



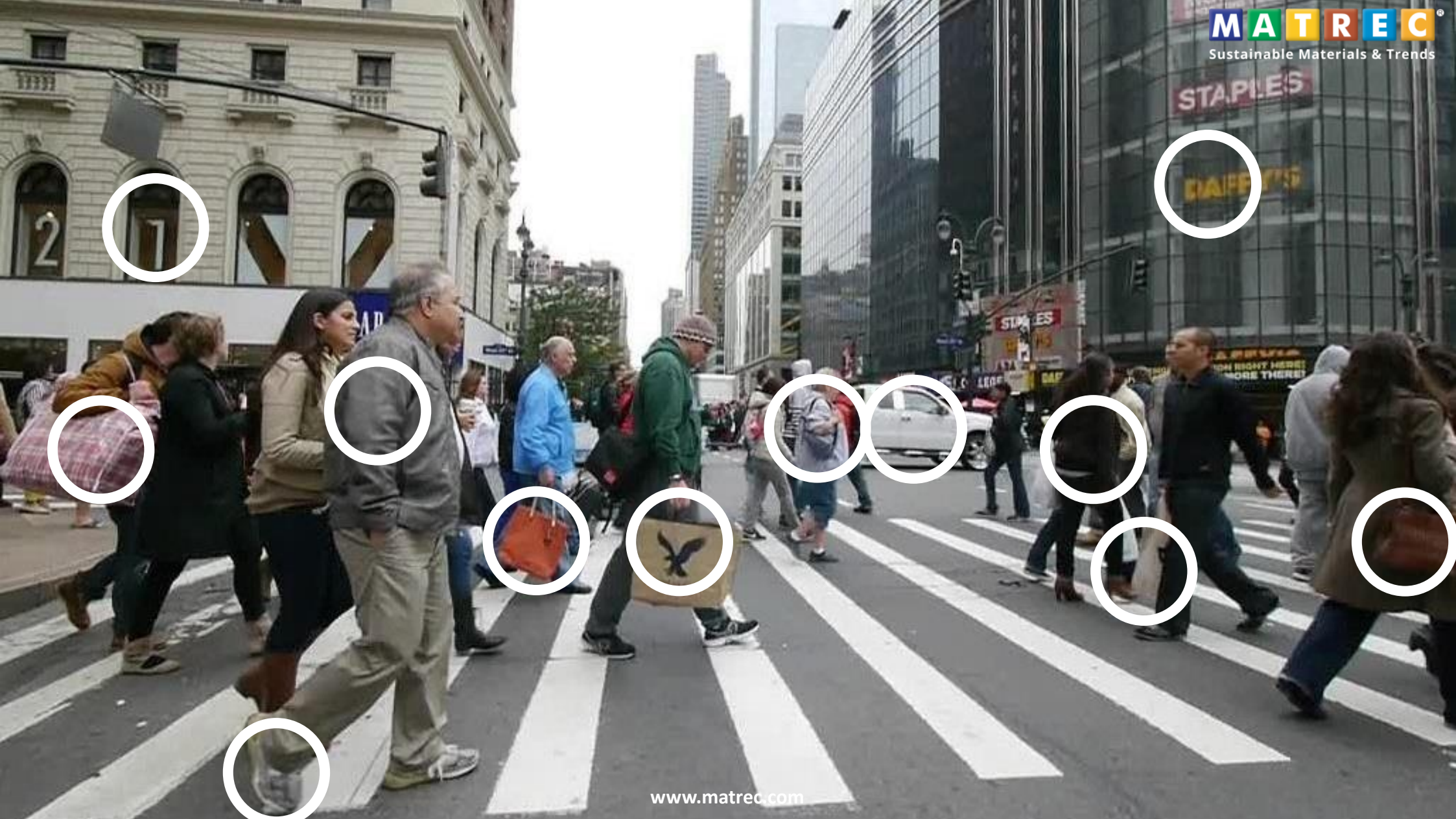
Sustainable Materials & Trends

# From materials to circular economy measurement of products

November 18<sup>th</sup>

Arch. Marco Capellini









Compare Please select min 2 and max 3 materials The research found: 1866 materials

**RPLA2294**  
Plastic



Material made of 100% post-consumer recycled PET. Through a mechanical process, the plastic bottles are transformed into a new yarn, without the use of chemicals. It contains an made marker put during the spinning process, that allows to detect recycled material.

MATREC Score

**NCOR2293**  
Cork



Material made of agglomerated solid blond cork. Characterised by a wide range of shapes, it is used as a customizable acoustic wall covering based on traditional Scandinavian architecture.

MATREC Score


**RPAP2292**  
Paper



Material obtained by recycled cellulose fibres fixed with plaster, compacted with acrylic resins and other substances always strictly classified as non-hazardous. It allows the creation of artifacts or coatings perfectly similar to the cast concrete with the same ease.

MATREC Score


**NBAM2291**  
Bamboo



Material made entirely of solid bamboo, obtained by pressing the bamboo strips horizontally for the wide knot version, vertically for the narrow knot version, or by compression. It is used in the construction of residential and commercial flooring.

MATREC Score

**RPAP2290**  
Paper



Material made of 100% post-consumer recycled paper fibres. It is used in the production of packaging in the food packaging industry.

