

By popular demand

What people want from a resource efficient economy



“green alliance...”

CIE-MAP

Centre for Industrial Energy, Materials and Products

Executive summary

To make a successful transition to a low carbon, resource efficient economy, businesses and governments need to understand what people value and want from the products and services they use.

This report presents findings from research carried out by the Centre for Industrial Energy, Materials and Products (CIEMAP) on public attitudes towards policies intended to improve resource efficiency. The analysis is based on a detailed, representative survey and focus group data collected between 2016 and 2018.

The research found that almost everyone – nearly 90 per cent of the people surveyed – strongly believed that society should be more resource efficient. Some approaches to resource efficiency are already very popular, particularly product and packaging design changes and extending product lifetimes.

Significantly, the research shows that measures offering the biggest carbon savings, and over which the government has most control, are those that are most popular with the public. This is an excellent opportunity for policy makers.

Previous research undertaken by Green Alliance and CIEMAP showed that resource efficiency could significantly contribute to the UK meeting its carbon budgets, by filling the policy gaps in the government's Clean Growth Strategy.¹

Here, we demonstrate how government and businesses can make the most of the opportunity offered by resource efficiency for household goods to improve material use and reduce emissions.

Our recommendations

1

Go for quick wins first by improving the design and lifetimes of products

Ambition in these areas is already strongly supported by the public.

Policies which encourage the design of resource efficient products could reduce the embodied emissions of products by nearly 20 per cent.

This saving could rise to nearly 40 per cent if used in combination with policies that extend product lifetimes and encourage product sharing.

2

Tailor resource efficiency policies to chime with people's values

CIEMAP's research shows that strategies that protect the environment, develop a strong and ethical economy and provide high quality products are most likely to find favour with the public.

There are a range of other criteria which are important to people and determine whether or not they find a particular strategy acceptable. These vary in importance, but include wanting to know that measures are fair, affordable and convenient, that they do not restrict choice and that they enhance community connections.

In the first instance, we recommend improving consumer rights to address concerns around trust.

3

Don't assume that only cost matters

People have complex motivations, and are not driven solely by cost. They favour strategies to cut carbon and material use if they align with their values.

Carefully testing future propositions by engaging with people early, and addressing their concerns and motivations, will expand the range of policies the government can use to achieve much greater resource efficiency right across the economy.

Introduction

A mandate for resource efficiency

Resource efficiency is a major new policy tool for carbon reduction. Previous research by the Centre for Industrial Energy, Materials and Products (CIEMAP), published with Green Alliance, has shown that resource efficiency strategies could be pivotal for the UK to meet its future carbon budgets and become a net zero emissions economy.²

However, to achieve these goals, the policies adopted by businesses and the government have to be acceptable to the public. This is especially significant as households account for nearly 80 per cent of the UK's total carbon footprint.³

The good news is that resource efficiency enjoys broad support from the public already. New research from CIEMAP, presented here, has found that nearly 90 per cent of the people they surveyed think there is a strong or very strong need to shift towards a society that uses resources more efficiently. Less than one per cent said that there was no need at all to make the shift. What's more, the vast majority of people believe we have a moral

responsibility to use resources more efficiently (85 per cent). Even if a drastic shift towards resource efficiency would change their own lifestyle, more people say they would support this shift (60 per cent) than oppose it (13 per cent).

But this broad backing does not mean there is support across the board for all resource efficiency strategies: the public like some more than others. Attitudes are often driven by personal values and nuanced considerations that might surprise policy makers and economic strategists.

In designing policies, decision makers should take account of the conditions under which they would be socially acceptable. Doing so will enable a smooth and successful transition to a resource efficient future.

Strategies for a resource efficient society

The extent to which the economy is 'circular' and how efficiently resources are used can be improved through a diverse range of approaches. Strategies that require some level of public acceptance and adoption can be grouped around four categories:



Improving design

Products can be designed differently to reduce the consumption of resources. For instance:

optimising products or packaging for reuse or recyclability

lowering material use through product or packaging 'lightweighting'

improving repairability through modular design



Extending lifetimes

Prolonging the useful life of products can be achieved through:

'extended producer responsibility' which encourages producers to make longer lasting products and offer repair services

remanufacturing, where used products are rebuilt to their original specifications and given a new warranty

'product service systems', a business model in which companies sell functions rather than products; for example, consumers could pay for lighting or mobility as a service, but businesses would keep ownership of the products, giving them more incentive to make them efficient, reliable and longer lasting



