

CIRCULAR ECONOMY E APPARECCHIATURE ELETTRONICHE

**Come i rifiuti elettronici possono diventare una
grande risorsa**

ENRICO BASSI

Ricercatore, Designer e Consulente per l'innovazione



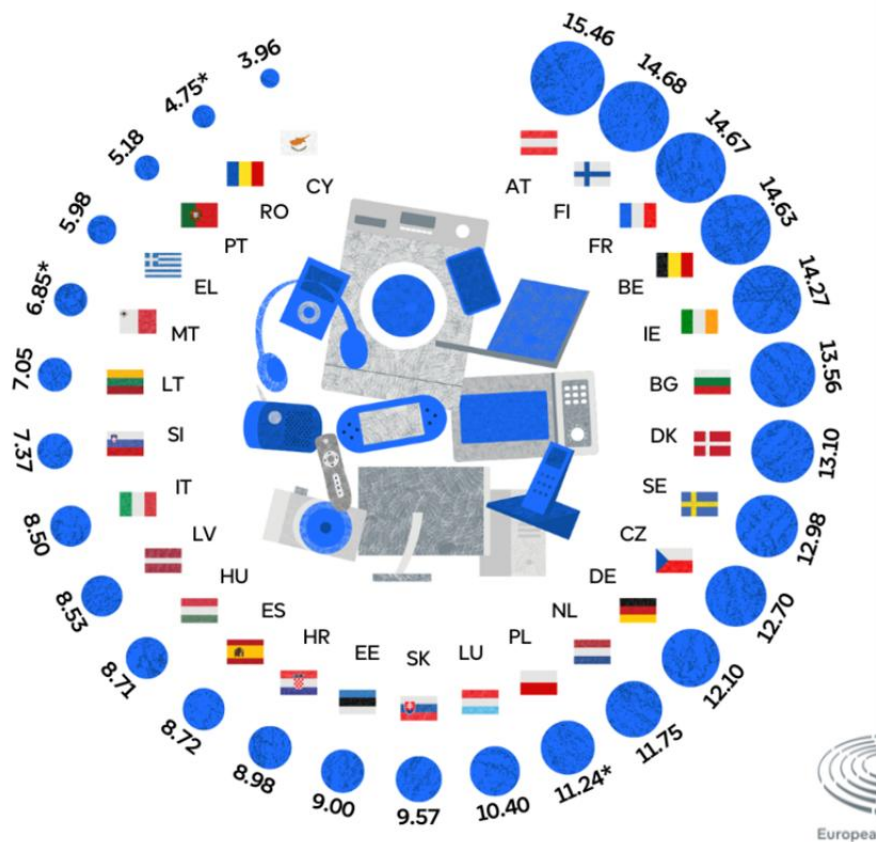
IL TUO DOCENTE

- Ricercatore nell'ambito della sostenibilità
- Consulente aziendale sull'innovazione
- Docente di fabbricazione digitale
- Coordinatore del primo Fab Lab italiano (Fab Lab Italia), di Fab Lab Torino e Fab Lab OpenDot

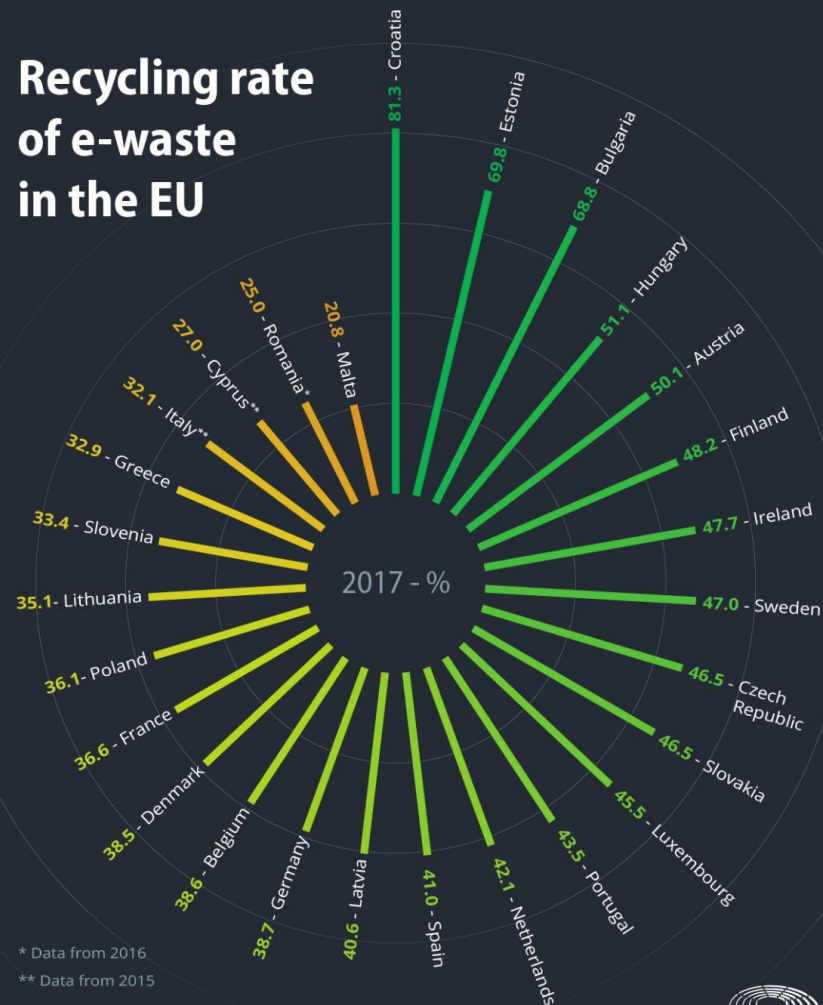
LE APPARECCHIATURE ELETTRICHE E ELETTRONICHE

How much **e-waste** do EU countries collect?

Electric and electronic equipment waste, in kg per inhabitant



Recycling rate of e-waste in the EU



* Data from 2016

** Data from 2015

Source: Eurostat (2020)



RECYCLING RATES OF SMARTPHONE METALS

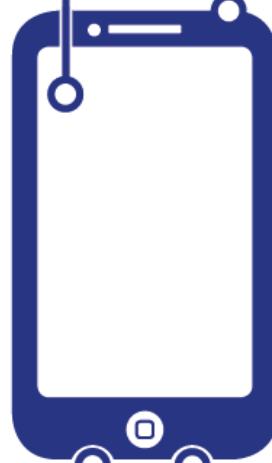
COLOUR KEY: ● < 1% RECYCLE RATE ● 1-10% RECYCLE RATE ● 10-25% RECYCLE RATE ● 25-50% RECYCLE RATE ● > 50% RECYCLE RATE ● NON-METAL (OR RECYCLE RATE UNKNOWN)

SCREEN

TOUCH: INDIUM TIN OXIDE
Used in a transparent film over the phone's screen that conducts electricity. This allows the screen to function as a touch screen. This is the major use of indium.

GLASS: ALUMINA & SILICA
On most phones the glass is aluminosilicate glass, a mix of aluminium oxide & silicon dioxide. It also contains potassium ions which help strengthen it.

COLOURS: RARE EARTH METALS
A variety of rare earth metal-containing compounds are used to help to produce the colours in a smartphone's screen. Some of these compounds are also used to help reduce light penetration into the phone. Many of the 'rare earths' occur commonly in the Earth's crust, but often at levels too low to be economically extracted.



ELECTRONICS

WIRING & MICROELECTRONICS
Copper is used for wiring, and for micro-electrical components along with gold and silver. Tantalum is the major component in micro-capacitors.

MICROPHONES & VIBRATIONS
Nickel is used in the microphone and for electrical connections. Rare earth element alloys are used in magnets in the speaker and microphone, and the vibration unit.

THE SILICON CHIP
Pure silicon is used to manufacture the chip, which is then oxidised to produce non-conducting regions. Other elements are added to allow the chip to conduct electricity.

CONNECTING ELECTRONICS
Tin & lead were used in older solders; newer, lead-free solders use a mix of tin, copper & silver.

WIRING & MICROELECTRONICS
Cu (COPPER), Ag (SILVER), Au (GOLD), Ta (TANTALUM)

MICROPHONES & VIBRATIONS
Ni (NICKEL), Dy (DYSPROSIUM), Pr (PRASEODYMIUM), Tb (TERBIUM), Nd (NEODYMIUM), Gd (GADOLINIUM)

THE SILICON CHIP
Si (SILICON), O (OXYGEN), Sb (ANTIMONY), As (ARSENIC), P (PHOSPHORUS), Ga (GALLIUM)

CONNECTING ELECTRONICS
Sn (TIN), Pb (LEAD)

BATTERY

Most phones use lithium ion batteries, composed of lithium cobalt oxide as a positive electrode and graphite (carbon) as the negative electrode. Sometimes other metals, such as manganese, are used in place of cobalt. The battery casing is often made of aluminium.

Magnesium alloy is used to make some phone cases, whilst many others are made of plastics, which are carbon-based. Plastics will also include flame retardant compounds, some of which contain bromine, whilst nickel can be included to reduce electromagnetic interference.

CASING

CASING
C (CARBON), Mg (MAGNESIUM), Br (BROMINE), Ni (NICKEL)



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GLI ATTORI

AZIENDE

CHIUNQUE FORNISCA UN PRODOTTO O UN SERVIZIO LUNGO LA CATENA

l'attore che può implementare i cambiamenti e accelerarli

PUBBLICA AMMINISTRAZIONE

CHIUNQUE NORMI CIÒ CHE ACCADE LUNGO LA CATENA

chi formalizza le regole e setta gli obiettivi

UTENTI

CHIUNQUE INTERAGISCA CON I PRODOTTI, I SERVIZI O LE NORME LUNGO LA CATENA

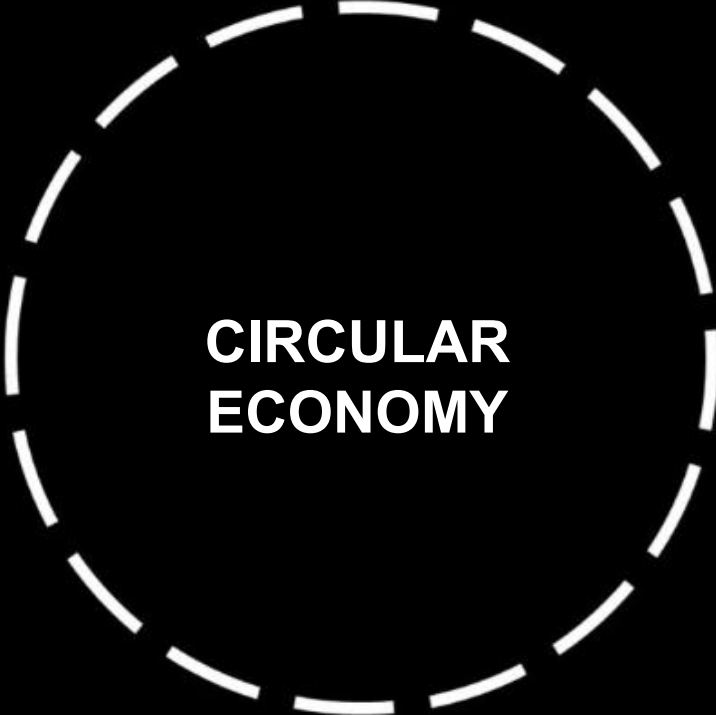
chi interviene attivamente e supporta (o si oppone) al cambiamento