MATREC Score

**RPLA2289**  
Plastic



Material made of 100% recycled HDPE made from shredded waste material. The material is usually made with industrial waste material but is also with collected material from any other field including household waste. It melts at minimum temperatures so to have the

MATREC Score

**RWOO2288**  
Wood



Material made of recycled wood made from used in packaging and pruning from the agricultural sector, from maintenance services in woods, parks, gardens and from separate waste collection in the recycling depots. The raw material is processed in a system that

MATREC Score


**BPL2287**  
Bioplastics



Material made of bio-based, and compostable polymer resin compounds made with modified PLA (polylactic acid). It is specifically engineered for injection molding for applications where high-heat performance and dimensional stability are critical such as

MATREC Score

**NHEM2286**  
Hemp



Material made from hemp felt and transformed into a rigid panel. It is used in the production of furniture and furnishing accessories.

MATREC Score


**RMET2285**  
Metals



Lightweight panel made of 100% recycled aluminum foam and recyclable. It is available with one or both sides open, in order to filter the light while ensuring brightness. It is an ideal solution for construction and communication projects.

MATREC Score

**RNPLABAM2284**  
Plastic, Bamboo



Fabric made of 80% post-consumer recycled polyester and 14% bamboo viscose. It is used in the production of upholstery.

MATREC Score


**ROTH2283**  
Others



Material derived from microbial cellulose obtained from organic, agricultural and industrial liquid wastes, biomass waste products from the beer, wine and liquid food industries. The cellulose, through a patented process with low environmental impact, is then transformed

MATREC Score


**ROTH2282**  
Others



Material made of post-industrial recycled cereals pulp. The patented production process uses organic agricultural residuals generated by the cereals industry. The aim is to alleviate the dependency of traditional wood based products for the paper industry, high

MATREC Score


**RPLA2281**  
Plastic



Material made of recycled acrylic resin, coming from the internal waste from the production of panels. They are ground into small pellets, sort out remnants of metal layers, and press into new panels. It is used in the construction of partition walls.

MATREC Score

**RPLA2280**  
Plastic



Material made of 100% recycled polyethylene made from house waste and material coming from the drying of floor heating systems. It is used temperature it is resistant to heat temperatures and is used in the realization of furniture and fittings.