Sharing products

Also called ‘collaborative consumption’ or the ‘sharing economy’, this approach aims to make better use of items that people do not use all the time. Examples are:

reselling or passing on products to others when they are no longer needed

‘libraries of things’, from which people can borrow products, especially those that often sit idle, like power tools

sharing programmes, ranging from local initiatives to larger platforms like Airbnb and car clubs



Radically changing lifestyle

Major lifestyle changes can reduce the need for products in the first place. Strategies include:

promoting shared living or office spaces to lower the demand for private spaces

carbon or material taxes to replace VAT and discourage the purchase of high carbon materials or goods

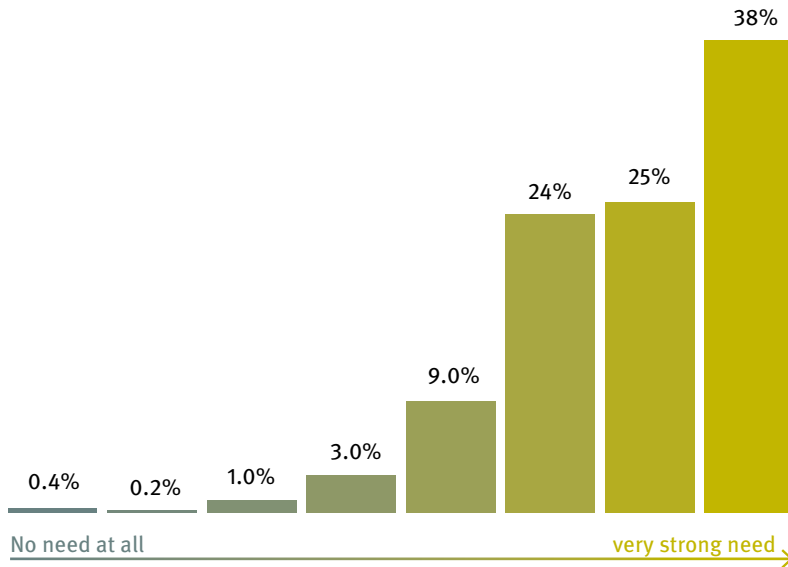
personal allowances that set limits for the material or carbon impact of the goods a citizen could purchase each year

Some strategies work across different categories. For instance, remanufacturing, which falls under ‘extending lifetimes’, also requires improvements to design to increase modularity and allow for easier repair and replacement of parts.

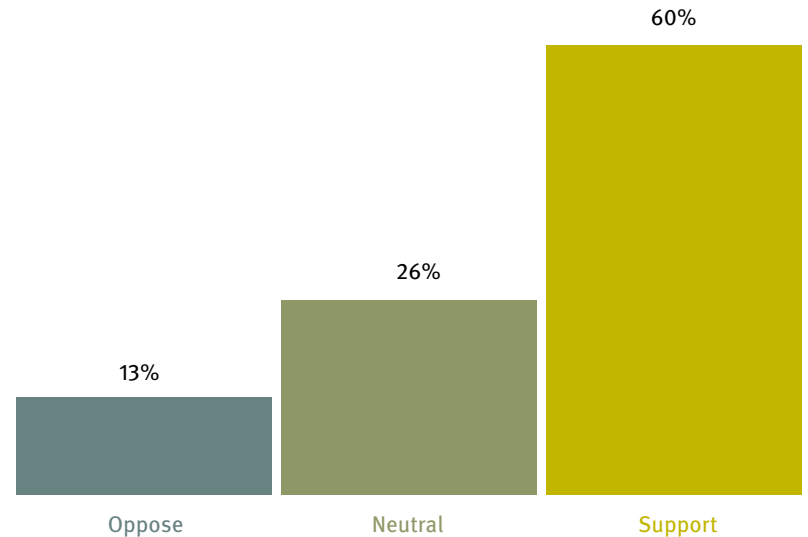
Different strategies could be employed to improve the resource efficiency of a particular product. For instance, cars could be redesigned to require less metal in the production process, used for longer before being replaced, used more intensively through sharing schemes or discouraged altogether by promoting lifestyle changes like using public transport or cycling instead.

The public strongly supports resource efficiency

CIEMAP's research, from workshops and a representative public survey of 1,093 people, found that resource efficiency is broadly supported. Nearly everyone who responded to the survey indicated a belief that we must shift towards a more resource efficient society, even if it affected the way they lived in future.⁴



To what extent do you think there is a need to shift towards a society that uses resources more efficiently?







How much would you support a drastic shift towards a resource efficient society, even if that substantially changes the way you live?

Some strategies are more popular than others

Of course, not all resource efficiency strategies enjoy immediate public support. Some are already popular, especially those that involve improving product design and lifespan, while others would be acceptable if certain conditions were met.