SOSTENIBILITÀ ED ECONOMIA CIRCOLARE



SUSTAINABILITY

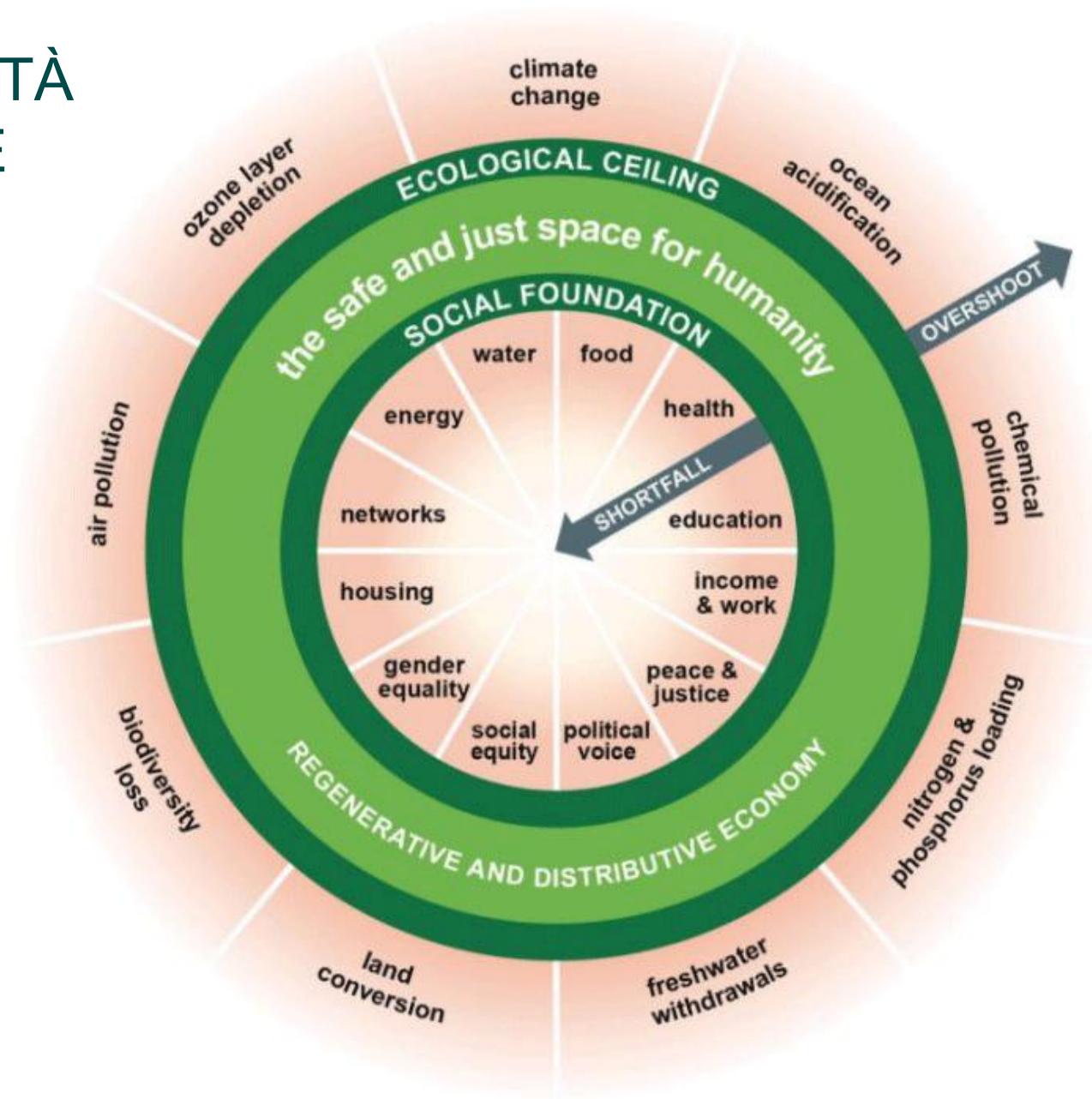
Objective



**CIRCULAR
ECONOMY**

Strategy

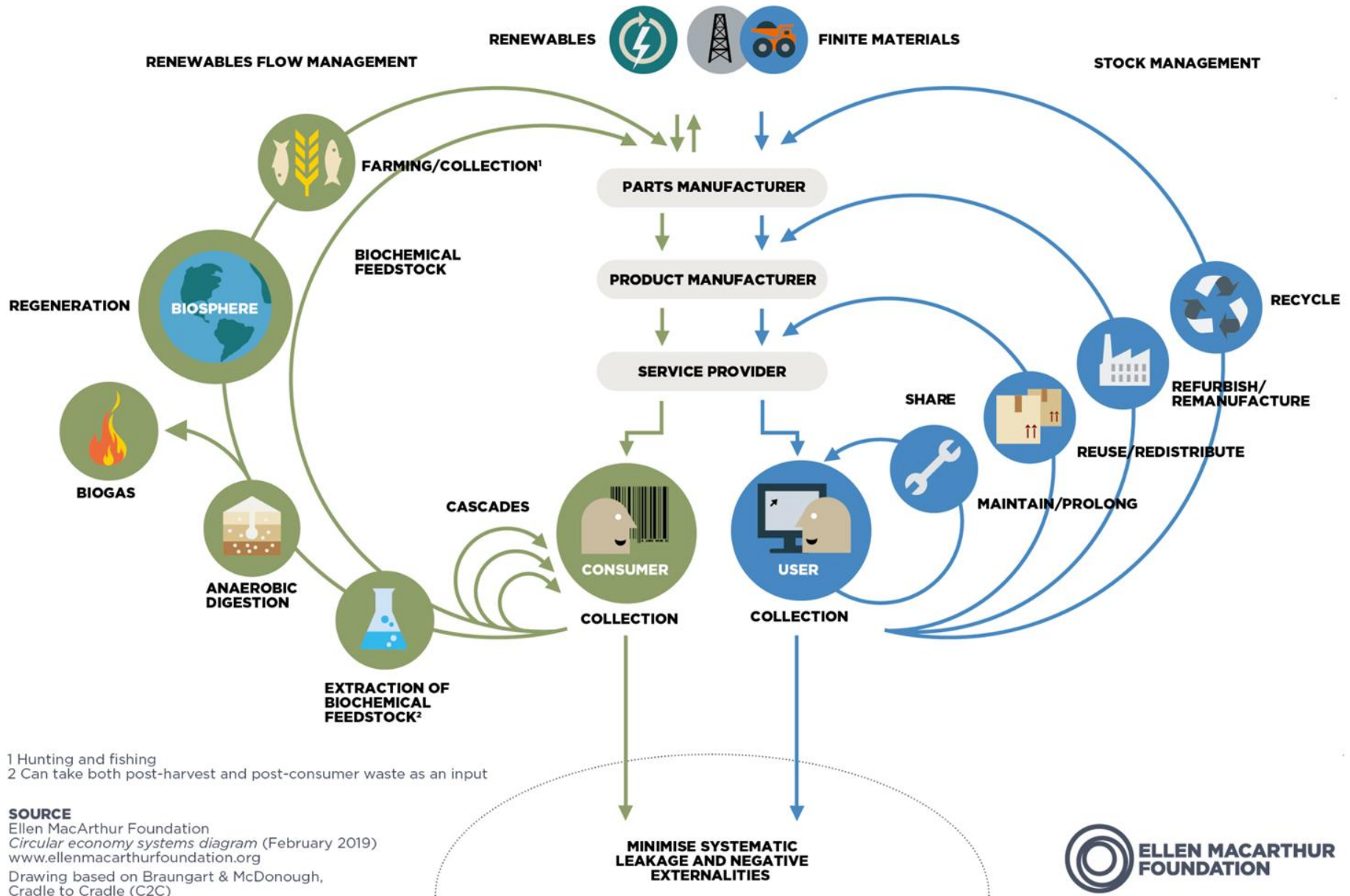
SOSTENIBILITÀ AMBIENTALE



SOSTENIBILITÀ AMBIENTALE

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

CIRCULAR ECONOMY



COS'È LA CIRCULAR ECONOMY

L'economia circolare è un modello di produzione e consumo che implica condivisione, prestito, riutilizzo, riparazione, ricondizionamento e riciclo dei materiali e prodotti esistenti il più a lungo possibile.