MATREC Score





Customers

**MATREC**  
Sustainable Materials & Trends



GIORGIO ARMANI



TOMMY  HILFIGER

O bag

Steelcase  Boffi 

ALPI

OVS

 DIADORA

 Tetra Pak  
*protegge la bontà™*

*Coca-Cola* Italia

**3M**



**NIVEA**

 **TIM**

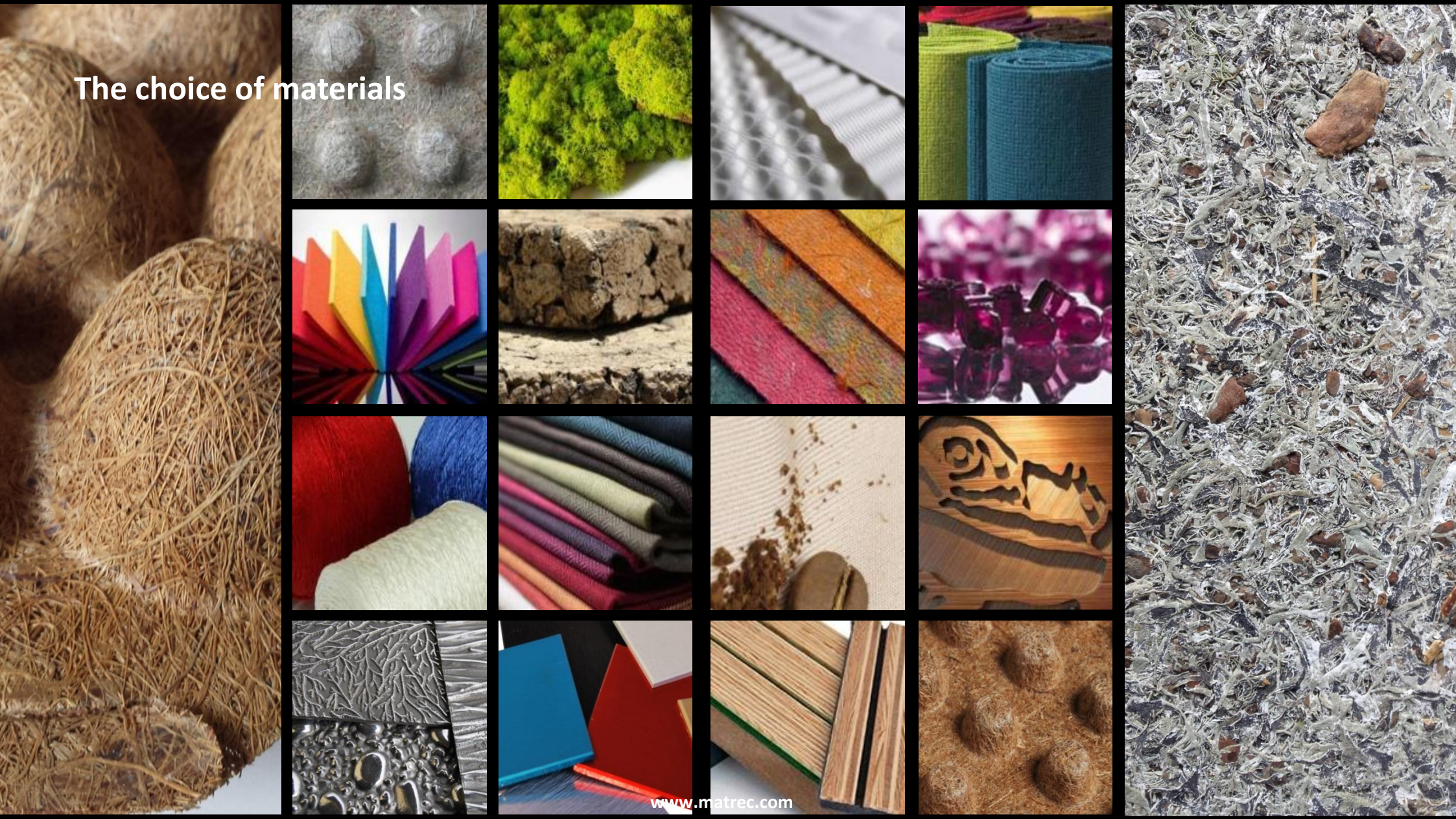
  
ecopneus  
il futuro dei pneumatici fuori uso, oggi

 **LUCART**  
GROUP

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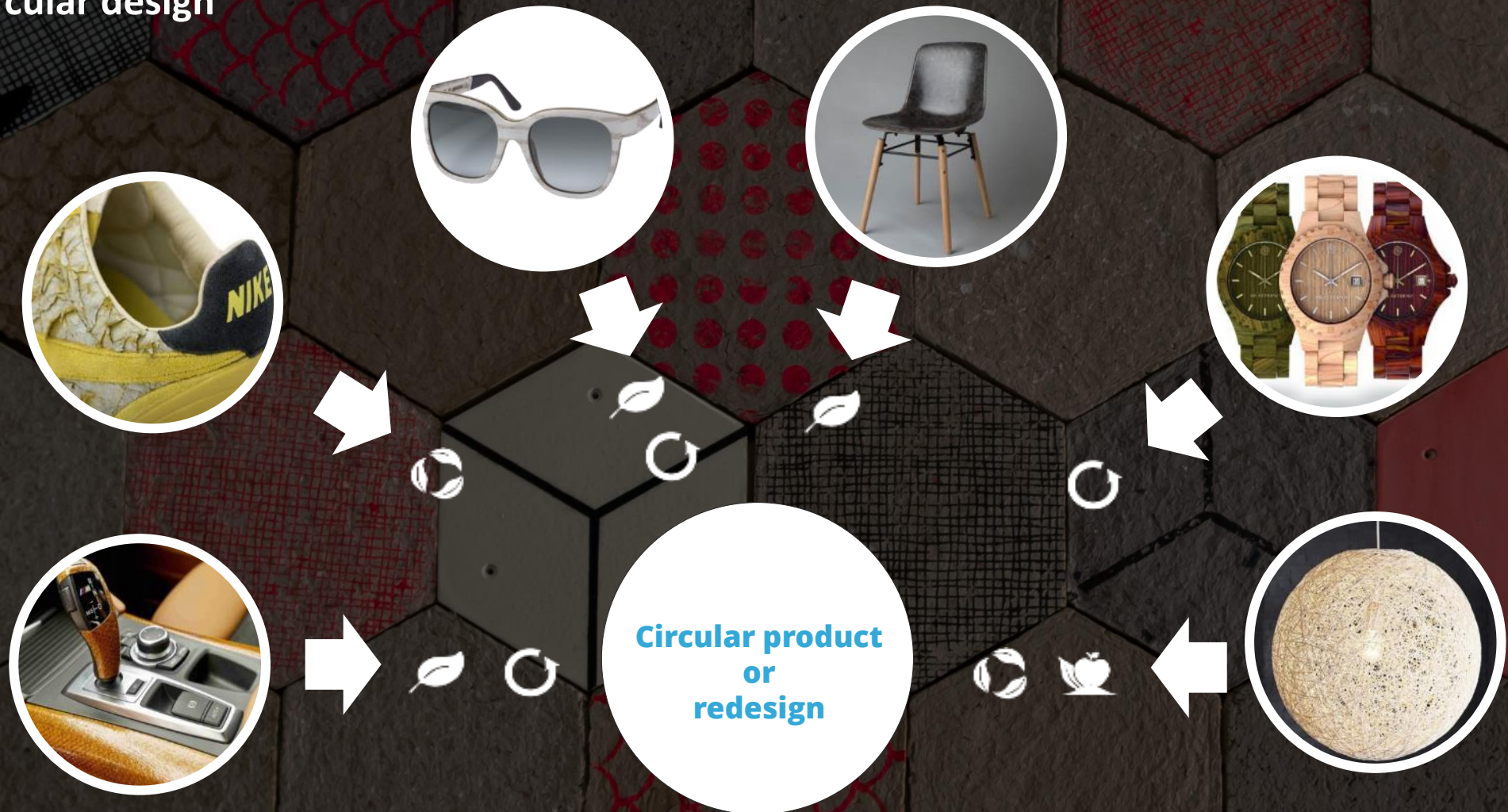


