

REPORT BRIEFING



COOLPRODUCTS DON'T COST THE EARTH

THEY DON'T MAKE THEM LIKE THEY USED TO...

Our electricals don't last as long as they used to.

Their useful [lifespans are decreasing](#) and it is becoming increasingly difficult and expensive to repair them or replace key parts like a cracked screen.

While it is hard to assess whether companies are purposely shortening the lifespans of electronics, the proportion of defective devices being replaced by consumers grew [from 3.5% in 2004 to 8.3% in 2012](#).

Yet, there is ample evidence of consumer desire for longer-lasting products, as [77% of EU citizens would rather repair their goods than buy new ones](#).

Whatever the reason, repeatedly manufacturing new products to replace old ones is not just bad news for consumers' wallets. It's also drastically increasing the threat of climate change.



COOL PRODUCTS LAST LONGER

This study makes the case for repairable and longer-lasting products, proving that as well as saving resources they can do much to reduce our carbon footprint.

Our analysis shows that extending the lifetime of all washing machines, notebooks, vacuum cleaners and smartphones in the EU by just one year would save around 4 million tonnes of carbon dioxide (CO₂) annually by 2030, the equivalent of taking over 2 million cars off the roads for a year.

The calculation considers the energy needed to produce and distribute new products and dispose of old ones – the so-called *non-use phases*, distinguishing from when the product is in use or the *use phase*.

The impact of our products in their non-use phase is often overlooked in climate assessments. For example, if emissions linked to manufacturing of imported products – i.e. most of the electricals we buy – were accounted for, [the EU would not have achieved any reduction in emission since 1990](#).

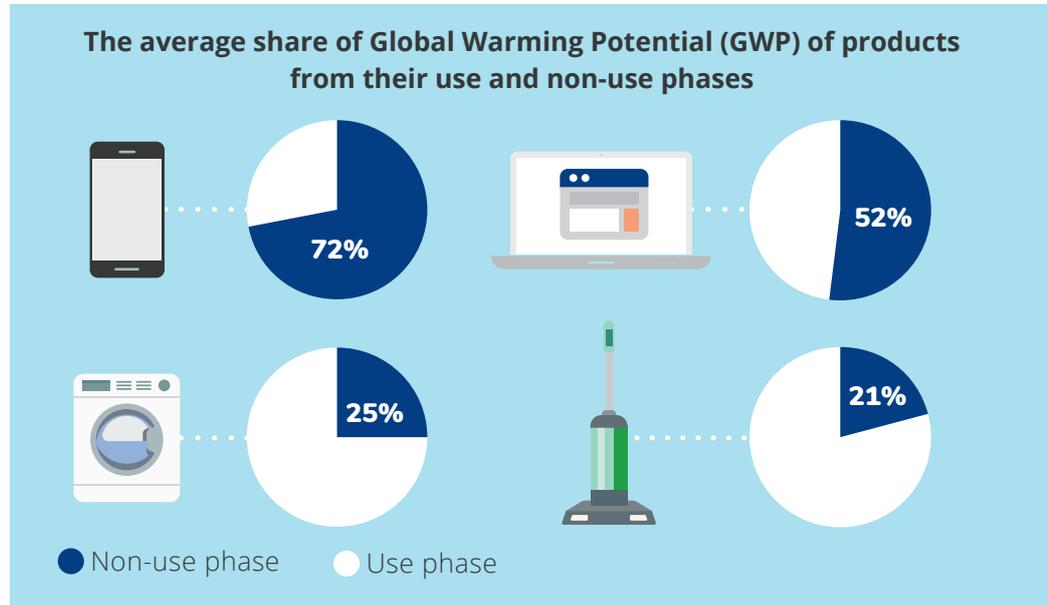


THE REAL CLIMATE IMPACT OF OUR PRODUCTS

Our growing consumption of electronics means more greenhouse gas emissions. This is not only due to the energy these products use, but also because their production relies on energy intensive activities such as resource extraction, manufacturing and end-of-life treatment including recycling. Global Warming Potential (GWP) is a way to measure the impact of these activities.