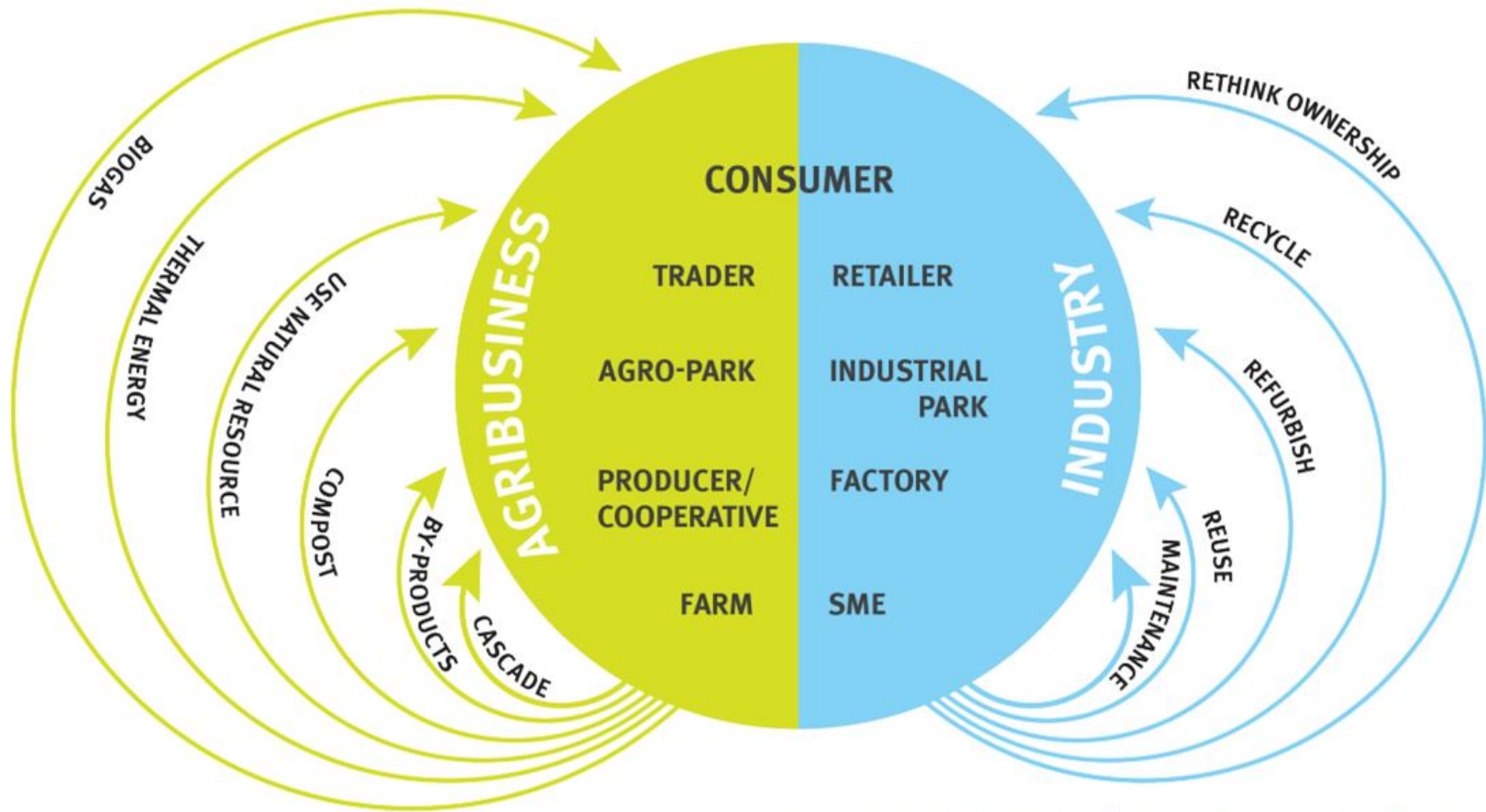
I CONCETTI CHIAVE

CHIUDERE I CERCHI - ogni flusso di materiale deve essere chiuso (confluire in un altro)

STRATEGIE - Ogni modello propone delle strategie che rendono il sistema circolare

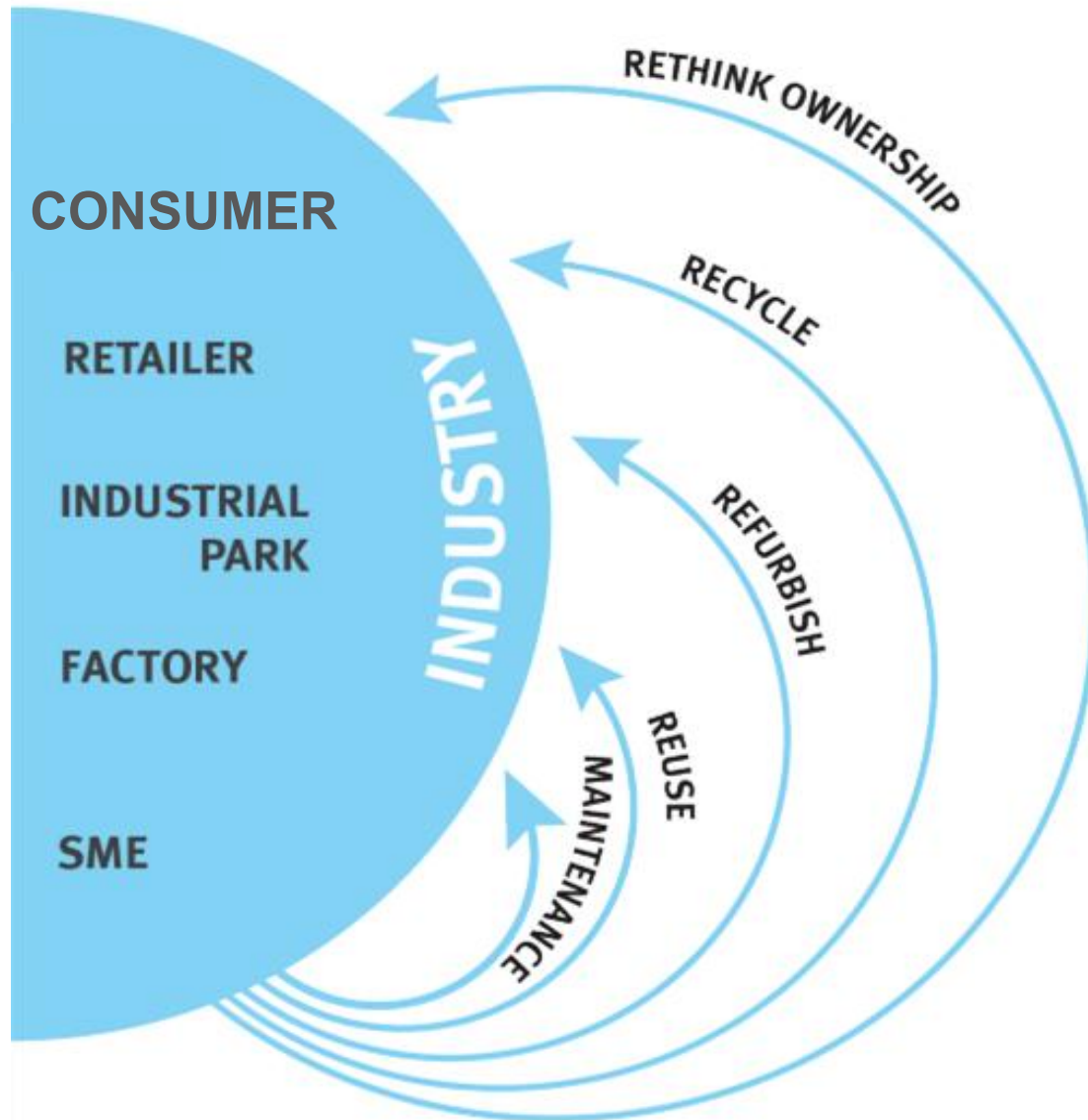
GERARCHIA - le strategie hanno un ordine di priorità, in base a quanto impattanti sono.

CIRCULAR ECONOMY



Source: Ellen MacArthur Foundation concept, redesigned by UNIDO

CIRCULAR ECONOMY



UN ESEMPIO

Problema di sostenibilità

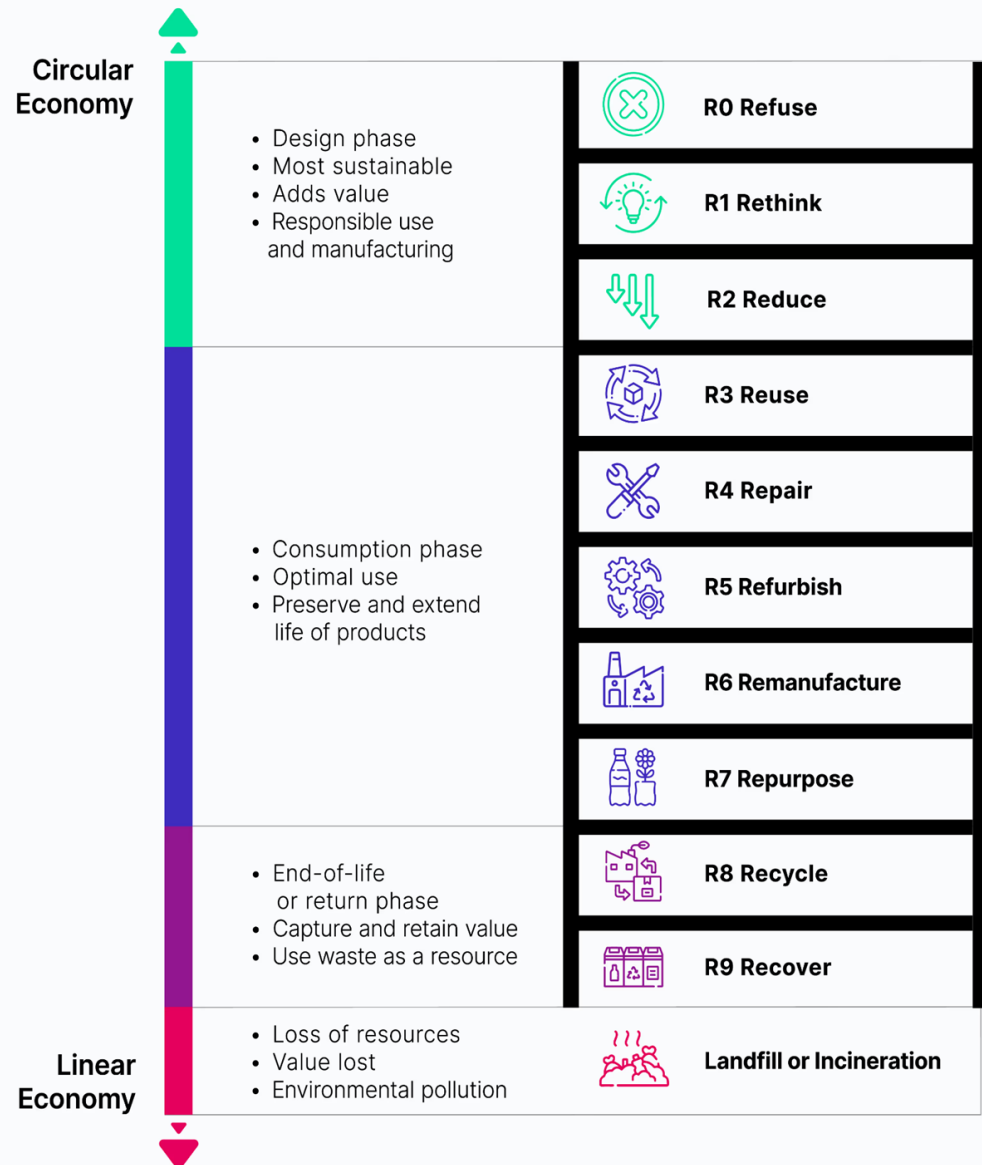
Alcune nuove tecnologie (i.e. Intelligenza Artificiale) consumano molta energia

Strategia
REDUCE

Esempi di applicazioni

- Ridurre l'uso se non necessario
- Scegliere motori più efficienti
- Scegliere modelli meno energivori
- ...

CIRCULAR ECONOMY NELLE "AEE"



LE GERARCHIE

Imparare un framework di strategie e capire come applicarle.

Scegliere qual'è la migliore e con che ordine cercare di integrarle.