# The choice of materials





## Circular design

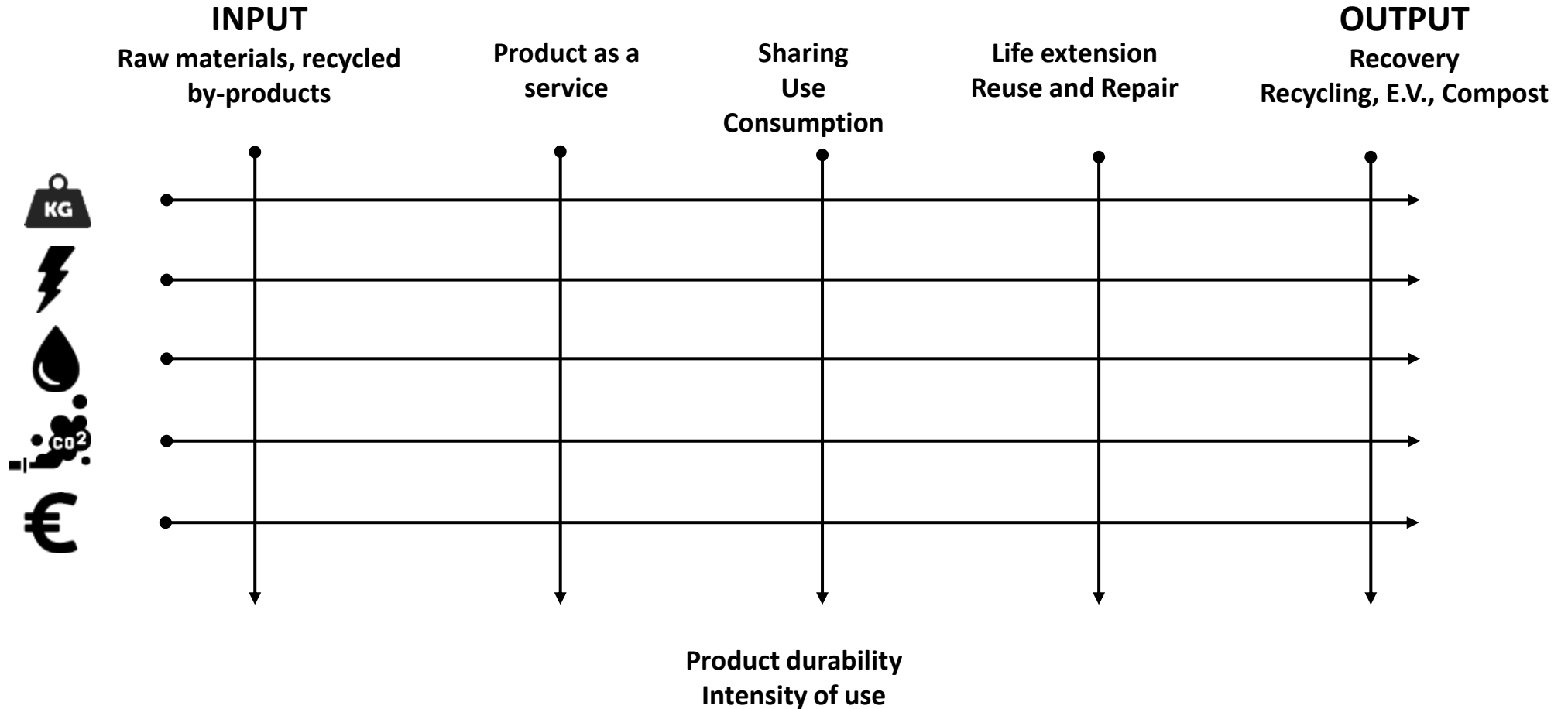




**We can't change what we can't measure**

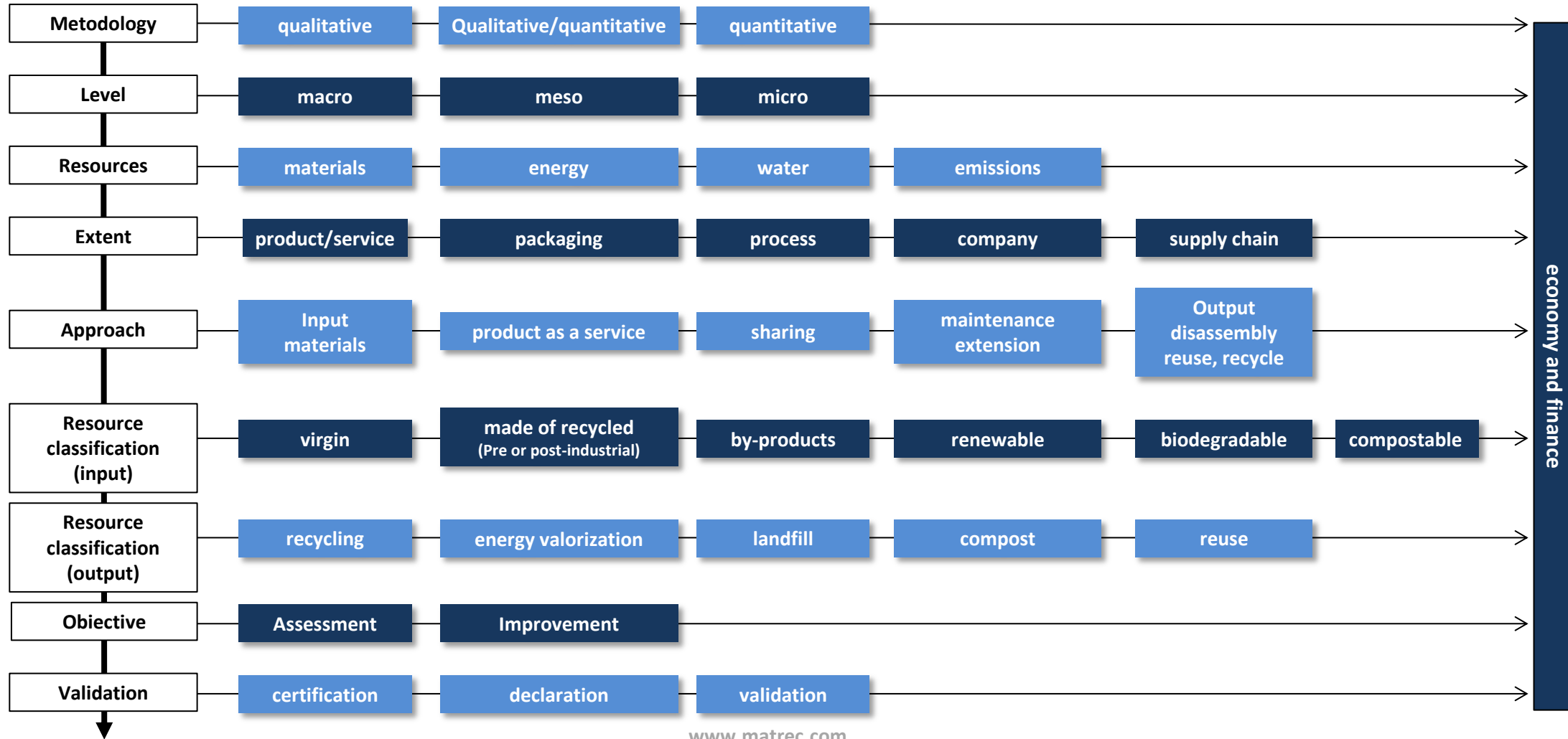


## The pillars of circular economy



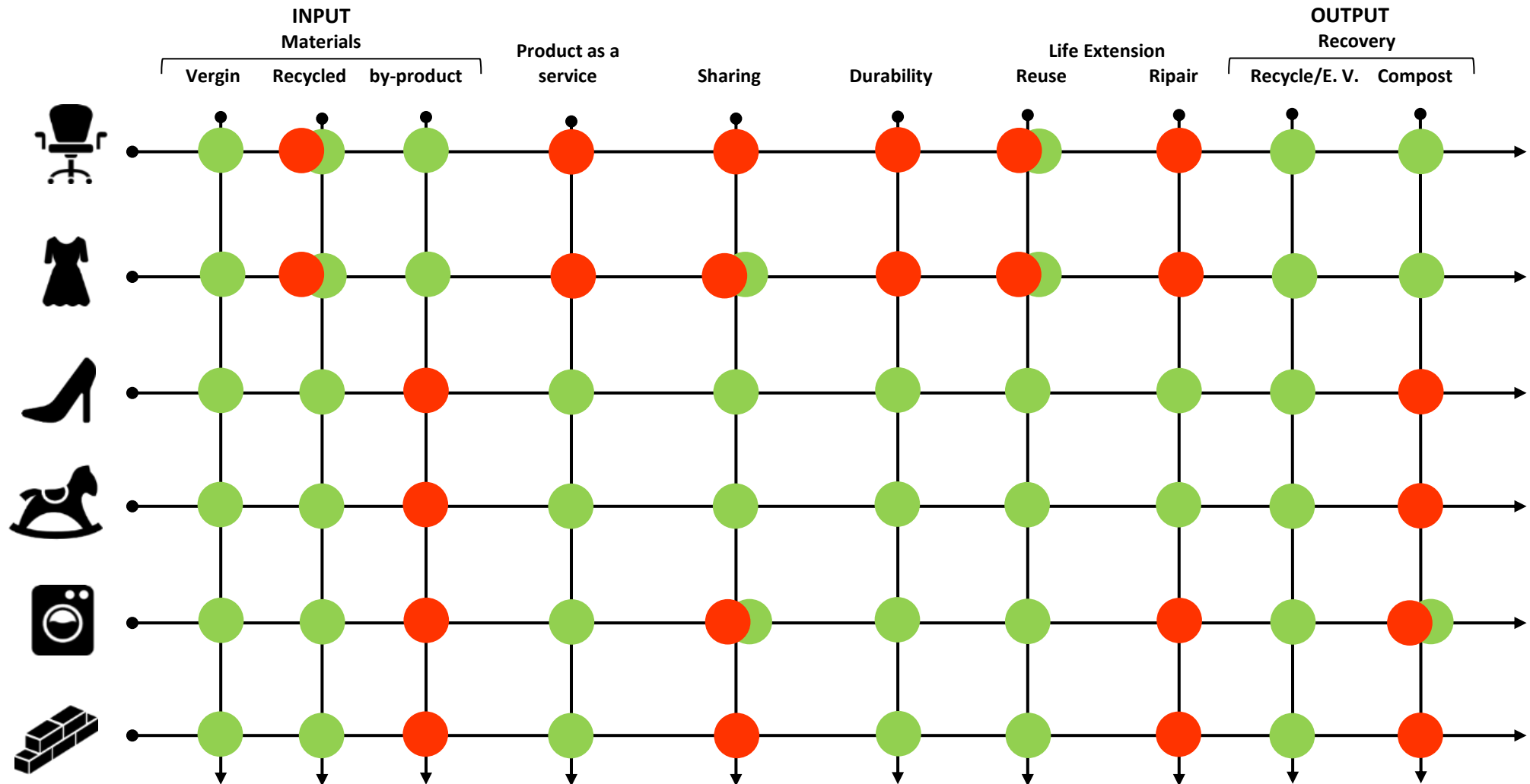


## The roadmap: towards the approach for a measurement metric





## The roadmap: towards the approach for a measurement metric





