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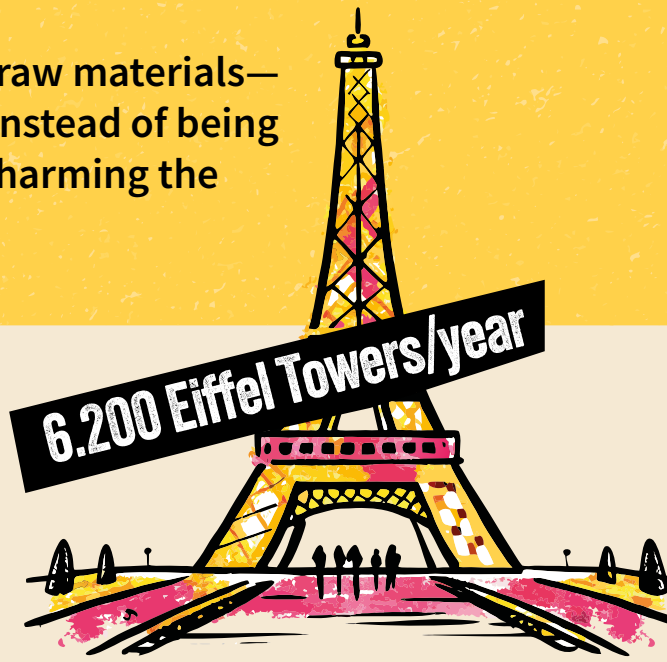
Trash or treasure?

What's inside your electric device

62 million tons of waste electrical and electronic equipment are disposed of worldwide every year. That's roughly the **same weight as 6,200 Eiffel Towers.**

The devices contain valuable raw materials—and could be used for longer instead of being disposed of prematurely and harming the climate and the environment.



Europe is responsible for a large portion of E-waste

Amount of E-waste generated per capita in 2024

Africa: 2.5 kg
● 0.018kg

Asia: 6.4 kg
● 0.76 kg

The Americas: 14.1 kg
● 4.2 kg

Oceania: 16.1 kg
● 6.66 kg

Europe: 17.6 kg
● 7.53 kg

● amount of documented E-waste collected and recycled per capita

What is electric and electronic equipment? How to use them more sustainably? And why is that a global justice issue? Learn more:

Not used long enough

On average, smartphones are used for **2–3 years** *in Germany.*

Every German buys an average of **39 kilograms** *of new electrical and electronic devices per year.*

Raw materials: too valuable to go to waste

Devices such as cell phones, washing machines, and laptops contain valuable raw materials: gold in circuit boards, copper in cables, cobalt in batteries, and aluminum in casings. Many of these raw materials are mined in other countries, often in the Global South—where human rights are frequently violated and the environment is harmed.

Throughout history, people in wealthy countries like Germany have used significantly more of these metals than people in the Global South—about ten times as much per capita.

Is it fair that some countries use so much more raw materials than others?

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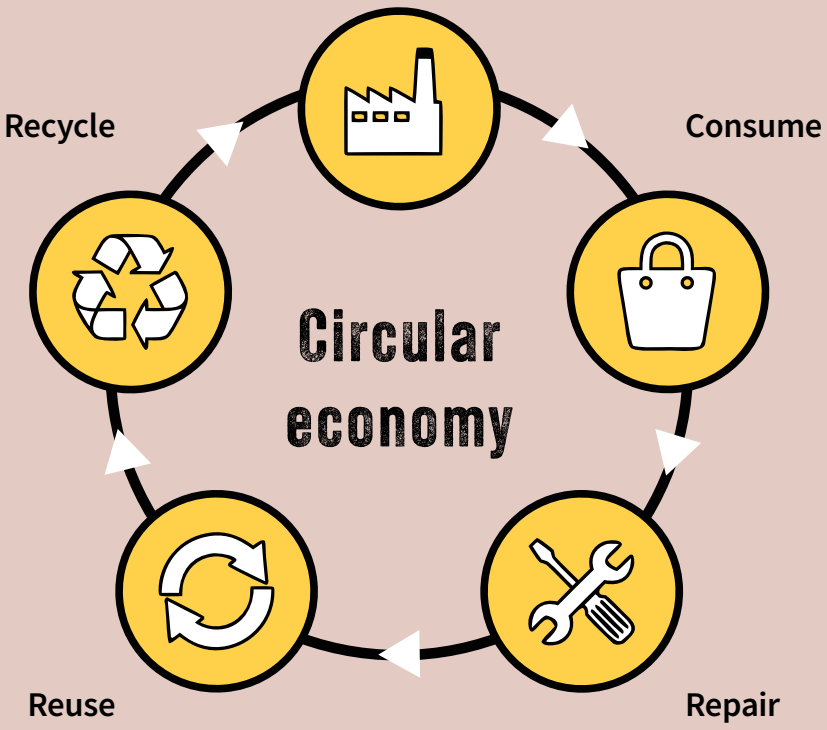
Rethink instead of discarding

