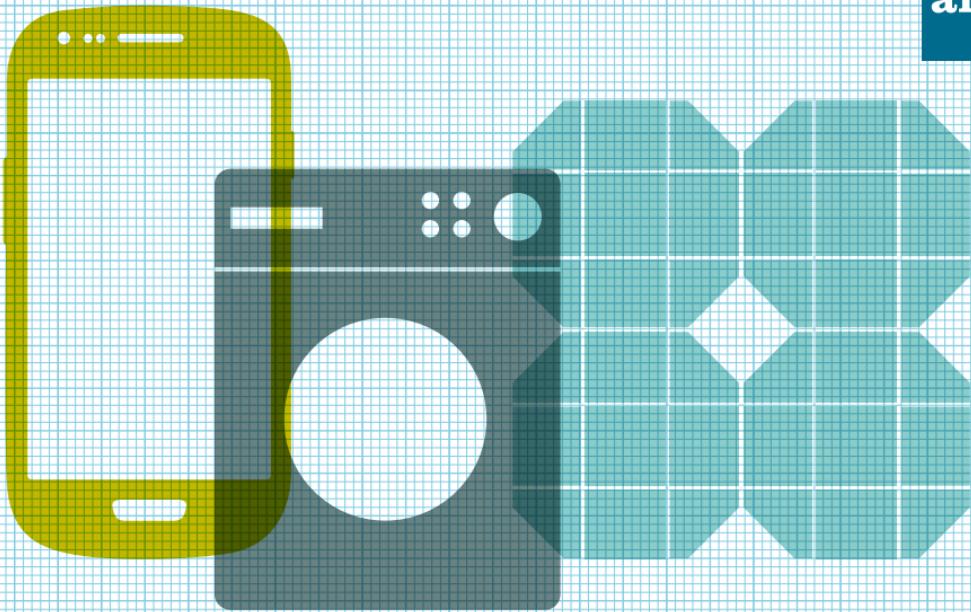


Better products by design
Ensuring high standards for
UK consumers



“ green
alliance...

All across Europe, consumers are getting a bad deal: too many new products don't last as long as they should. The result is a huge waste of money and resources.

Premature obsolescence is partly a result of market failure: it's difficult for people to work out whether a product is durable or not. But better products are possible and government can help to improve them.

Our analysis of three products reveals how simple problems that frustrate consumers and waste resources could easily be fixed with new product standards for repairability and durability.

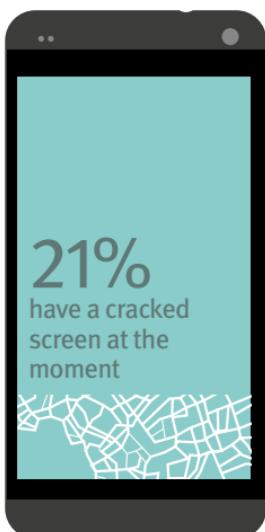
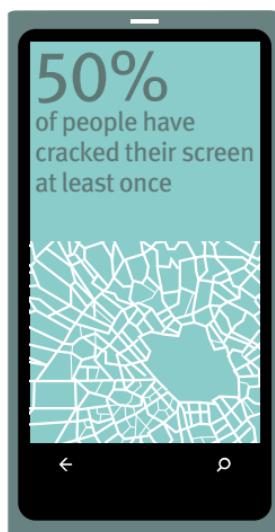
None of the solutions we advocate require new technology or business models, just market rules that keep manufacturers competing over quality.

The EU's circular economy policy package, which is being negotiated now, should set ecodesign standards to ensure better products.

Phones that last longer would be good for people and the planet. British consumers spend £1.1 billion on fixing broken screens. Keeping a phone going for just one more year can cut its overall carbon footprint by a third.

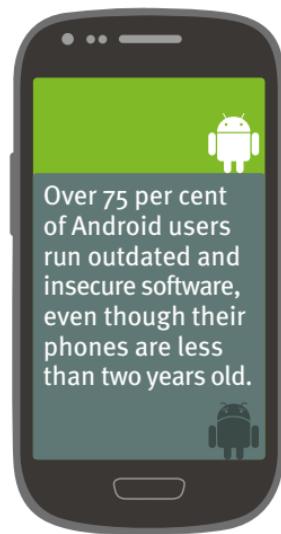
Today's smartphones fail too soon because of broken screens...