# From Materials Mapping to Circularity Measurement

## Company Materials Mapping (Material Capital):

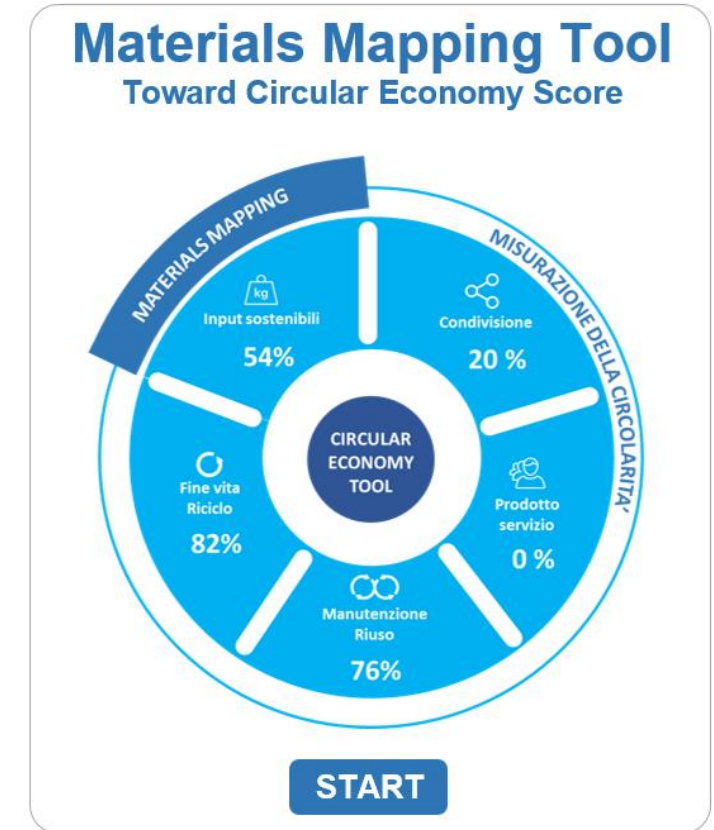
quantification and qualification of the total material resources **purchased** by the company annually for the performance of its activities: products, services and projects.

## Product Materials Mapping:

quantification and qualification of the