Imagine this: You can use your smartphone for six years. Your washing machine can be repaired. The raw materials in discarded appliances are recycled and used in new products. That's the circular economy. This helps reduce the need for new raw materials and prevent waste.



Waste prevention starts with design

Whether a device quickly becomes E-waste or can be used for a long time is often decided as early as the product development stage. Manufacturers decide how their products are built and whether they can be easily repaired. Through sustainable design, devices can be engineered to be durable, repairable, and easy to disassemble. Other ideas go even further: devices are used or rented and remain the property of the manufacturers—an incentive to build them to be particularly durable.

The strategy: The sooner, the better

With the 10 R strategies, we can reduce our use of raw materials.

Before use

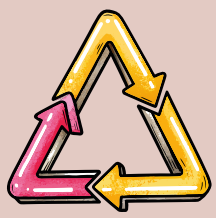
1. Refuse
2. Rethink
3. Reduce

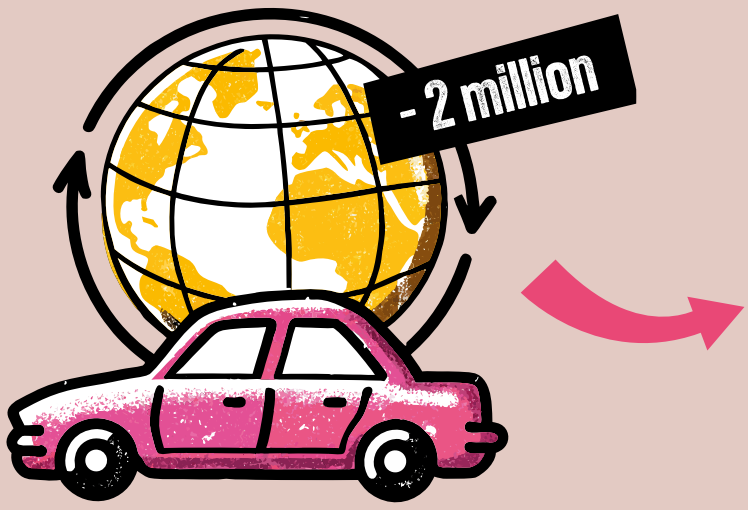
During use

4. Reuse
5. Repair
6. Refurbish
7. Remanufacture
8. Repurpose

After use

9. Recycle
10. Recovery





If laptops, smartphones, vacuum cleaners, and washing machines across Europe were used **for one year longer**, *this could save around four million tons of CO_2 per year—equivalent to about* **2 million cars** *off the street.*

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One device – many lives

Devices like headphones, toasters, and cell phones don't have to end up as waste just yet. Repairing them extends their lifespan and keeps valuable raw materials in circulation.

And how exactly does that work?