Nearly half of people say cost puts them off repairing their phone, and more than half upgrade because their phone is broken



...and outdated software

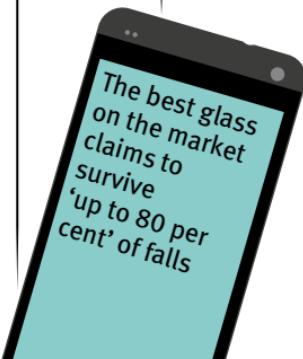
Phones which can't be upgraded have “little to no resale value”



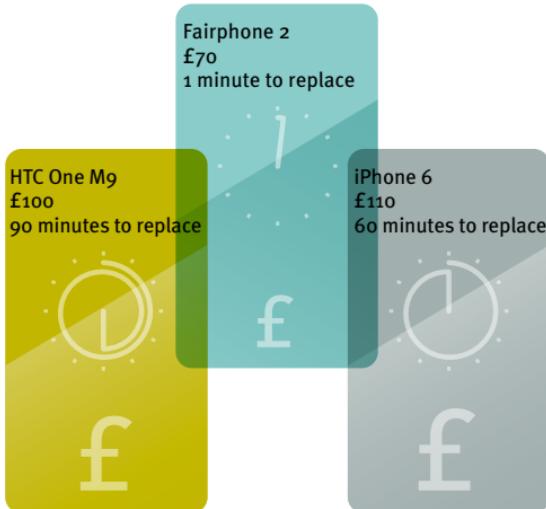
But there are solutions

More durable screens already exist

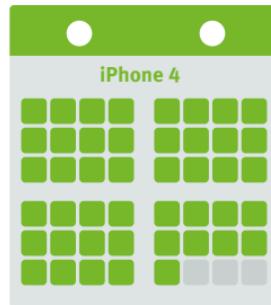
Standard glass means screens break up to four out of every five times they're dropped



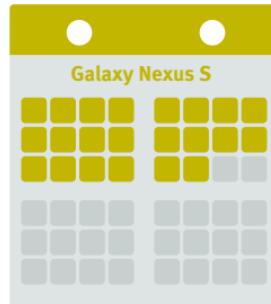
Easily replaceable screens already exist



Longer software support is possible



45
months support



22
months support

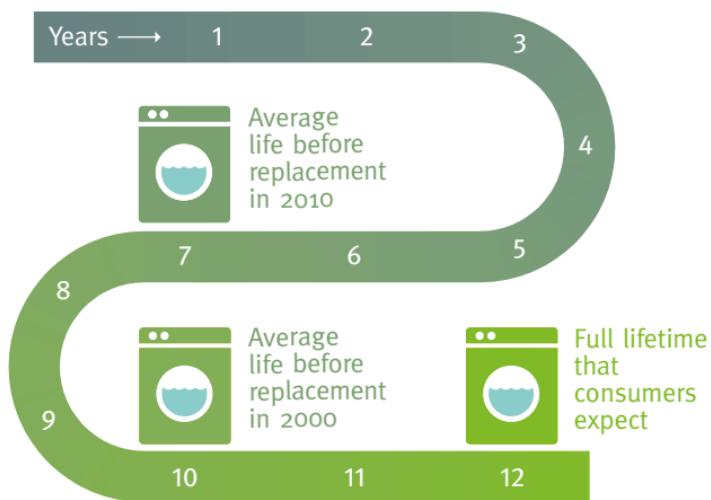
The proportion of washing machines replaced due to manufacturing defects that are less than five years old has more than doubled.

If washing machines lasted as long as consumers expect, Europeans would save £3.6 billion and generate 900,000 fewer tonnes of e-waste annually.