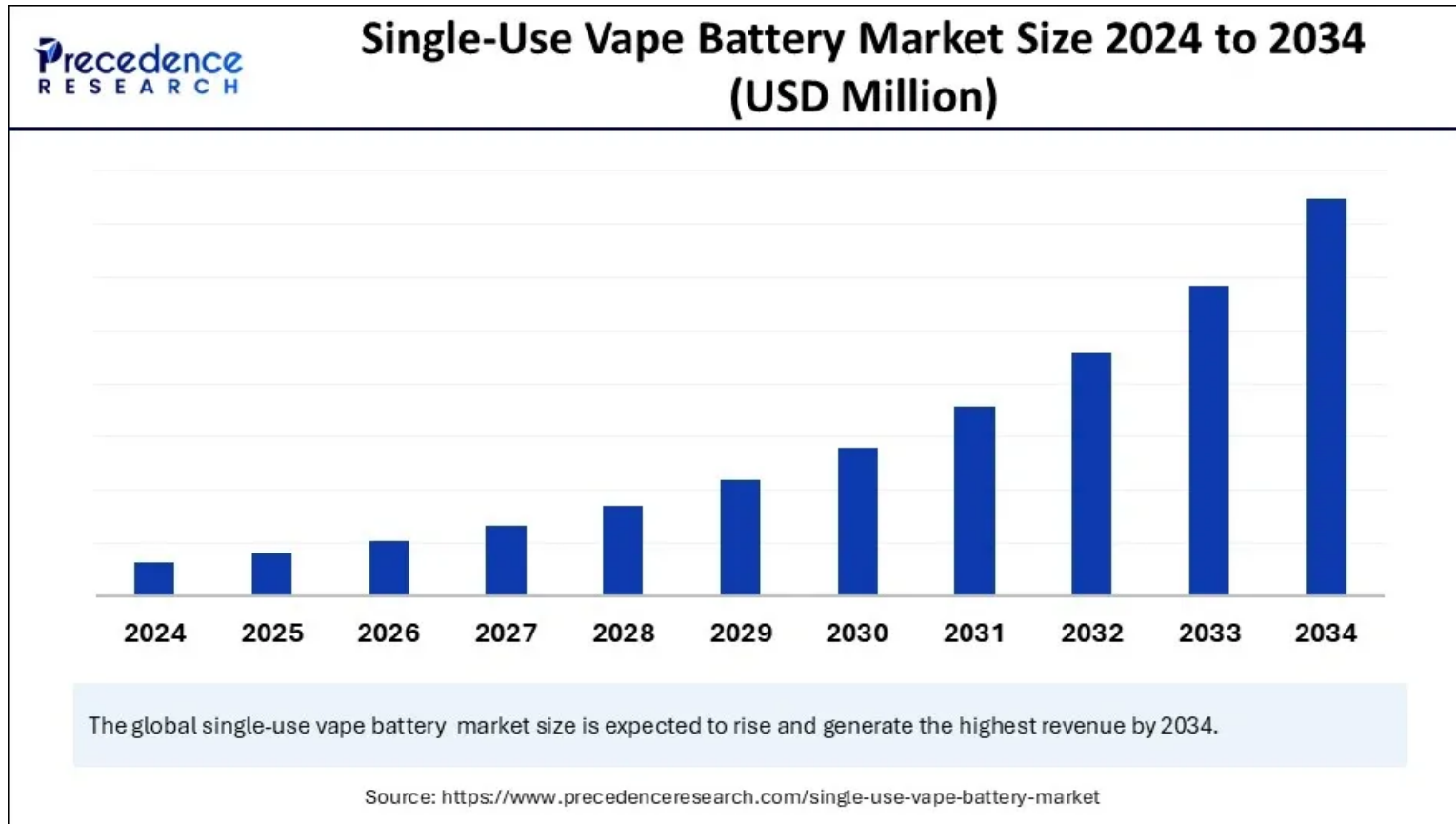
Ro REFUSE

Evitare del tutto il prodotto o il componente superfluo, a monte della filiera. Significa sostituire la funzionalità con soluzioni digitali o condivise, rinunciare a gadget non necessari, eliminare gli imballaggi inutili.

IL VALORE DEL “NON COMPRARE” —

«[...] È un'ottima cosa, signore. Quando un uomo non ha niente da mangiare, digiunare è la più bella cosa che possa fare. Se, per esempio, Siddharta non avesse imparato a digiunare, oggi stesso dovrebbe assumere qualche impiego, da te o in qualunque altro posto, perché la fame ve lo costringerebbe. Ma invece Siddharta può aspettare tranquillo, non conosce impazienza, non conosce miseria, può lasciarsi a lungo assediare dalla fame e ridersene. A questo, signore, serve il digiuno [...]».

ELETTRONICA USA E GETTA



<https://www.precedenceresearch.com/single-use-vape-battery-market>

SINGLE USE VAPE BAN APRIL 2025



<https://www.vapeaholic.co.uk/the-rise-and-fall-of-disposable-vapes-in-the-uk-navigating-the-single-use-vape-ban/>

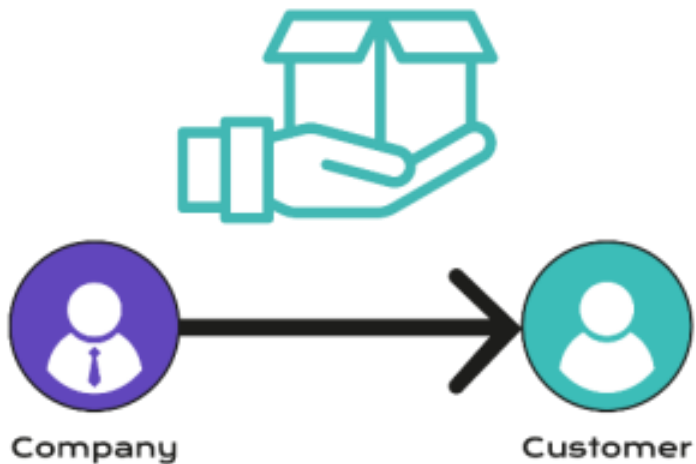
R1 RETHINK

Cambiare il modello di business o il design in modo da usare comunque il bene ma con molta meno materia o energia: es. "product-as-a-service", condivisione, modularità, multi-funzione.

I LIMITI DELLA PRODUZIONE



PRODUCT AS A SERVICE —



Product sales



Product-as-a-Service

DECOUPLING

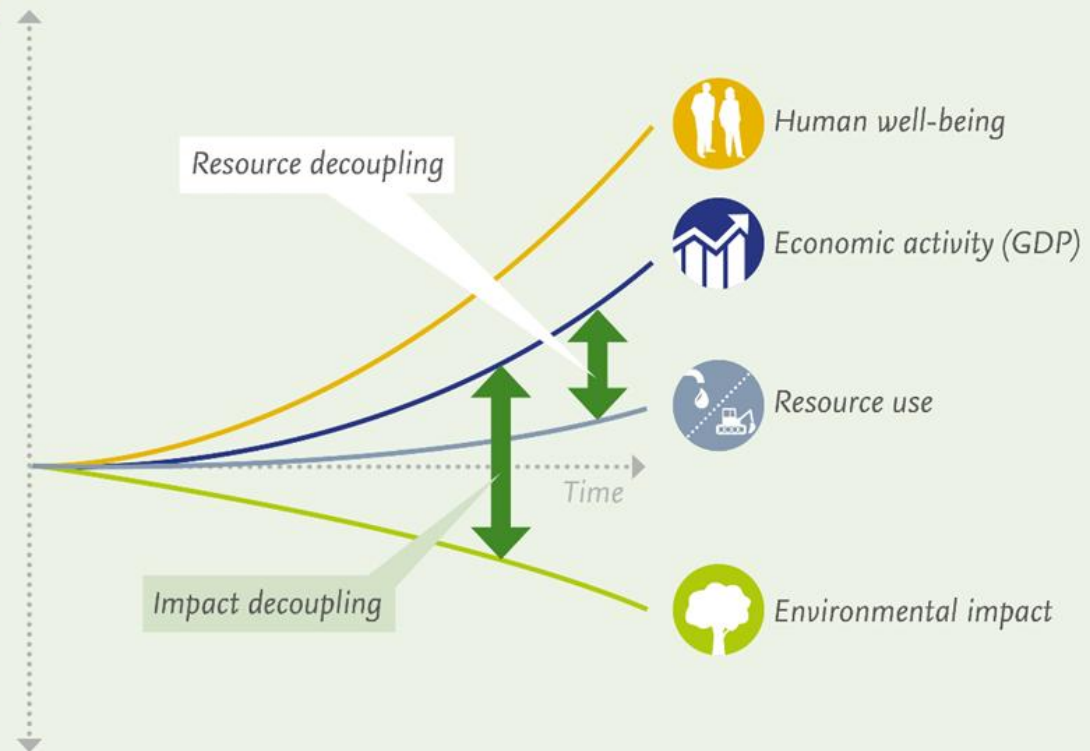
How can we protect the environment, reduce poverty and maintain economic growth?

By **Decoupling**: breaking the link between resource use and economic growth



Using less land, water, energy and materials to maintain economic growth is: **Resource decoupling**

Using resources wisely over their lifetime to reduce environmental impact is: **Impact decoupling**



VENDERE LUCE, NON LAMPADE



No capital investment in
lighting and up to 70%
lower energy costs

With Light as a Service, Praxis and Brico opt for sustainability
and an even better shopping experience

https://images.philips.com/is/content/PhilipsConsumer/PDFDownloads/Global/Case-studies/CSLI20180723_001-UPD-en_AA-Case-Study-LaaS-Praxis.pdf

VENDERE LUCE, NON LAMPADE —



Worry-free

With Light as a Service, retailers only pay a fixed monthly amount. For this they receive a guaranteed agreed amount of light as well as energy savings. Maintenance is also carried out during the agreed period.



Optimal lighting plan for every store

Those who choose Light as a Service can rely on years of lighting expertise. Lighting plans ensure the best-looking stores with the highest energy savings.



Saving on energy costs

Retailers who have not yet switched to LED lighting benefit immediately after installing LED lighting with substantial energy savings of up to 70%.



Unique shopping experience

A service contract from Light as a Service offers plenty of opportunities to take advantage of the many innovations of Philips lighting products and Interact connected lighting systems.