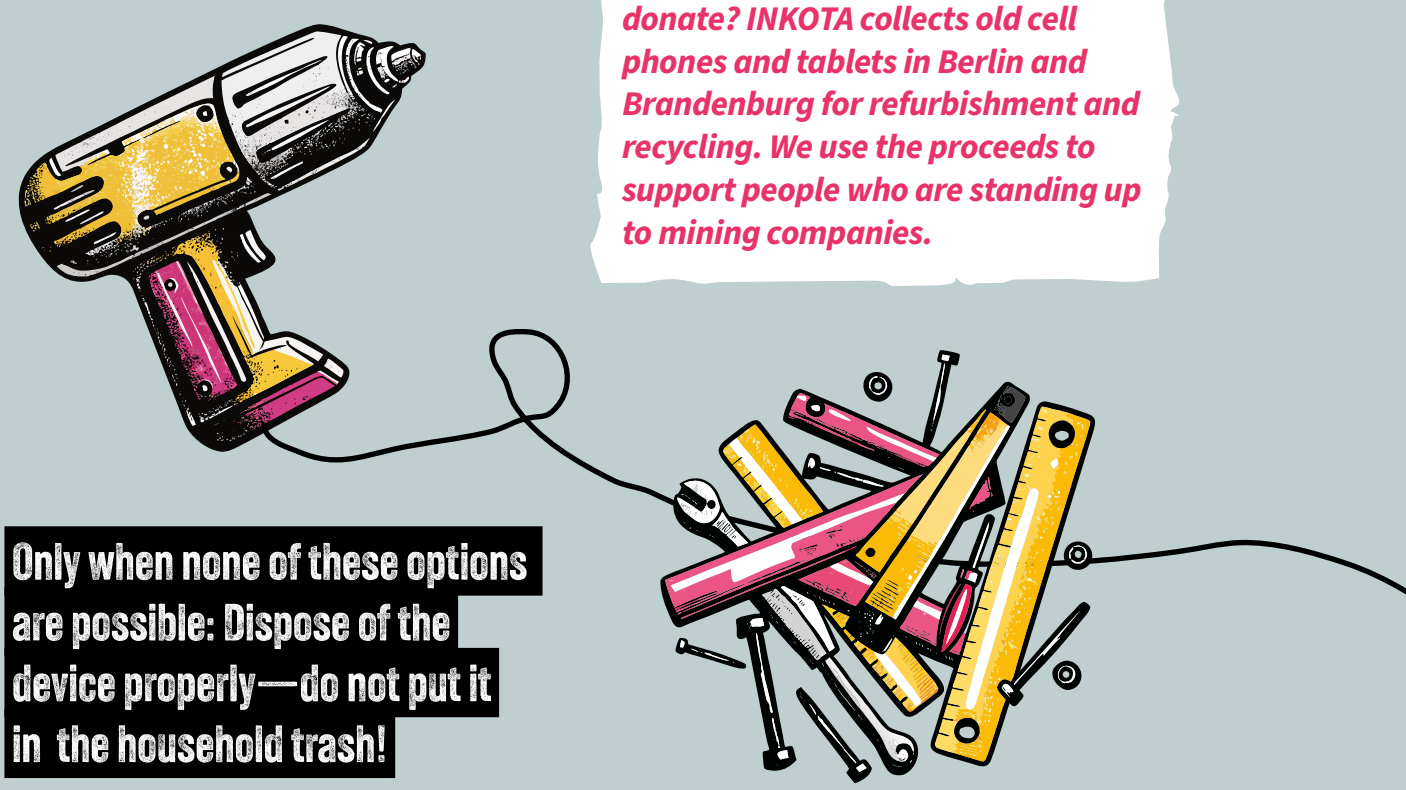
Reduce: Look for durability when making a purchase

Devices can be designed so that parts that break frequently can be replaced. Fairphone has designed a cell phone that allows you to replace components such as the display, camera, battery, speaker, or USB port yourself. The company also strives to ensure fair conditions in the sourcing of raw materials.

Expert Julia Reinhard explains how we can get even more out of our cell phones.

Rethink: Rent what you rarely need

If you only need a tool once or rarely, renting is a good alternative to buying. Rental shops, the "Library of Things," and hardware stores rent out various tools. At the Leihladen Leila at "Haus der Materialisierung" in Berlin, for example, you can borrow tools.



Refurbished: Buy used

Does it have to be the latest model? Refurbished devices often work just as well—so consider using smartphones, laptops, and other refurbished devices; they've been technically tested and are significantly cheaper.

Do you have an old cell phone to donate? INKOTA collects old cell phones and tablets in Berlin and Brandenburg for refurbishment and recycling. We use the proceeds to support people who are standing up to mining companies.

Only when none of these options are possible: Dispose of the device properly—do not put it in the household trash!

Old devices can be dropped off at recycling centers or collection points. Through recycling, raw materials from old devices can be reintroduced into the cycle. This is important, but it is only the third-best option, as some of the materials are lost or degrade in quality during the recycling process; furthermore, shredding, melting, and casting are energy-intensive processes.

You want to know more about circular economy in practice? Check out examples from Nigeria, India, Argentina, Germany and South Sudan.

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A global journey with consequences

A laptop or computer monitor contains dozens of valuable raw materials—and these materials literally travel around the world during their production and disposal.

The social and environmental consequences of their production and disposal are not immediately apparent from the device itself.

Life-threatening labour

Much of the cobalt used in batteries comes from the Democratic Republic of the Congo. Many workers there mine in small-scale operations without adequate safety equipment. They inhale toxic cobalt dust, and accidents and collapses frequently occur. Mining for raw materials is also lucrative for armed groups and fuels conflicts.