They don't make them like they used to

The average lifetime of a washing machine fell by a third between 2000 and 2010

They're now replaced once every seven years, even though consumers expect them to last 12 years



One in six machines now fails
in its first five years



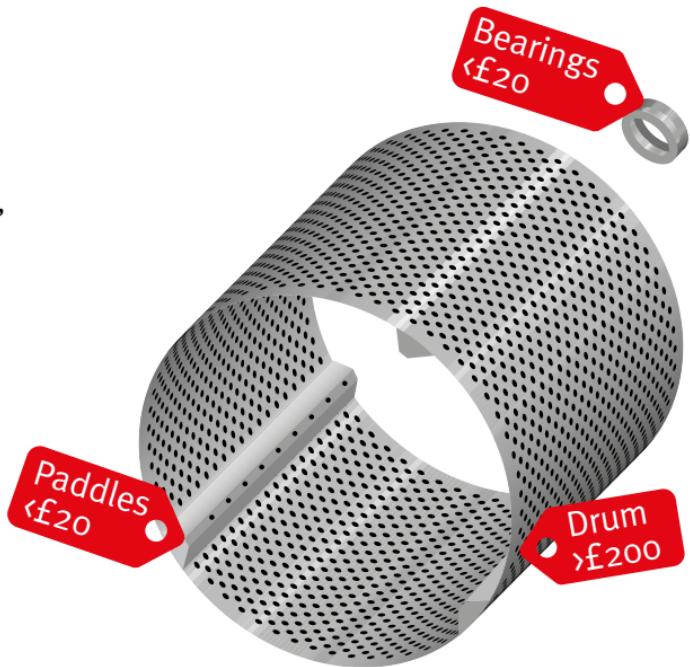
But modular design can end early obsolescence

Components subject to wear and tear
can be designed for repair

Most washing machines now use
unreplaceable bearings and paddles,
meaning the whole drum has to be
removed, costing over £200.

Replaceable paddles and bearings
cost less than £20 to repair.

Similarly, detachable hooklets
mean these can be replaced without
throwing away the whole door.



More durable doesn't have to mean more expensive over a product's lifetime

Average washing machine:
7 year lifetime



Durable Bosch washing machine:
10 year lifetime, guaranteed

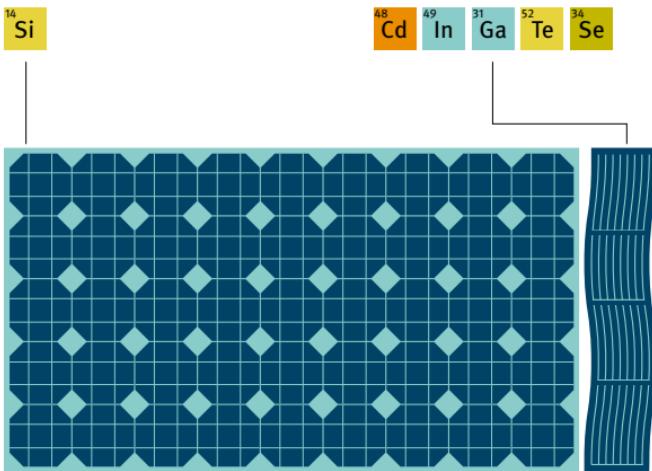


Solar is one of the greenest forms of power, projected to triple in the next decade. But making solar panels is a resource and energy intensive process. Using panels for longer reduces their carbon footprint and keeps critical materials in use.

Recycling destroys critical materials

91 per cent of solar panels are made of purified silicon. This is a critical material, essential to the industry but subject to supply disruptions.

The remaining nine per cent of solar panels are made from thin films, which depend on five other critical materials: indium, tellurium, gallium, selenium and cadmium.



The solar cell is the most valuable component of a panel, and 76 per cent of a panel's embodied energy is from purifying the silicon inside the cells.

But solar cells are embedded in non-melting plastics so cannot be recovered by standard recycling processes. Instead panels are crushed to recover low value materials, destroying the cells.