For example, manufacturing a laptop or a smartphone has a greater GWP than charging and using these products over the course of their lifetime.

It is often argued that energy efficiency improvements in new products justify replacing old products, because less energy use will offset the climate impact linked to production. This study includes conservative scenarios to test this premise, assuming very optimistic annual efficiency improvements of 5% across the four product groups.¹

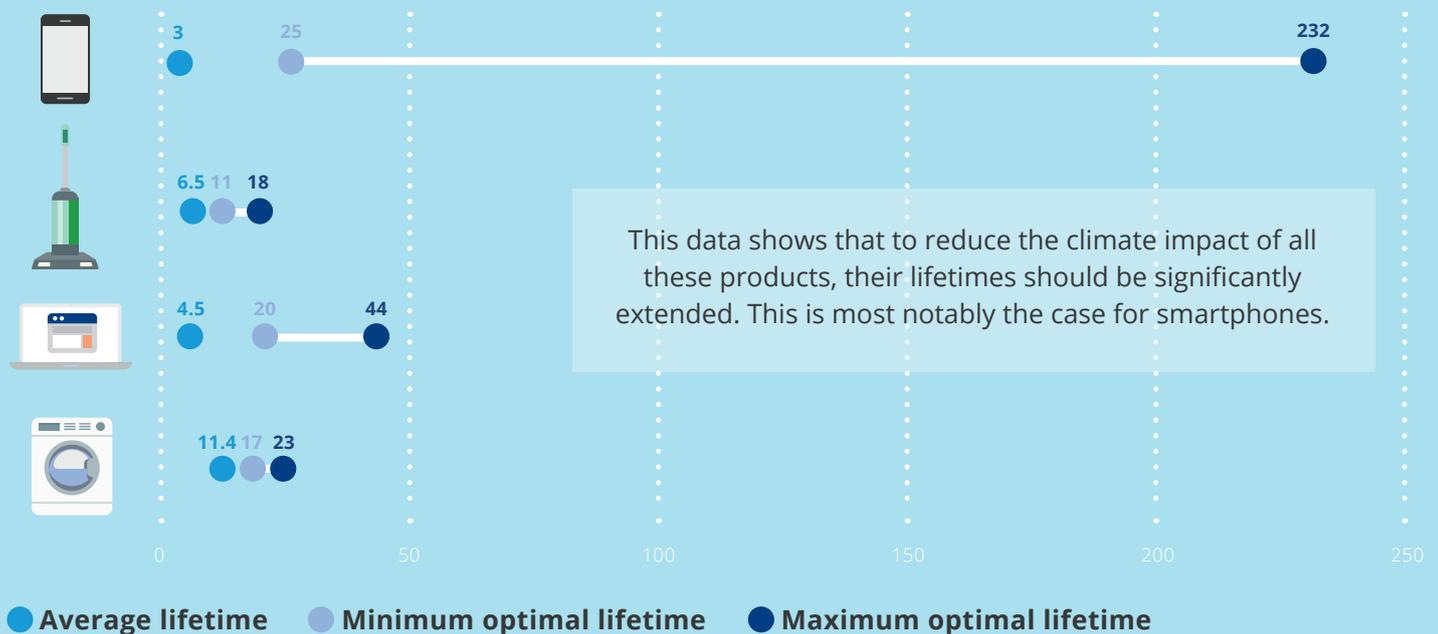


The results show how long we would have to keep using these products if we wanted to compensate for the greenhouse gas emissions linked to their non-use phases.

Put simply, in terms of GWP, it's always better to repair than to replace one of these products.

HOW LONG SHOULD PRODUCTS LAST FROM A CLIMATE PERSPECTIVE?

Average lifetime vs optimal lifetime to limit Global Warming Potential (years)



This data shows that to reduce the climate impact of all these products, their lifetimes should be significantly extended. This is most notably the case for smartphones.