material resources used for the **production** and **implementation** of individual products, services and projects.

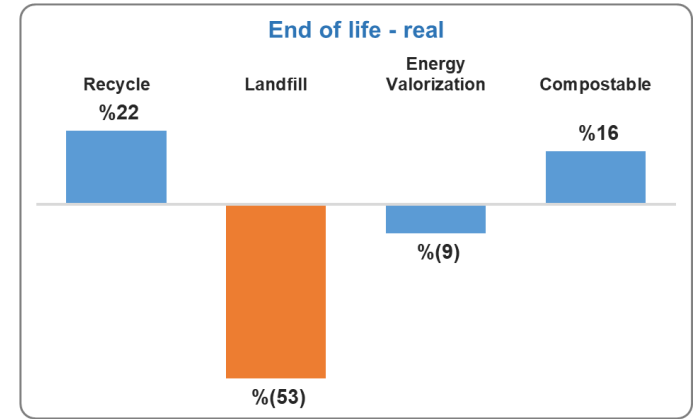
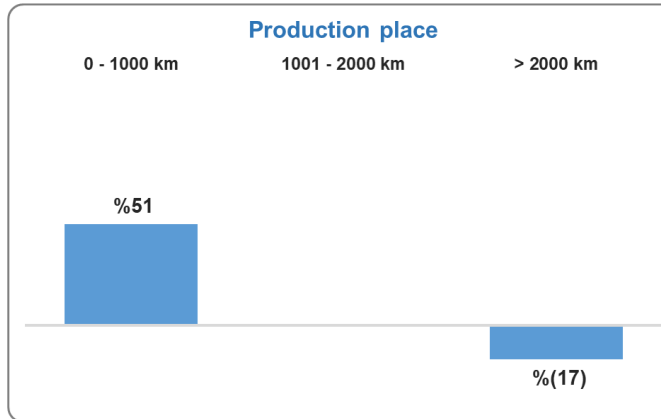
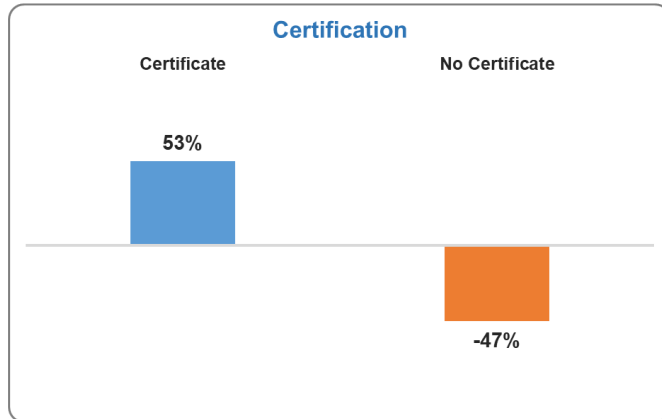
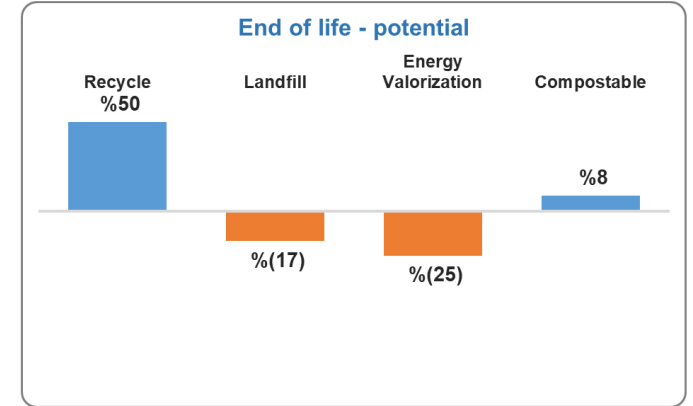
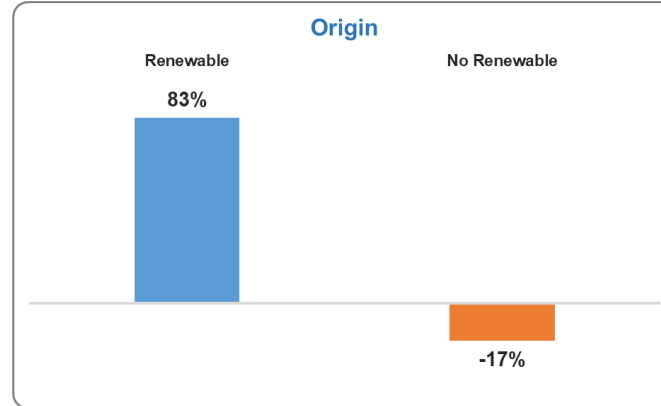
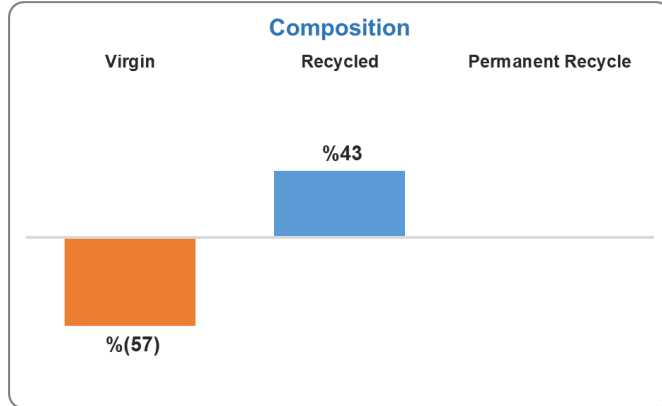
## Circular Economy Performance:

quantification of the resources used in **input and output** considering the entire **life cycle** of individual products, services and projects.



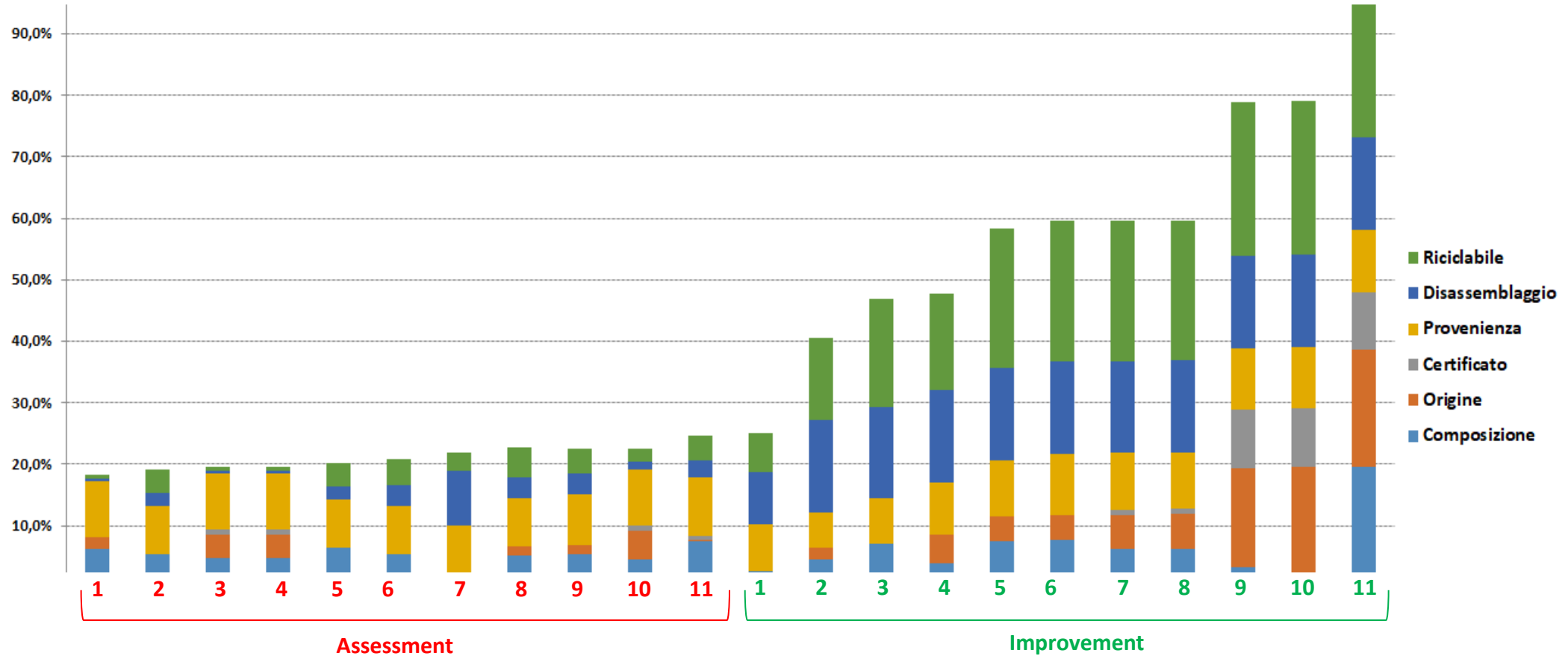
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# Matrec circular approach