What people think of resource efficiency strategies⁵

Improving design 	Extending lifetimes 	Sharing products 	Radically changing lifestyle 
++ Reduced and recyclable packaging	++ Extended producer responsibility	+ Reuse and reselling products	+ - Shared living or working spaces
+ Product and packaging lightweighting	+ Remanufacturing	+ Libraries of things	+ - Carbon or material taxes
+ Modular and repairable design	+ - Product service systems	+ - Sharing programmes	- Carbon or material allowances

++ Very positive

+ Positive

+ - Divergent

- Negative

Popular strategies offer the largest carbon savings

Policies that are already popular also offer some of the greatest potential for reducing the emissions related to household consumption.

Previous research published by CIEMAP and Green Alliance has shown that improving resource efficiency across the UK economy would significantly contribute towards meeting national carbon budgets. It would allow the UK to meet the targets of its fourth carbon budget and come close to meeting those of the fifth.⁶

Using a similar methodology, CIEMAP's analysis, presented in this report, demonstrates the role households could play in reducing the UK's overall carbon footprint. Researchers modelled potential carbon savings – in both the UK and the rest of the world, via supply chains – that would result from implementing specific measures. It considered the impact of reducing demand for common household

goods responsible for high carbon emissions, including clothing, packaging, vehicles, appliances and furniture.⁷

CIEMAP has modelled strategies that fall into the three categories which are least controversial with the public: improving design, extending lifetimes and sharing products. (Policies encouraging radical lifestyle change were not modelled; these are currently least popular with the public, though they deserve further consideration, as we discuss on page 20.)

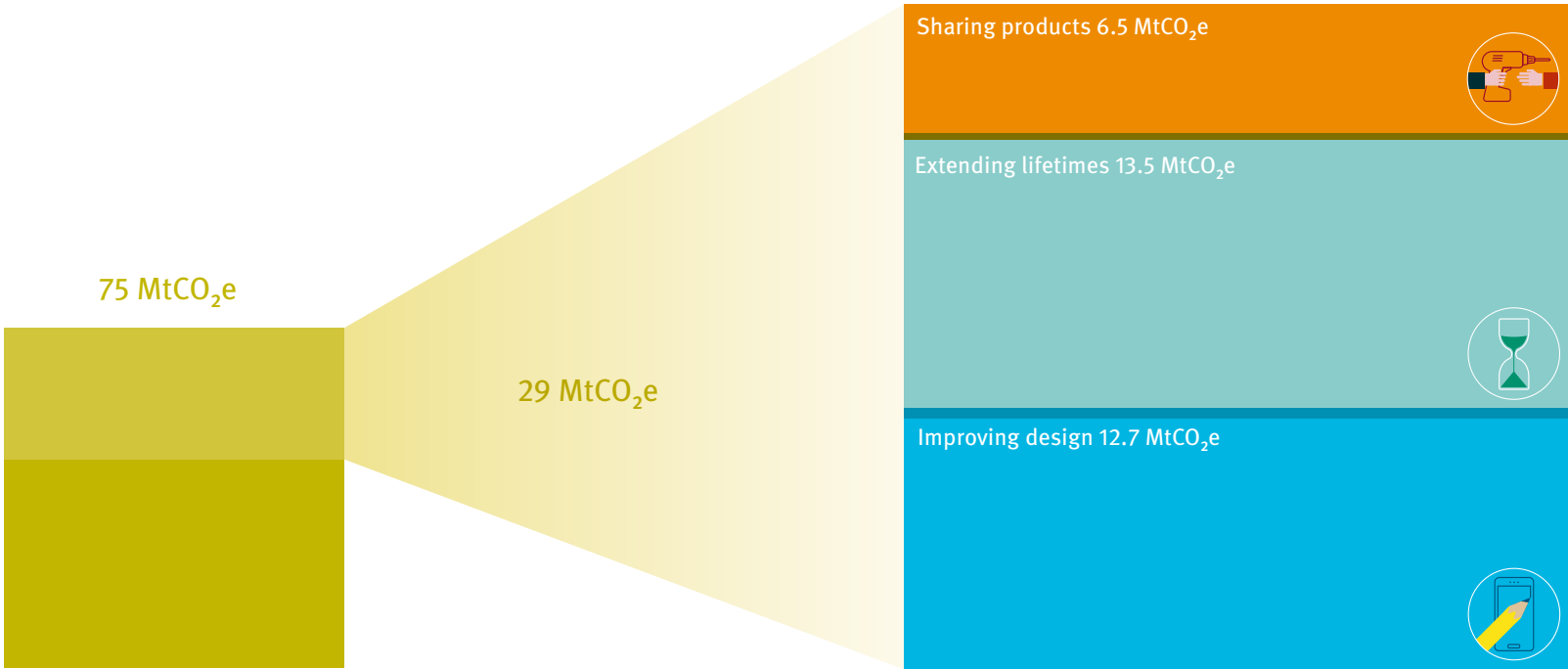
The results show that the embodied emissions in the products studied could be reduced by as much as 39 per cent through combined activity across the three categories, once double counting from overlapping strategies has been removed. This level of reduction would be achieved if strategies aimed at ambitious reductions in material use were adopted by both the supply chain and final consumers.⁸