¹ In reality, the energy efficiency improvement of washing machines and vacuum cleaners is around 1%, as they have already become much more efficient in the recent years. For smartphones and notebooks, new products actually tend to consume more energy than their predecessors.

SMARTPHONES

Manufacturing Europe's smartphones has the largest climate impact of the products analysed in this study. This is because the production of their components, containing rare and critical materials, is material and energy intensive.



Annual climate impact of EU stock (use and non-use phases):

14.12 MILLION TONNES
of CO₂ equivalent



Manufacturing, distribution and disposal account for about

72%



of a smartphone's total climate impact



Expected lifetime:
3 YEARS



Annual sales:
210,800,000
units



Total stock in the EU:
632,400,000
units

Extending the lifetime of all smartphones in the EU by



would save 2.1 Mt CO₂ per year by 2030, the equivalent of taking over **a million cars off the roads**

would save around 4.3 Mt CO₂



would correspond to about 5.5 Mt CO₂

Cracked screens, weak batteries, software updates, alongside the desire for latest technology, are all reasons why people replace their phones.

If we wanted to compensate for the greenhouse gas emissions linked to a smartphone's non-use phases, it would need to last for 25 to 232 years!

As support for longer-lasting products grows, the EU should encourage the manufacturing of repairable and upgradeable smartphones that can adapt to changes in software. Consumers should be given the chance to keep their smartphones for as long as possible.

NOTEBOOK COMPUTERS

The energy and resource intensive production of integrated components such as motherboards means the largest share of a notebook's global warming potential is linked to its non-use phases.

Annual climate impact of EU stock (use and non-use phases):

12.82 MILLION TONNES
of CO₂ equivalent



Manufacturing, distribution and disposal account for about

52%



of a notebook's total climate impact



Expected lifetime:
4.5 YEARS



Annual sales:
27,602,000
units



Total stock in the EU:
151,085,000
units

Extending the lifetime of all notebooks in the EU by

1 YEAR

3 YEARS

5 YEARS

would save 1.6 Mt CO₂ per year by 2030, the equivalent of taking 870,000 cars off the roads

would save around 3.7 Mt CO₂



would correspond to about 5 Mt CO₂

Just like smartphones, the lifespans of laptops and small computers are becoming ever shorter as new units are replaced due to different reasons, including new incompatible technologies.

Because the market is moving towards notebooks with higher processing capacity and higher energy consumption, it is important to balance this trend with longer lifespans. If we wanted to compensate for the greenhouse gas emissions linked to a notebook's non-use phases, it would need to last for 20 to 44 years!

Public policy should encourage the manufacturing of repairable and upgradeable notebooks that can adapt to changes in software.

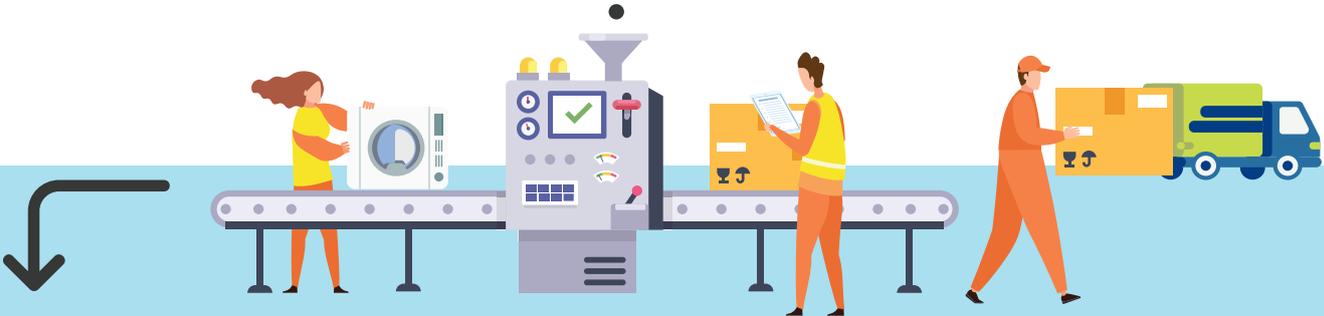


WASHING MACHINES

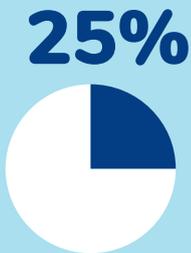
Considering both the use and non-use phases, washing machines have the largest overall climate impact of the products analysed in this study.

