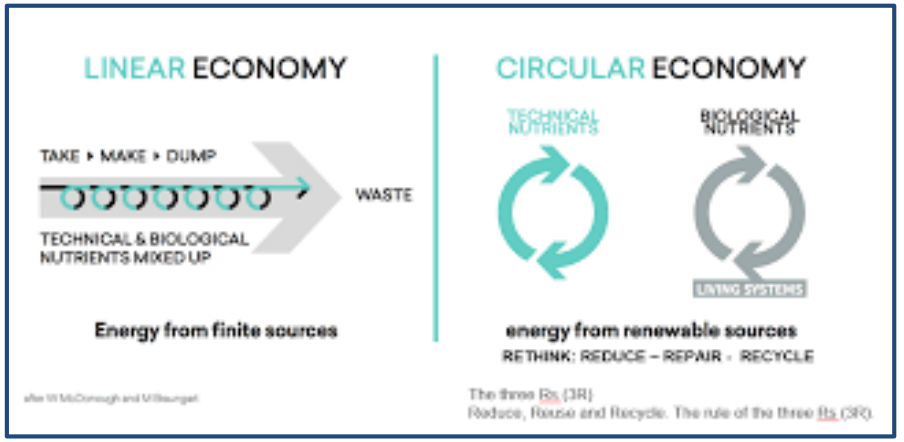
Therefore, the circular economy proposes a NEW MODEL OF SOCIETY that uses and optimizes stocks and flows of materials, energy and waste and its objective is to

THE EFFICIENCY OF THE USE OF RESOURCES

CONCEPT of Circular Economy

The **CIRCULAR ECONOMY** is an economic concept that is included in the framework of sustainable development and whose objective is:
- the production of goods and services while
- reduces the consumption and waste of raw materials, water and energy sources.

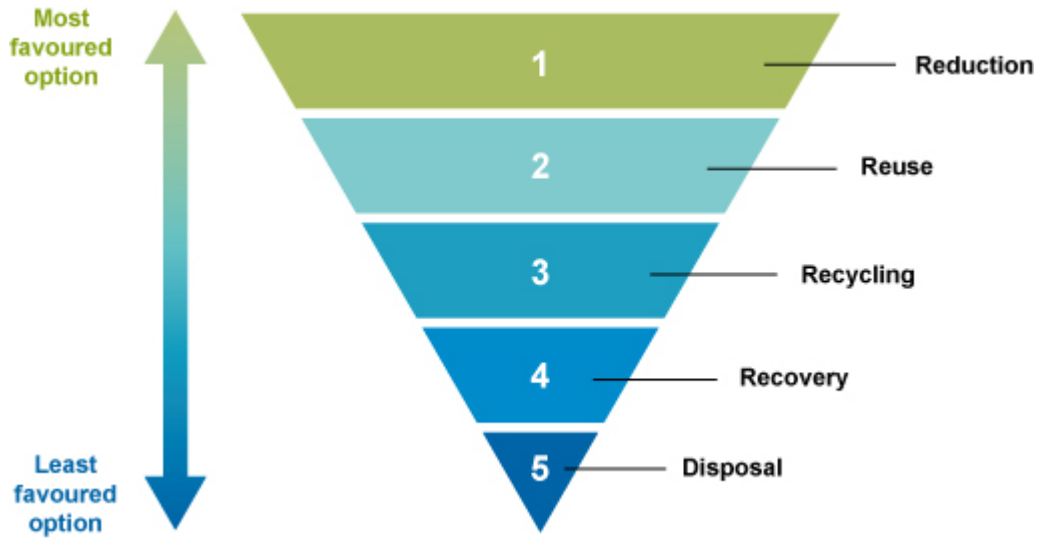
the principle of "**closing the life cycle**" of products, services, waste, materials, water and energy.



REGULATIONS of Circular Economy

REGULATIONS 2008-2015
Directive 2008/98/CE about waste

WASTE HIERARCHY
State Plan Waste Management Framework (PEMAR) 2016-2022



17 WASTE FLOWS:

1. Domestic and commercial waste
2. Containers and packaging waste
3. Waste electrical and electronic equipment
4. Vehicles at the end of their useful life
5. Tires at the end of their useful life (tires out of use)
6. Used oils
7. Batteries and batteries
8. Construction and demolition waste
9. Sludge from wastewater treatment
10. PCB's and PCT's
11. Agricultural residues
12. Waste from extractive industries
13. Industrial waste (without specific legislation)
14. Ships and vessels at the end of their useful Life
15. Sanitary waste
16. Waste deposits in landfills
17. Contaminated floors

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Reuse

reuse certain waste or certain parts of it, which can still work for the development of new products (without transformation)

PEMAR: 50% preparation for 2020 **r**euse and **r**ecycling

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recycling

take advantage of the materials found in the waste

Recycling Plants-currently model

VIDEO: Recycling plant (SUR DE EUROPA-Cadiz)
https://www.youtube.com/watch?v=RQNnZbJra3U
https://www.youtube.com/watch?v=augy9GDzD-c

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Valorization (Incineration)

Energetically use waste that can not be recycled:

HEAT CAPACITY (PNEUMATICS OUT OF USE)

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Landfill disposal

Reduction of landfill disposal to a maximum of 10% of all waste by 2030;

- **a prohibition on the landfilling of waste collected separately**
- **decrease in landfill use**

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PREVENTION

- Eco-conception — New !!
- Industrial and territorial ecology — New !!
- Economy of "functionality" — New !!
- Second use: reintroduce into the market — New !!
- Reuse: discarded materials
- Repair: second life — New !!