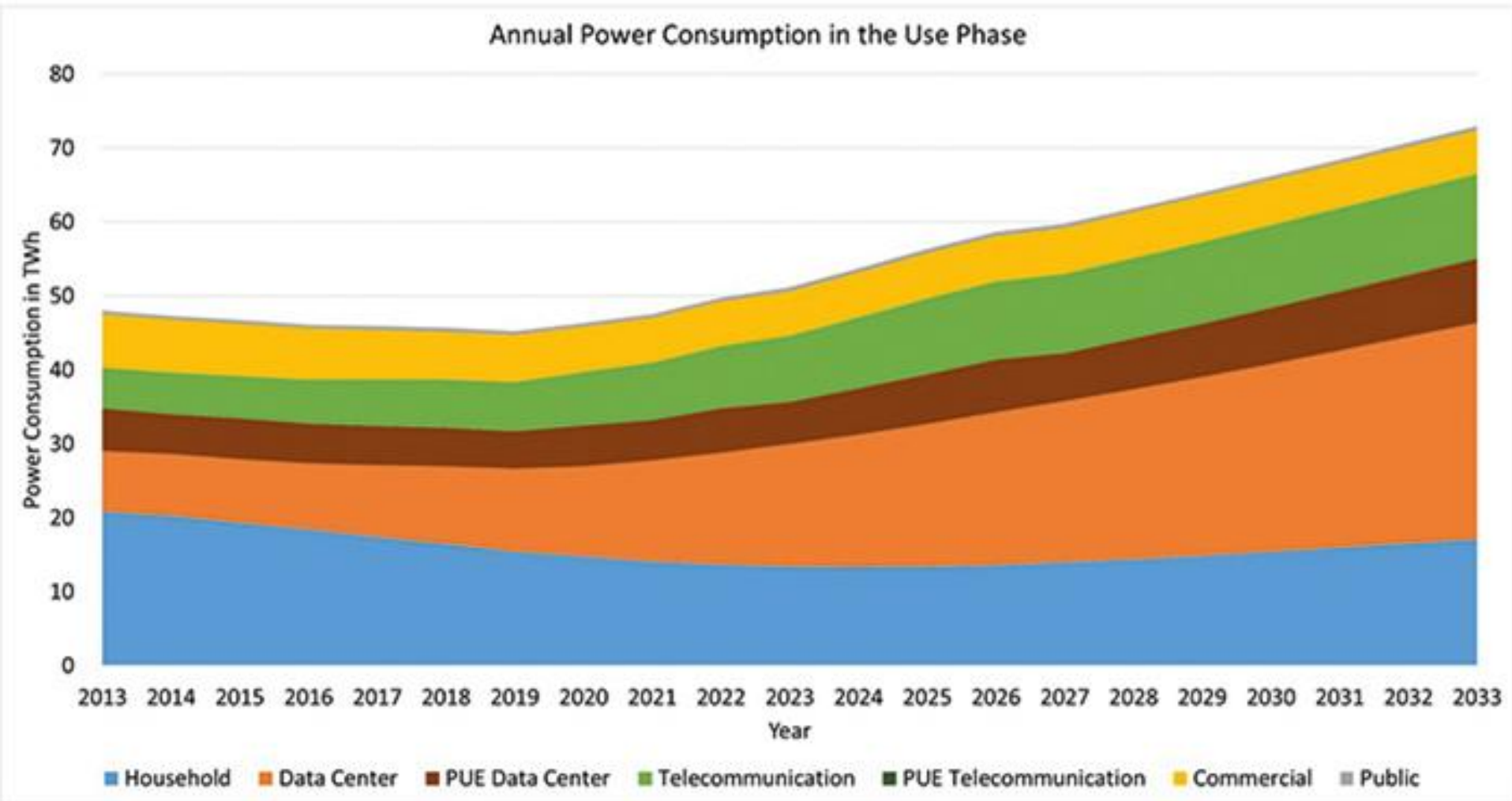
https://images.philips.com/is/content/PhilipsConsumer/PDFDownloads/Global/Case-studies/CSLI20180723_001-UPD-en_AA-Case-Study-LaaS-Praxis.pdf

R2

REDUCE

Minimizzare le risorse impiegate per unità di funzione: prodotti più leggeri, uso di materiali riciclati, minor consumo energetico e minor complessità di componenti.

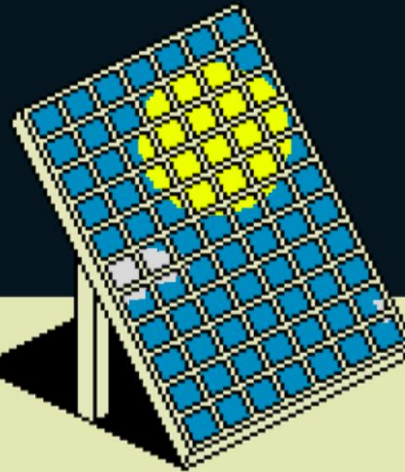
COSA FA AUMENTARE I CONSUMI



<https://blog.izm.fraunhofer.de/ict-study/>

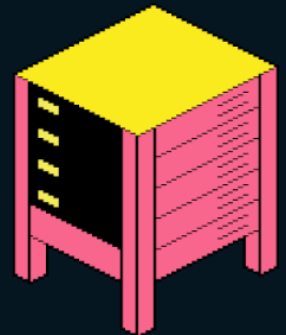
COSA FA AUMENTARE I CONSUMI

Data centers in the US used somewhere around 200 terawatt-hours of electricity in 2024, roughly what it takes to power Thailand for a year.



Data centers can't rely on intermittent technologies like wind and solar power, and on average, they tend to use dirtier electricity.

The carbon intensity of electricity used by data centers was 48% higher than the US average.



Tesla's new wiring architecture could greatly reduce vehicle build time

Posted July 24, 2019 by [Charles Morris](#) & filed under [Newswire](#), [The Tech](#).

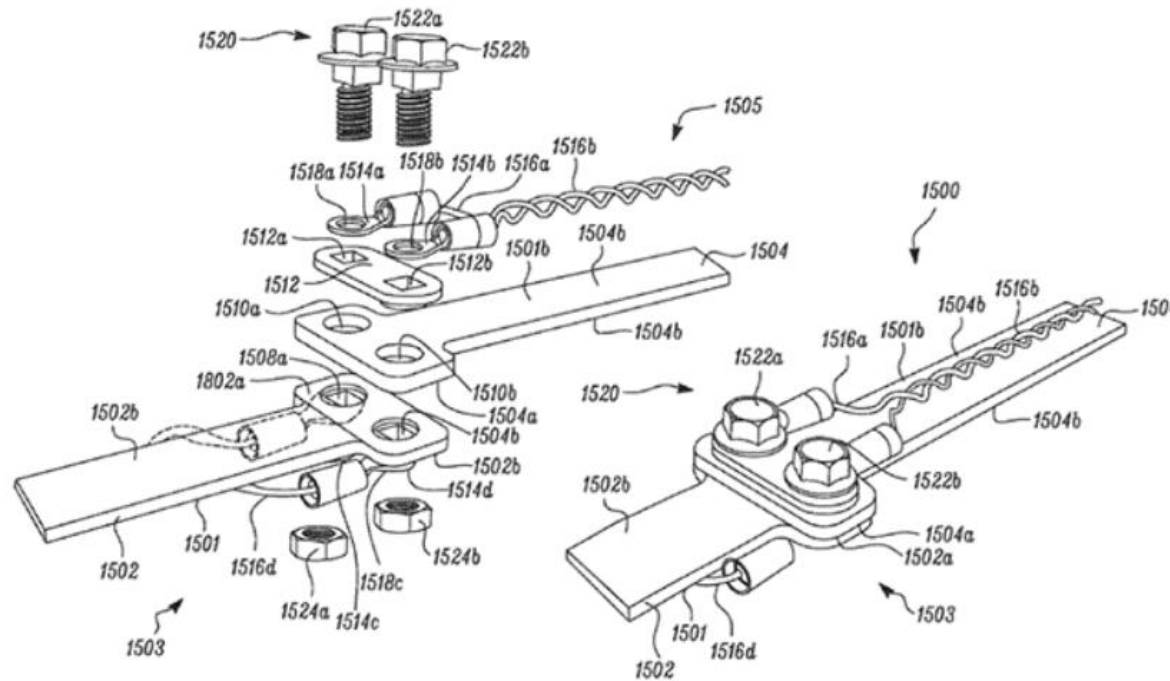


FIG. 15a

FIG. 15b

Model S has about 3 kilometers of wiring harnesses, whereas Model 3 has only 1.5 kilometers. Using the new wiring architecture, Tesla hopes to bring that figure down to a mere 100 meters in the upcoming Model Y.

R3 REUSE

Ri-immettere in circolazione il prodotto intero così com'è, con lo stesso scopo originario e il minimo intervento (pulizia, test).

LIMITAZIONI INESISTENTI

BUSINESS

Peloton slammed over \$95 activation fee for used bikes — on top of monthly fee: ‘egregious money grab’

By **Lisa Fickenscher**

Published Aug. 26, 2024 | Updated Aug. 26, 2024, 6:14 p.m. ET

 20 Comments



A growing number of consumers purchased used Peloton bikes to save money on the pricey equipment.

<https://nypost.com/2024/08/26/business/peloton-slammed-over-95-activation-fee-for-used-bikes-egregious-money-grab/>

IL SECOND HAND



Microsoft Surface Pro 11

Starting at **\$898**

[Prices](#) [Recent Sales](#) [Sell This](#)

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Filter Processor



Filter Condition



Sort By



☐ One Year Warranty

☐ Accepts Credit Cards

☐ Exclude Businesses

☐ International Shipping

Showing 1-6 of 6 • \$898-1999 • [Reset Filters](#)

#	Price	Pics	Color	Storage	Memory	Processor	Condition	Seller	Location	Payment	Shipping	Code	☆
1	\$899		Black	512 GB	16 GB	Snapdragon X Elite	Good	 Arick A. ★★★★★ ⁴	Long Island City, NY		Free	LZHV30540	
2	\$989		Sapphire	512 GB	16 GB	Snapdragon X Elite	Mint	 Yalamanda K. ★★★★★ ³	North Brunswick, NJ		Free	LZGG47408	
3	\$1190		Platinum	512 GB	16 GB	Snapdragon X Elite	Good	 Ben C. ★★★★★ ⁶¹	Ocean City, NJ		Free	LZHD43663	
4	\$1299		Platinum	512 GB	16 GB	Snapdragon X Plus	Mint	 Mike G. ★★★★★ ⁴	East Syracuse, NY		Free	LZGT60686	

<https://swappa.com/>

R4 REPAIR

Ripristinare la funzionalità sostituendo o aggiustando la parte guasta; il resto del prodotto rimane invariato.