Annual climate impact of EU stock (use and non-use phases):

17.62 MILLION TONNES
of CO₂ equivalent



Manufacturing, distribution and disposal account for about



of a washing machine's total climate impact



Expected lifetime: **11.5 YEARS**



Annual sales: **13,518,000** units



Total stock in the EU: **202,000,000** units

Extending the lifetime of all washing machines in the EU by



would save 0.25 Mt CO₂ per year by 2030, the equivalent of taking 130,000 cars off the roads



would save around 0.66 Mt CO₂

would correspond to about 1 Mt CO₂

Washing machines are typically only discarded when broken. But because they are subject to extreme vibration and mechanical stress during use, appropriate design for durability and repair is key.

Newly agreed EU rules may help our washing machines last longer. By 2021, manufacturers will have to ensure that all units placed on the EU market can be easily disassembled and repaired. However, because spare parts and repair manuals will be made available to professional repairers only, the availability and affordability of repair services may remain limited.

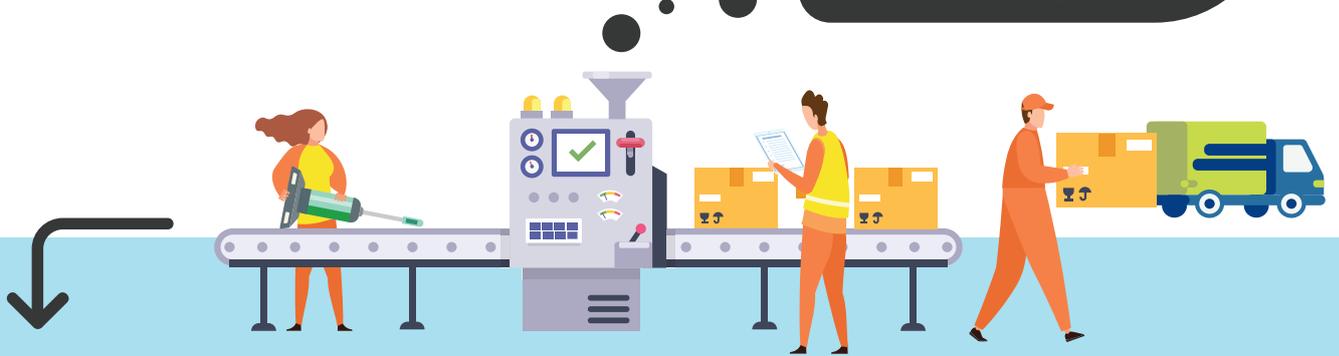
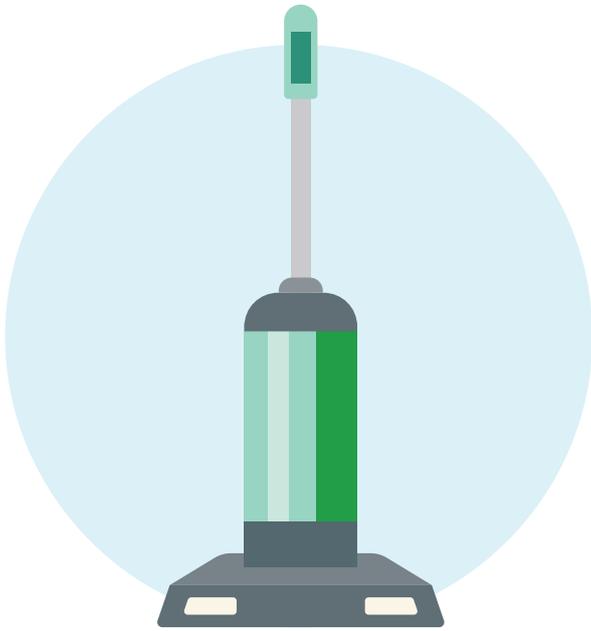
Our analysis shows that washing machines would have to be kept for between 17 and 23 years to compensate for the greenhouse gas emissions of production, distribution and disposal.