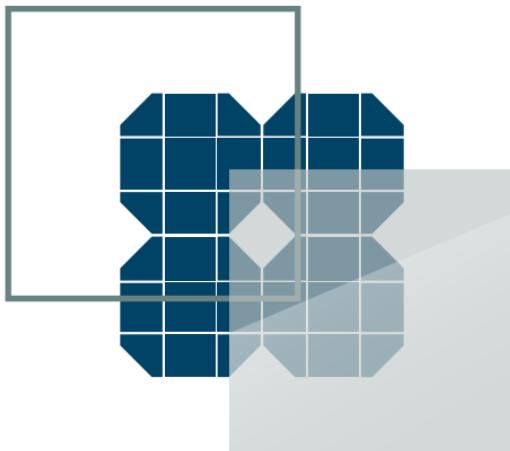
Less than two per cent of a solar panel's value is recovered by recycling



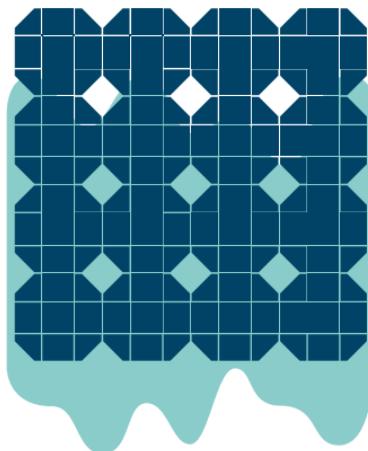
But better designs save resources and last longer

Reuse cuts solar's carbon footprint by two thirds

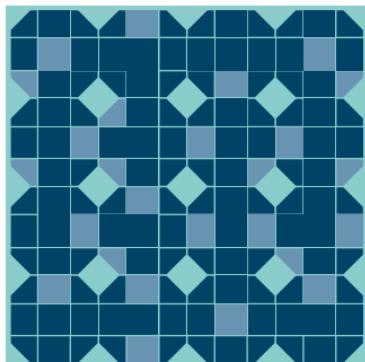
Detachable frames and glass mean solar panels can be disassembled for reuse



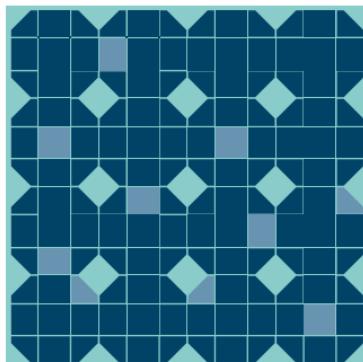
Using thermoplastics to seal panels means solar cells can be recovered by melting the plastics away rather than being crushed



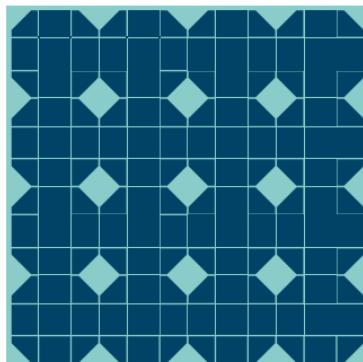
Average panels lose 20 per cent of their efficiency after 25 years due to water ingress, contamination and material weaknesses. But good design means leading manufacturers' panels last at least ten years longer. The best panels don't degrade at all.



Average panel after 25 years:
20% efficiency loss due to water ingress



Good panel after 25 years



Best panel after 25 years:
no degradation at all



Simple design choices make the difference between high quality products and premature obsolescence.

Regulating for better design at EU level is more effective as most national markets aren't big enough to justify setting their own rules, and having to meet different regulations in different countries would drive up product costs.

The EU has already used ecodesign to improve lighting, vacuums, boilers, and computers, saving households £160 and cutting environmental impacts.



The EU should set new requirements for these products:

Smartphones

More durable or repairable smartphone screens.

A minimum of 3.5 years of software support.



Washing machines

Modular design for common points of failure like bearings and doors.

Components designed to last at least ten years.



Solar panels

Improved sealants and plastics which facilitate silicon cell reuse; or a minimum lifetime of 35 years for solar panels.



If Britain leaves the single market, products sold in the UK won't automatically be subject to EU rules to make products more durable, efficient, and repairable. However, British manufacturers will still have to match these rules if they want to sell into the single market.

Most manufacturers design products to comply with regulation in their largest market, so many products sold in the UK from Europe will be durable, repairable and efficient.

The risk is that low quality manufacturers will also be able to sell shoddy goods into the UK's unregulated market.

To make sure British consumers don't lose out, the UK should match the EU's ecodesign rules, even if it leaves the single market, and help British manufacturers to meet EU rules early so they can compete effectively in the European market.

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