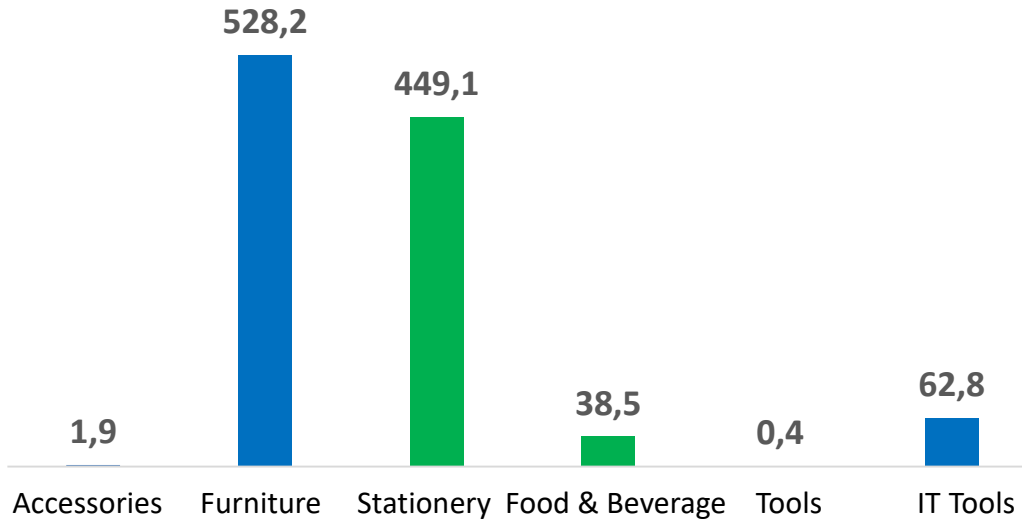


## Material performance indicators

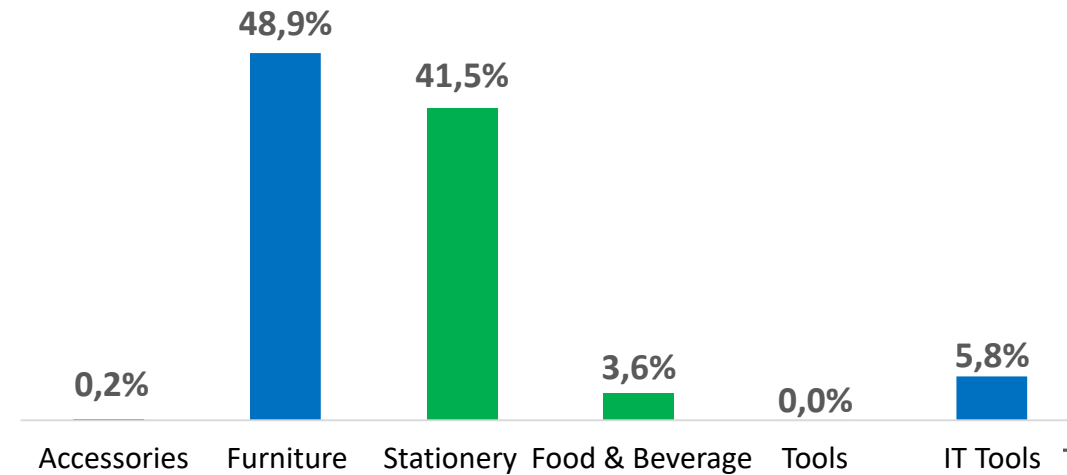


## Offices circularity

Total annual material resources by category- kg



Total annual material resources per employee- %




























































































































In a circular world...

... is it the material that designs the product,  
or  
the product that designs the material?

Show 10 entries

Reporting company	Fiber portfolio								
	Material Change Index	Materials Circularity	Materials SDG	Cotton	Polyester	Nylon	Manmade Cellulosics	Wool	Down
C&A AG	 Level 4 Leading								
Sondaggio completo	4								
Coyuchi, Inc.	 Level 4 Leading								
Sondaggio completo	4								
DECATHLON SA	 Level 4 Leading								
Sondaggio completo	4								
EILEEN FISHER, Inc.	 Level 4 Leading								
Indagine completa	4								
Gruppo H&M	 Level 4 Leading								
Sondaggio completo	4								
IKEA of Sweden AB	 Level 4 Leading								
Full survey	4								
Levi Strauss & Co.	 Level 4 Leading								
Full survey	4								





**Adidas: new running shoe made with 100% thermoplastic polyurethane (TPU).**



**Thank you!**

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***www.matrec.com***