IL VALORE DELLA RIPARAZIONE

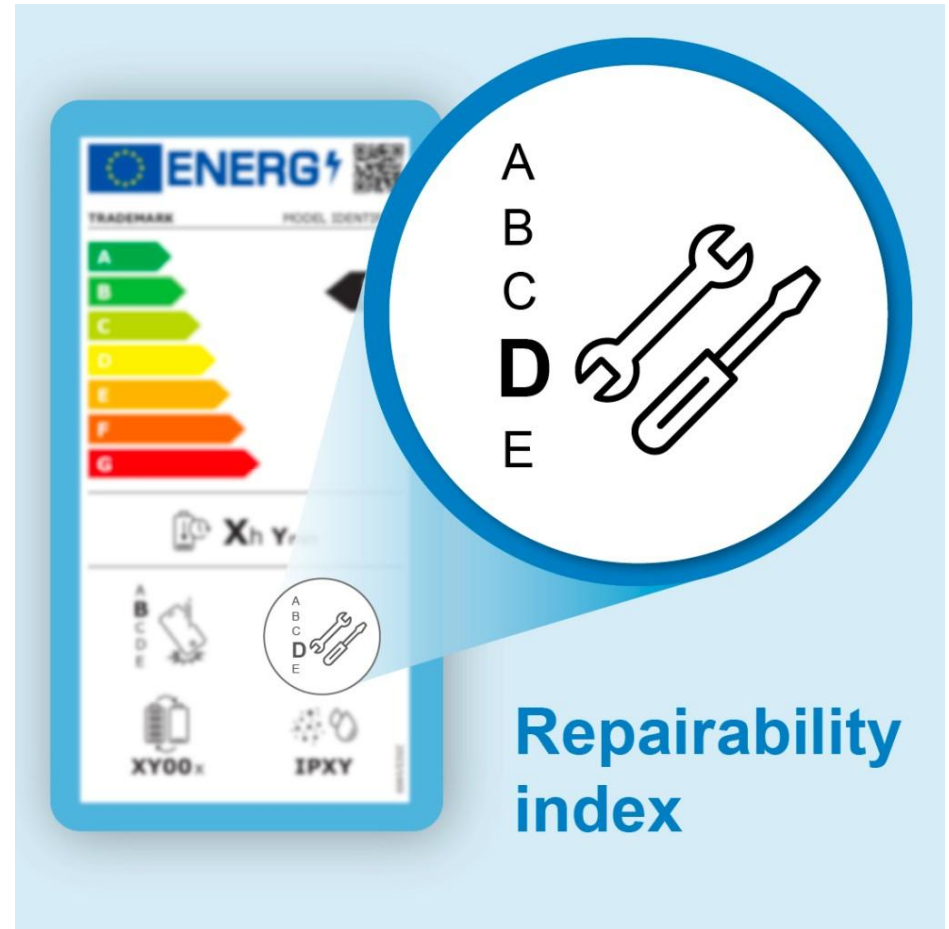
[...] Extending the lifespan of smartphones and other electronics by just one year would save the EU as much carbon emissions as taking 2 million cars off the roads annually, a new EEB study finds.[...]



<https://eeb.org/revealed-the-climate-cost-of-disposable-smartphones/>

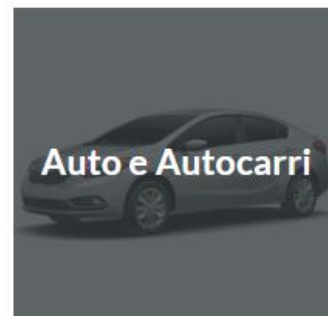
REPAIRABILITY INDEX

[...] The results of the repairability test are captured using a mathematical scoring and evaluation system. The higher the determined total value, the higher the repairability of the product. This is converted to a consumer-friendly classification system of five classes. [...]





Che cosa devi aggiustare?





Skills

There are so many things we could do if we only knew how. This area aims to catalog most specialized skills necessary to perform certain kinds of repairs.

Autore: Eric Doster (e 5 altri collaboratori)

 Crea una Guida

21 Categorie

+ Nuova Pagina



Abilità elettroniche



Art Repair



Basic Sewing



Beading Skills



Blacksmithing



Butterfly Repair



Corn on the Cob



Damaged Wire



iFixit How-To



In The Field Fixes



Knitting



Miscellaneous Skills



Naan Bread Slice Repair



Normal Egg



Plants

We rate products to make it easier to buy repairable devices.

iFIXIT —



Smartphones

[View Scores](#)



Tablets

[View Scores](#)



Laptops

[View Scores](#)



Wireless Earbuds

[View Scores](#)



E-readers

[View Scores](#)



Smartwatches

[View Scores](#)

<https://www.ifixit.com/>

Smartphone Scores

Sorted by newest to oldest

Pixel 9



2024

PROS

- Screen repairs are prioritized, and all other parts are under the back glass—which doesn't require heat to remove.
- Google supports their phones with free, comprehensive service manuals and a wide selection of replacement parts.

CONS

- The battery is stubbornly glued down, and USB-C port repairs require removing the fragile display.
- No clips or fasteners secure the screen or back glass—you'll need to source replacement adhesive for every repair.



Scorecard v2.0

De Fairphone (Gen. 6)

MEER INFORMATIE →

FAIRPHONE —



<https://www.fairphone.com/nl>

Creating products that last

We design for longevity. Our goal is to make your phone last as long as possible. That's why we push for modular design that is easy to repair, and provide hardware and software support for as long as possible. It's the fair thing to do, for you and the planet—the longer you keep your phone, the smaller its environmental footprint.

[Let's talk longevity](#)

Tackling the e-waste problem

We ensure that our phones and products are used for as long as possible, moving closer to a circular and less wasteful economy. That's why we wholeheartedly support the reuse, refurbishment, and repair of our phones. For every product we sell, we also take one back for recycling, reducing electronic waste worldwide.

[Let's talk circularity](#)

Using fair and recycled materials

We go straight to the source to make sure we're creating positive change. We will always bat for fair, recycled, and responsibly mined materials in our phones and products—to make mines and recycling sites safer, to benefit communities and protect children, and to safeguard nature.

[Let's talk fair materials](#)

Pushing for better working conditions

Together with our suppliers, we're creating better working conditions at the factories, ensuring everyone earns enough to afford a decent standard of living. We also work to eliminate the use of harmful chemicals, reduce greenhouse gasses and protect nature from pollution.

[Let's talk fair factories](#)

R5 REFURBISH

Rigenerare il bene con controlli, upgrade minori, sostituzione di parti di consumo e ripristino estetico, per venderlo “quasi come nuovo” con garanzia.

IL MERCATO DEL RICONDIZIONATO

refurbed [About us](#) [Sell](#) [Help](#)  

[All categories](#) [Smartphones](#) [Laptops](#) [Tablets](#) [Smartwatches](#) [Accessories](#) [Headphones](#) [iPhones](#) [Samsung phones](#) [iPads](#) [MacBooks](#) [iPhone 13](#) [iPho](#)

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Smartwatches



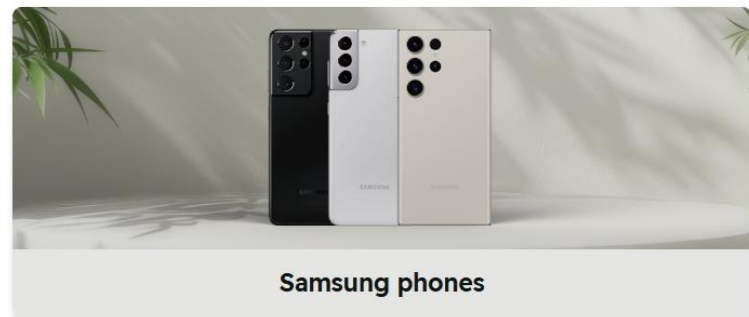
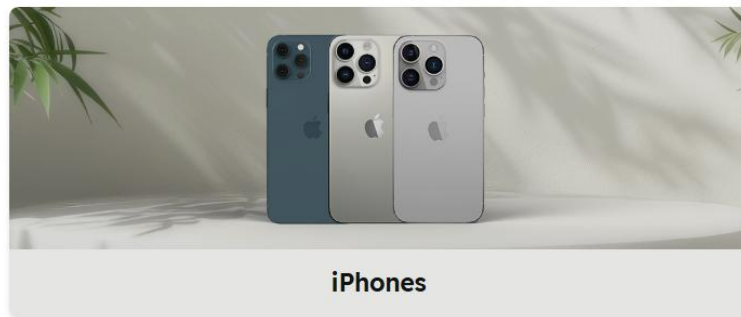
Monitors



Audio

 Delivery included  30-day free trial  Min 12-month warranty  Saves CO₂ vs new

Discover our top categories



<https://www.refurbed.ie/>

GARANTIRE IL RICONDIZIONATO —

*«[...]We founded **refurbed** with the aim of offering consumers the opportunity to make sustainable consumption more accessible. We wanted to show that ecological transparency is now possible. Today, we have come one big step closer to achieving this goal. We now have the opportunity to share transparency for consumers that everyone said was desirable, but not possible.[...]».*

L'IMPATTO DEL RICONDIZIONATO



104 billion l ⓘ
Virtual water saved*
since foundation



> 6.6 million ⓘ
Trees planted**
since foundation



1001 t ⓘ
E-waste saved
since foundation



304,608 t ⓘ
CO₂ saved
since foundation

Promotion of environmental protection projects

Refurbished products are more sustainable than new ones – this is [scientifically proven](#). This also shows that everyone can make a significant contribution to environmental protection, and together, we can do even more. With your support, we therefore promote tried and tested, as well as new, measures to protect our earth. In this way, we can ensure a livable future together.



Electronic waste recycling

Our partner buys electronic waste in countries where minimal recycling is done and makes this material available for new products.



CO₂ removal from the atmosphere

We support projects that remove CO₂ from the air and store it permanently – for example in rocks or algae.



Restoration of landscapes

Goes beyond solely planting trees. Ecosystems are repaired and jobs are created.

R6

REMANUFACTURE

Smontare a livello di moduli, revisionare o sostituire componenti chiave, riassemblare e collaudare con specifiche pari al nuovo; il prodotto riparte da “zero ore” di vita utile.

LA RINASCITA DEI PRODOTTI

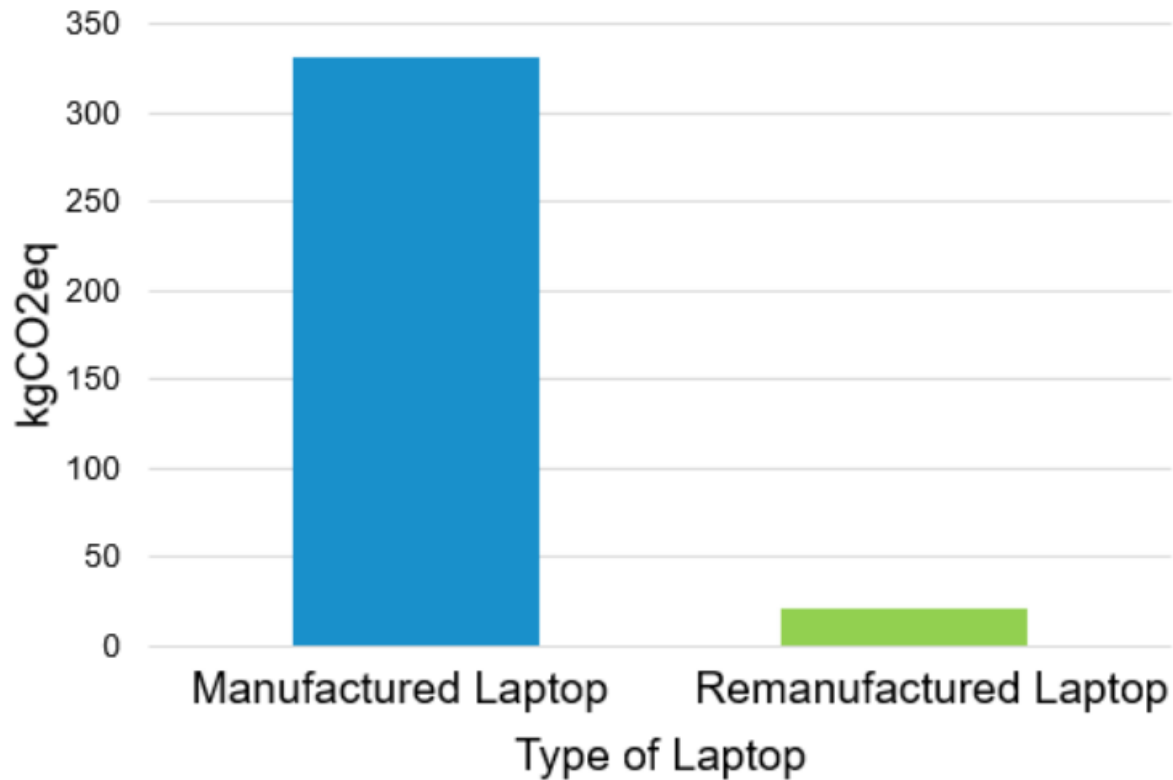


Figure 7. CO₂eq emission comparison between new manufactured and remanufactured laptop.