E-waste becomes a health hazard

The Basel Action Network hid GPS trackers in old computers and printers, enabling it to track how these devices were shipped out of Europe, in some cases illegally. This is how they end up in informal dumps in Ghana. There, E-waste is dismantled by hand and burned, releasing toxic fumes that seep into the soil, water, and air.

Contaminated groundwater

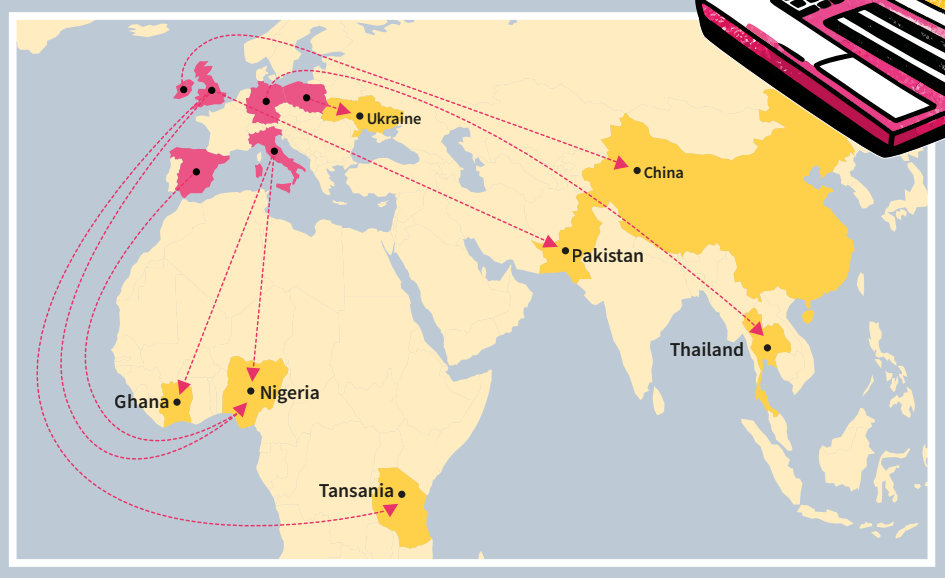
Copper conducts electricity in our devices, but copper mining repeatedly contaminates rivers and groundwater with toxic heavy metals. In Mexico, two rivers and the groundwater in Sonora have been contaminated since a dam burst in 2014.

Harmful to the climate

Mining and metal processing account for 11% of global greenhouse gas emissions.

Exploitation in the electronics industry

Many electronic components are manufactured in China or Malaysia. Studies show that labor rights are often restricted and employees are forced to work overtime.



The routes of E-waste exports, as documented by the Basel Action Network.

Want to know more about the connection between European electrical appliances and waste collectors in Ghana? Scientist Dr. Khiddir Iddris from Ghana explains it to you in the video.

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Together for a just transition

To better protect the environment and human rights, we must reduce our consumption of raw materials. We need a sustainable and more equitable approach to raw materials consumption. This transition begins in our daily lives. And it requires a robust policy framework.

What's happening politically

Zero-Waste City

Since 2021, Berlin has been pursuing a zero-waste strategy. The city is supporting repair shops, building a network of craft and repair services, and establishing reuse department stores.

A Framework for Circular Economy

In 2024, the German government adopted a circular economy strategy. The goal is to reduce raw material consumption and keep materials in circulation for longer.

Right to Repair

The EU-wide Directive on the Right to Repair has been in effect since 2024. Under the directive, manufacturers must ensure that repairs are possible for certain product categories, provide spare parts for several years, and grant repair shops access to relevant information. Germany has to turn these rules into national law by 2026.

Transparency through product passport

Since 2024, the EU-wide Ecodesign Regulation has required companies to design selected products to be more durable, resource-efficient, and repairable. A key tool is the digital product passport, which is intended to provide information on the materials used and options for repair and recycling.

We need more!

1. Repairing must be cost-effective, which is why we need long-term and reliable funding for repair shops and reuse initiatives.
2. For measures aimed at promoting a circular economy to be effective, binding laws and regulations for businesses are needed.
3. Manufacturers must take responsibility for their entire supply chain—from raw material extraction to the end of a product's life cycle. Only in this way can we reduce the use of raw materials, prevent waste, and respect human rights worldwide.

What do you think? Things are starting to happen. But is that enough? Interested in getting involved with INKOTA to support a globally just raw materials transition?

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