VACUUM CLEANERS

The largest climate impact of vacuum cleaners comes from their use phase. Nonetheless, they are replaced before they should be, mostly due to failures or drastic loss of performance as well as the introduction of less reliable robots and cordless units.

Annual climate impact of EU stock (use and non-use phases):

4.2 MILLION TONNES
of CO₂ equivalent



Manufacturing, distribution and disposal account for about



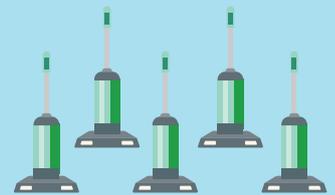
of a vacuum cleaner's total climate impact



Expected lifetime:
6.5 YEARS



Annual sales:
37,300,000
units



Total stock in the EU:
277,210,000
units

Extending the lifetime of all vacuum cleaners in the EU by



would save 0.1 Mt CO₂ per year by 2030, the equivalent of taking 50,000 cars off the roads

would save around 0.3 Mt CO₂

would correspond to about 0.5 Mt CO₂



EU rules from 2013 already curbed the energy use of vacuum cleaners, and also set durability requirements on their hoses and motors. However, according to our analysis, this may not be enough. Vacuum cleaners should be kept for 11 to 18 years if we wanted to compensate for the greenhouse gas emissions of production, distribution and disposal.

Setting stronger reparability standards will become ever more important to ensure durability and offset the increasing climate impact linked to the production of more sophisticated components such as batteries and onboard computers.

THE RIGHT TO REPAIR: LET US FIX IT



The findings of this report add pressure on policy makers to ensure our products are designed to be repaired and last longer. The greater the impact linked to manufacturing, distributing and disposing of a product, the longer it should be in use.

From the US to Europe, a growing number of policy experts and volunteers are pushing for laws to help people retain their right to repair. In the EU, the Right to Repair movement has already secured the [adoption of the first requirements](#) obliging manufacturers to make products such as washing machines, fridges and TVs more easily repairable. The requirements are part of the EU's Ecodesign Directive, which removes the most wasteful products from the market, promoting innovation and sustainability.



Given the threat posed by the climate crisis and plans to decarbonise our economy, campaigners now want product standards to support product life extension, material efficiency and global warming reduction potential linked to manufacturing. The focus should be on:

- Designing durable products that can be disassembled with basic tools
- Making spare parts and repair manuals available to all, including independent repairers and repair cafes
- Promoting interchangeable casings, upgradability of both hardware and software, and replaceable batteries and screens
- Developing business models such as affordable leasing or product-as-a-service, which provide users with access to the product rather than ownership
- Developing tools to account for the climate benefits of product life extensions, e.g. under the EU's Ecodesign Directive
- Displaying lifetime and repairability information on products, e.g. with the EU energy label
- Establishing incentives or tax reductions to create a vibrant market for repair, which would reduce costs, encourage repair and create thousands of new jobs.

This report, with hyperlinks, is available at www.eeb.org/coolproducts-briefing.

A longer version of this report, including a comprehensive list of sources and methodology, is available at www.eeb.org/coolproducts-report.

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The Coolproducts campaign brings together policy and technical experts to ensure product policy benefits people and the planet. It's led by the European Environmental Bureau (EEB) and ECOS. The EEB is responsible for this study.



RIGHT TO REPAIR

The Right to Repair campaign advocates for longer-lasting products that can be easily repaired instead of being replaced.



EEB
European
Environmental
Bureau

The EEB is the largest and most inclusive network of environmental citizens' groups in Europe. Our 150 members from 35 countries cooperate across a uniquely broad range of issues. Together, we advocate for progressive policies to create a better environment in the European Union and beyond.