USURA INEVITABILE, SPRECO SI —



ROBOTICS

Remanufactured Robots

For maximized return on investment



An ABB certified Remanufactured Robot is a used robot that has undergone a rigorous manufacturing process to a “like-new” condition, providing the same quality, performance, reliability and durability as a new robot.

<https://new.abb.com/products/robotics/service/remanufacturing-and-workshop-repair/remanufactured-robots>

R7

REPURPOSE

Utilizzare il prodotto o i suoi moduli per una funzione diversa da quella originale (upcycling funzionale), senza tornare a materiale grezzo.

LA SECONDA VITA DEI COMPONENTI



<https://hackaday.com/2024/08/13/from-vehicle-to-grid-to-diy-home-powerwalls/>

Stories /

PIONEER, an innovative system that provides clients with both energy and value

Enel X is giving new life to e-vehicle second-life batteries, thereby enabling Rome's airport hub to improve its energy performance and feed the grid

[Renewables take off at Fiumicino](#)

[Reaching for Net Zero with PIONEER](#)

[Truly Circular Energy](#)

<https://corporate.enelx.com/en/stories/2024/06/pioneer-second-life-battery-energy-storage-system-aeroporti-di-roma>

R8 RECYCLE

Recuperare le materie prime attraverso processi meccanici, termici o chimici, per trasformarle in feedstock e realizzare nuovi prodotti.

RICICLO: UN DIVARIO CHE AUMENTA

GLOBAL E-WASTE MONITOR 2024: ELECTRONIC WASTE RISING FIVE TIMES FASTER THAN DOCUMENTED E-WASTE RECYCLING



Global e-Waste Monitor 2024

- A record 62 million tonnes (Mt) of e-waste was produced in 2022, Up 82% from 2010;
- On track to rise another 32%, to 82 million tonnes, in 2030;
- Billions of dollars worth of strategically-valuable resources squandered, dumped;
- Just 1% of rare earth element demand is met by e-waste recycling.

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David Hirsch, ITU, +41 22 730 5092; pressinfo@itu.int

Terry Collins, +1 416 878 8712; tc@tca.tc

The full Global E-waste Monitor report is available at: www.globalewaste.org

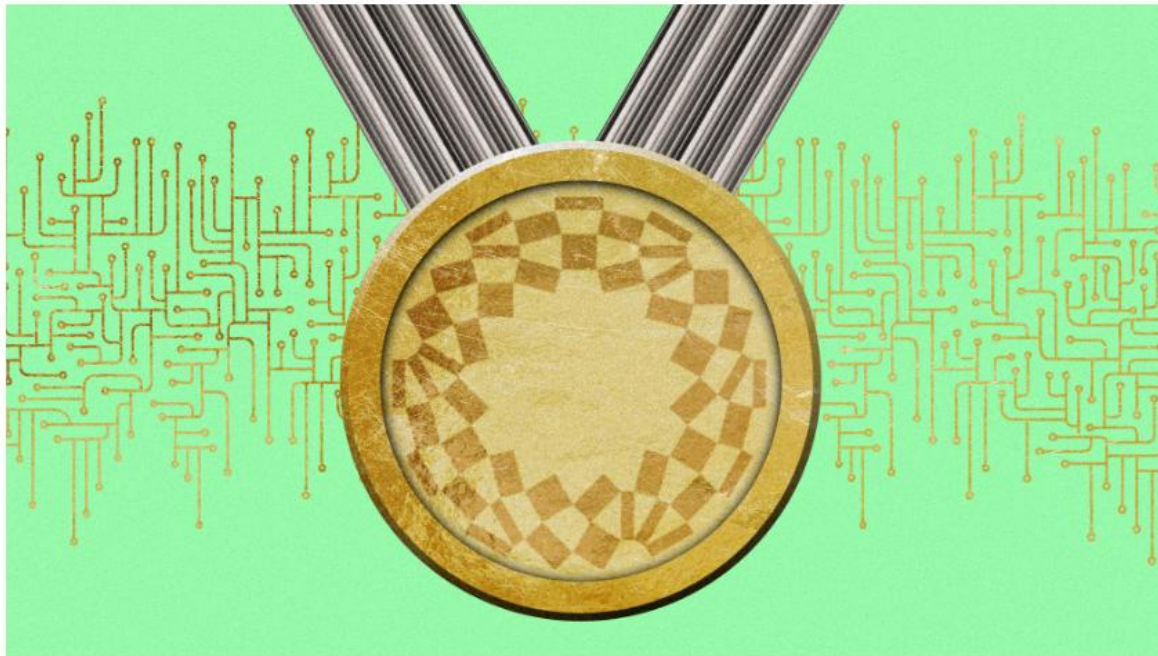
<https://unitar.org/about/news-stories/press/global-e-waste-monitor-2024-electronic-waste-rising-five-times-faster-documented-e-waste-recycling>

RICICLO DI MODA

Tokyo's Olympic medals are made from 47 tons of recycled electronics

The country of Japan pitched in old electronics to make new gold, silver, and bronze medals.

SHARE ↗



[Illustration: FC]

<https://www.fastcompany.com/90304021/tokyos-olympic-medals-are-made-from-47-tons-of-recycled-electronics>

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E-WASTE

[LINKEDIN](#)[INSTAGRAM](#)[YOUTUBE](#)

RECYCLING



- >Maximize recovery,
- >reduce costs, and transform
- >your WEEE treatment
- >process with advanced
- >robotics and automation

[DISCOVER OUR SOLUTIONS](#)