Recycling: separate and treat to take advantage

Valorization: energy use

Disposal: sanitary landfills controlled

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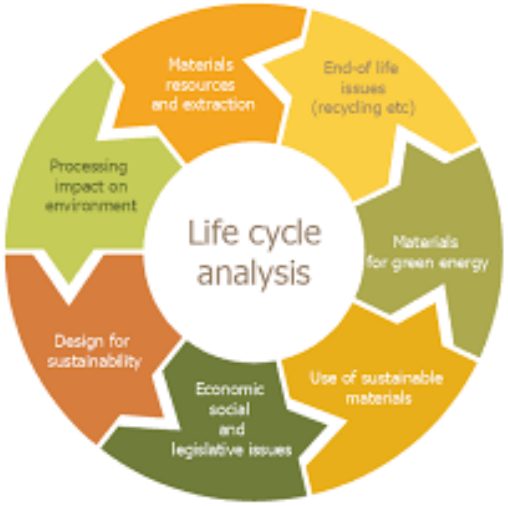
PREVENTION

Eco-conception: ecodesign

considers the effects of the environment, the life cycle, the product and the integration from its conception and design stage.



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PREVENTION

Eco-conception: ecodesign

considers the effects of the environment, the life cycle, the product and the integration from its conception and design stage. It extends the useful life

Eco-diseño para los estilos de vida contemporáneos

Este producto está diseñado y fabricado en Alemania por el estudio ROOM IN A BOX, (Berlin) Desde su lanzamiento en 2014, han vendido ya más de **2000 unidades** en toda Europa.

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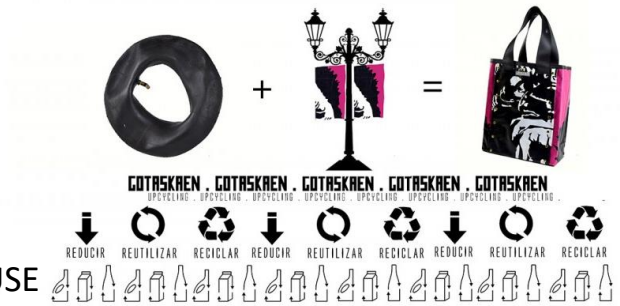
http://colectivogotaskaen.es/



PNEUMATICS OUT OF USE

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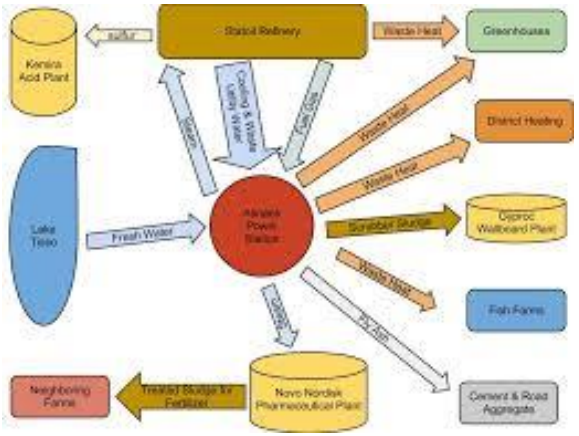
"Industrial Symbiosis" and "Synergy of Subproducts":
exchange of resources between industrial companies

Ecología industrial y territorial: simbiosis industrial.

PART 3.

Kalundborg (Dinamarca)



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PREVENTION

economy of "functionality"

privilege use over possession,
the sale of a service versus a good

example. Photocopiers - interest of the manufacturer in its robustness

programmed obsolescence

NEED:
To change from an industry of perishable goods to a durable goods industry, from an industry with a high consumption of raw materials to a more sustainable industry.

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PREVENCION

Second Use
Est. 1994

reintroduce within the economic circuit those products that do not correspond to the initial needs of consumers.

Repair

find a second life to the spoiled product

PEMAR: 2% of preparation for RAEE 2020 repair

- 3D printers to manufacture components for repair of appliances that have been out of market

ADVANTAGES of Circular Economy

BENEFITS OF ENVIRONMENTAL CHARACTER:

- Human health
- Atmosphere
- Water
- Ground
- Weather

ECONOMIC BENEFITS:

- ✓ Associated with business activity associated with waste
- ✓ Increase in the availability of raw materials in safe conditions

SOCIAL BENEFITS:

- ❖ Creation of employment (promotion of the preparation for reuse and recycling)

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