ROBOTICS

SCROLL DOWN ↓

LEVANTE CAPITAL

FONGIT

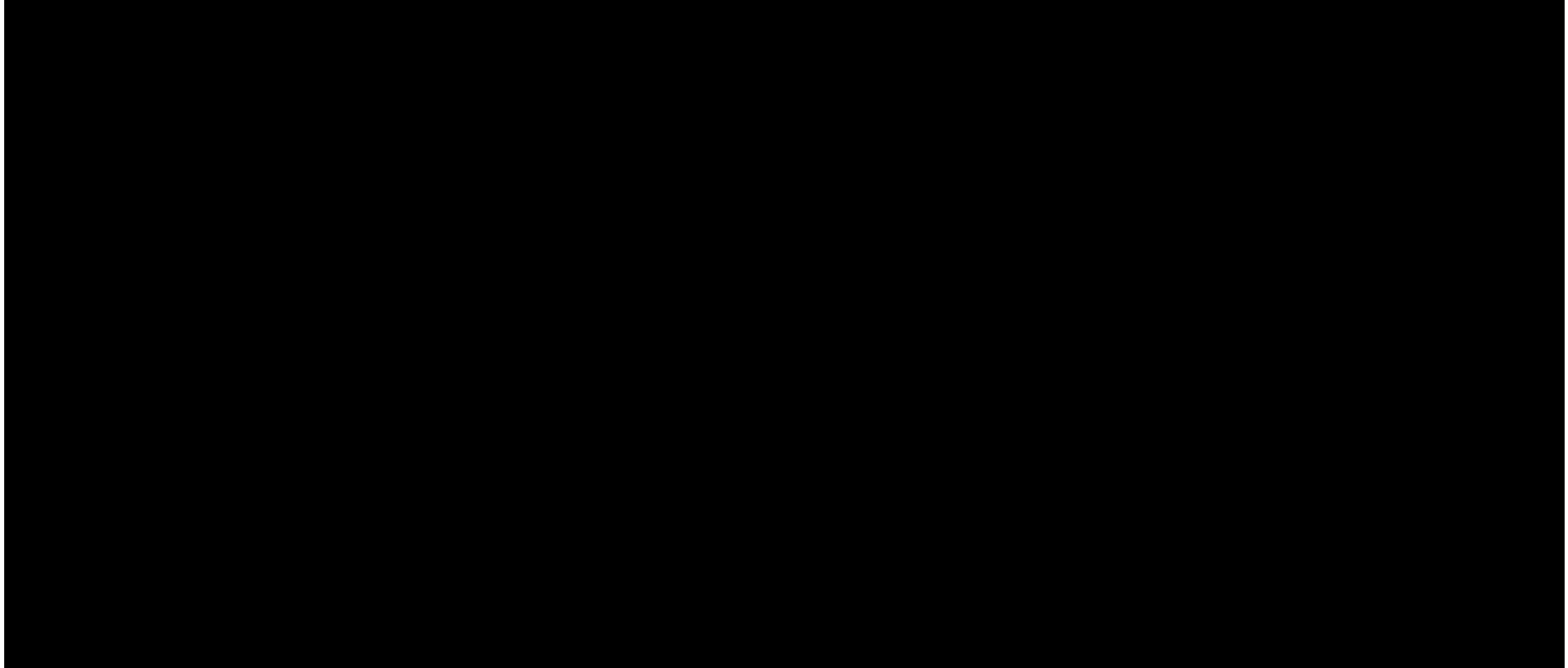
PLUGANDPLAY

AUTODESK
Technology Impact

FlowVision
Connecting markets

Co-funded by the
European Union

RICILATORI ROBOTICI —



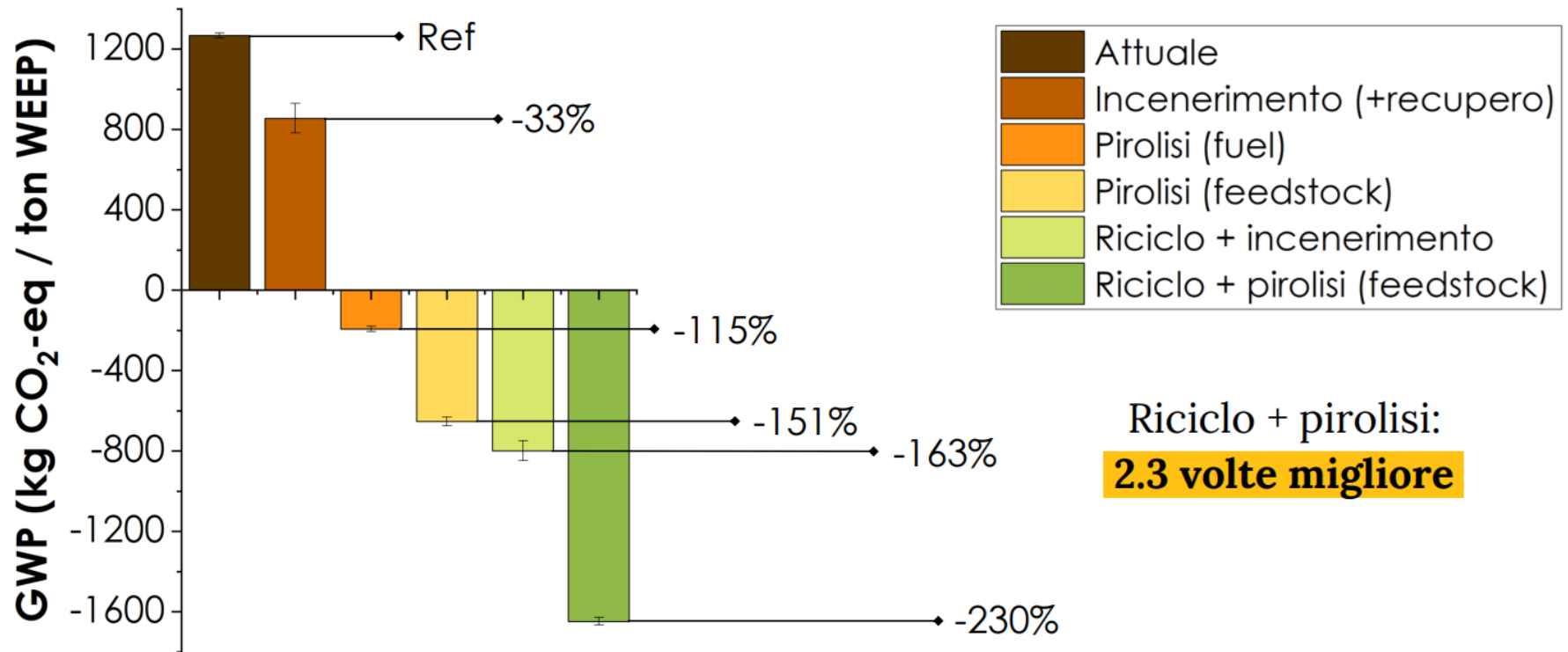
<https://www.hirorobotics.com/>

R9 RECOVER

Valorizzare la frazione residua non riciclabile tramite combustione controllata, pirolisi, gassificazione o altra tecnologia che generi energia o materia prima secondaria, riducendo il ricorso a discarica.

RECUPERARE L'ENERGIA

Climate change - Confronto



Alessandro Salvi

VI Giornata di Studio Rifiuti e Life Cycle Thinking

24



POLITECNICO
MILANO 1863

<https://www.aware.polimi.it/wp-content/uploads/2023/03/Salvi.pdf>



Journal of Cleaner Production

Volume 333, 20 January 2022, 130191



A comprehensive review on pyrolysis of E-waste and its sustainability

Amirhossein Andooz ^a, Mohammad Eqbalpour ^a, Elaheh Kowsari ^a  ,
Seeram Ramakrishna ^b  , Zahra Ansari Cheshmeh ^a

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<https://doi.org/10.1016/j.jclepro.2021.130191> 

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<https://www.sciencedirect.com/science/article/abs/pii/S0959652621043560>

DIREZIONI E CASE STUDIES

RIGHT TO REPAIR

Right to repair: the EU's actions to make repairs more attractive

After pushing for it for years, MEPs have adopted legislation that guarantees the right to repair products that can be fixed.



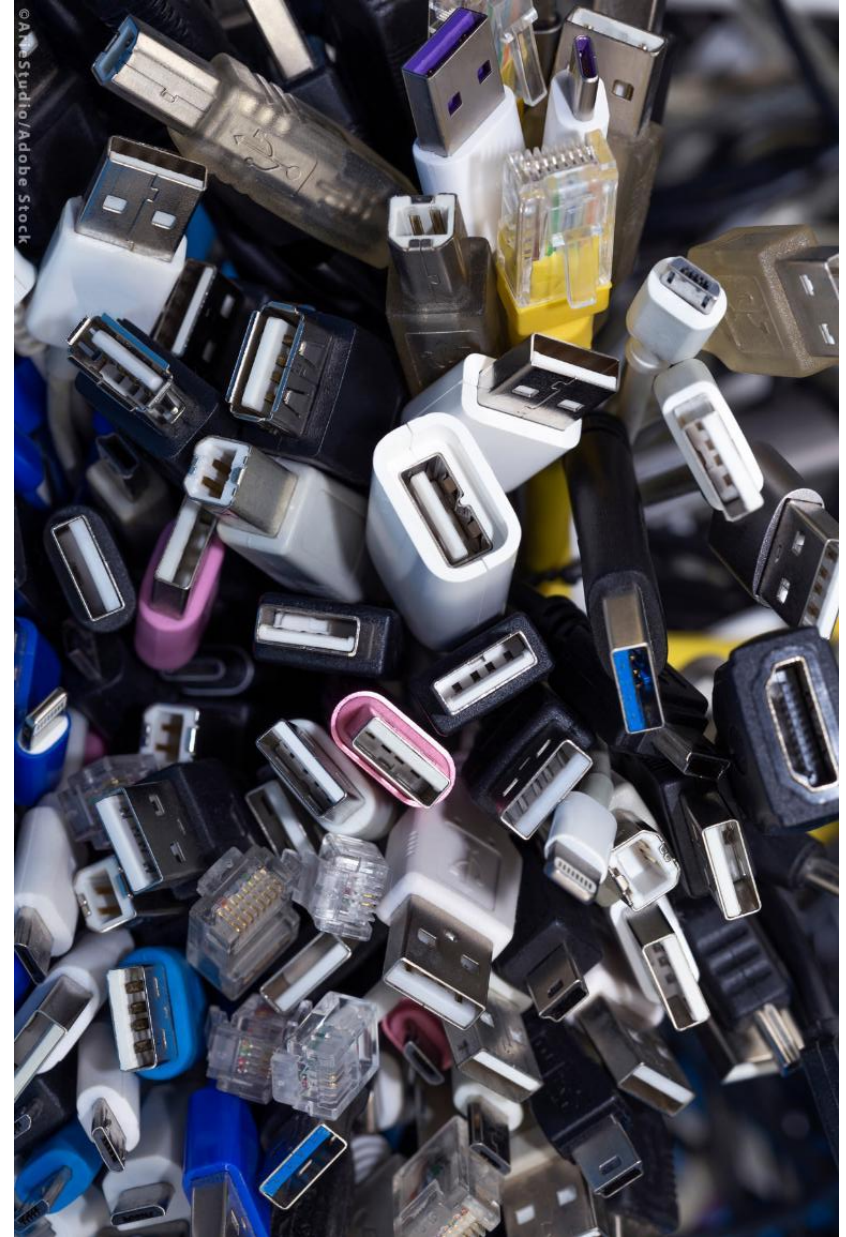
<https://www.europarl.europa.eu/topics/en/article/20220331ST026410/right-to-repair-eu-action-to-make-repairs-more-attractive>

COMMON CHARGERS

USB-type C to become EU's common charger by end of 2024

Parliament adopted new rules to make USB type-C the common charging standard for small electronic devices by the end of 2024.

Find out what this means for you.



<https://www.europarl.europa.eu/topics/en/article/20220413ST027211/usb-type-c-to-become-eu-s-common-charger-by-end-of-2024>

UNO CONTRO UNO

RAEE
unocontrozero

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**Scarica il Decreto
"Uno contro Zero"**

Come possiamo aiutarti?

Contattaci per sottoporre il tuo
quesito ai nostri esperti.

Qualche informazione:

Uno contro uno ▼

Nominativo

Telefono

<https://www.unocontrozero.it/uno-contro-uno-raee/>

UNO CONTRO ZERO

I DISTRIBUTORI DI AEE

Nella gestione dei RAEE il **distributore**, anche chi vende online, è obbligato a:

- ♦ Iscrivere all'Albo Gestori Ambientali
- ♦ Iscrivere al CDC RAEE
- ♦ Organizzare un deposito temporaneo o luogo di raggruppamento*

***NOTE:** se si rientra nei Distributori obbligati alla gestione dei RAEE in Uno contro Zero, è necessario differenziare lo stoccaggio degli stessi nel proprio deposito temporaneo.

- ♦ Gestire correttamente il Registro Semplificato di carico e scarico e Conservare per anni 3 la documentazione
- ♦ Individuare eventuali Trasportatori
- ♦ Individuare i Centri di Raccolta presso cui conferire i RAEE

I CITTADINI

Nella gestione dei RAEE il **cittadino** è chiamato a vantare diritti ma anche doveri:

- ♦ Possibilità di conferire gratuitamente i piccoli **RAEE in Uno contro Zero**:
solo presso i Distributori con superficie minima di 400mq e solo per piccoli dispositivi e apparecchiature elettroniche non superiori a 25cm.
Inoltre, per i conferimenti in Uno contro Zero, non vi è l'obbligo di acquisto di nuove apparecchiature equivalenti.
- ♦ Possibilità di conferire gratuitamente rifiuti **RAEE in Uno contro Uno**:
sin dal 2010 tutti i cittadini possono consegnare le apparecchiature elettriche ed elettroniche esauste al Distributore previo l'acquisto di una nuova AEE.
Per poter conferire ad un Distributore la vostra apparecchiatura esausta (RAEE) è necessario che si perfezioni l'acquisto di una nuova apparecchiatura (AEE) equivalente. *(Es. si può conferire un vecchio notebook, solo se si acquista un nuovo notebook)*

<https://www.unocontrozero.it/uno-contro-uno-raee/>

RICAPITOLANDO...

- Serve intervenire ad ogni aspetto della catena del valore
- Diversi attori hanno diversi ruoli, ma ognuno può contribuire
- Esistono già svariate soluzioni sviluppate da start-up innovative e centri di ricerca
- Ripensare i prodotti elettronici in chiave sostenibile è un'opportunità
- Ogni fase della catena del valore ha soluzioni che potrebbero essere utili per limitare l'impatto ambientale e sociale
- I cambiamenti sono rapidi e continui e serve continuare a formarsi
- Ci sono nuovi cambiamenti normativi ed è fondamentale farsi trovare pronti
- Ogni realtà deve decidere autonomamente che piano di sostenibilità sviluppare e seguire
- Per questo è fondamentale un lavoro di personalizzazione degli interventi

GRAZIE!

Enrico Bassi

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<https://www.linkedin.com/in/enricobassi/>