Improving product design and lifetimes offer the greatest potential savings of the strategies investigated. According to the modelling, action could save around 13 MtCO₂e in each category over a year across product supply chains. That is equivalent to 17 per cent of the embodied emissions for the products studied. As there are fewer products suitable for sharing, potential savings in this area would be lower, at around 7 MtCO₂e.

Potential carbon savings from the least controversial resource strategies

Total emissions of products studied

Combined resource efficiency strategy savings



The savings from radically changing lifestyle were not modelled.

Public support is necessary to go further

To make the most of the opportunity to reduce material use and the associated emissions, public engagement and buy-in is needed.

Support or opposition is driven by people's values and preferences.

CIEMAP's research shows that, across the board, people want resource efficiency strategies that address the following:

Environment

People want a system that supports the sustainable use of resources and reduces waste.

Economy

The public wants an economy that is both ethical and strong, protecting jobs and livelihoods.

Quality

Future policies should provide high quality, long lasting products.

Additionally, CIEMAP's research has identified seven commonly held values that determine whether resource efficiency strategies are acceptable or not:

Values that determine public preferences

Fairness

Resources and responsibility must be fairly distributed in a transparent way.

Trust

Trust – in government, businesses and peers – will be vital, and everyone must be accountable for their actions.

Affordability

Resource efficient products and services should be affordable to protect personal financial security.

Convenience

Strategies that involve little time and effort, and fit well with everyday life, are more attractive.

Safety and hygiene

People want to know that products are safe to use and, if they are shared, that they are adequately cleaned and maintained.

Community connection

Measures that also help to develop strong communities and tackle loneliness – while protecting privacy – are more popular.

Freedom and control

People value autonomy over their lives and the ability to choose the products and services they use.

Some values are more significant for particular strategies

The relative importance of these values varies. CIEMAP's research indicates which are most important to consider when designing a strategy.

The most important considerations for each type of strategy⁹

	Design 	Lifetime 	Sharing 	Lifestyle 
Environment	✓	✓	✓	✓
Economy	✓	✓	✓	✓
Quality	✓	✓	✓	✓
Fairness		✓		✓
Trust		✓	✓	
Affordability	✓	✓		
Convenience		✓	✓	
Safety and hygiene	✓		✓	
Community connection			✓	✓
Freedom and control		✓		✓

Lessons from energy efficiency

Why the Green Deal failed

With resource efficiency, as with energy efficiency, it is not enough to have technologies and systems in place: people have to use them. The failed Green Deal energy efficiency scheme is instructive here.

The Green Deal, launched in 2013, offered loans to improve the energy efficiency of the nation's homes. The need to gain public buy-in was not properly understood by the policy makers and this contributed to the failure of the scheme.

Before the programme was introduced, ministers said it had the potential to improve the energy efficiency of 26 million homes, ie all of Britain's housing stock.¹⁰ But, because it failed to engage the public, only 14,000 households – just 0.05 per cent of the housing stock – took out loans under the scheme before it was scrapped in 2015.¹¹

Furthermore, it saved “negligible amounts of CO₂” (no more than would have happened without it) at a cost of £240 million to the government, according to a National Audit Office (NAO) evaluation.¹²

The NAO's report criticised the government for failing to understand target groups' motivations. In promoting the scheme, policy makers ignored testing that had shown people were interested in non-financial benefits like having a warmer home. Instead, they focused exclusively on potential financial savings, with disastrous results.

The scheme's complexity was also criticised as a turnoff even for interested consumers, with only 50 per cent of those who applied for loans completing the process.¹³

The report concluded that “testing designs with consumers to ensure policies have the desired impact on behaviours” was particularly important for implementing effective energy efficiency policies.

Policy makers aiming to improve resource efficiency should take heed of this lesson, and use insights about public attitudes to align their goals and implementation plans across the different sectors and government departments involved.

“Policy makers ignored testing that had shown people were interested in non-financial benefits like having a warmer home.”

What the public thinks

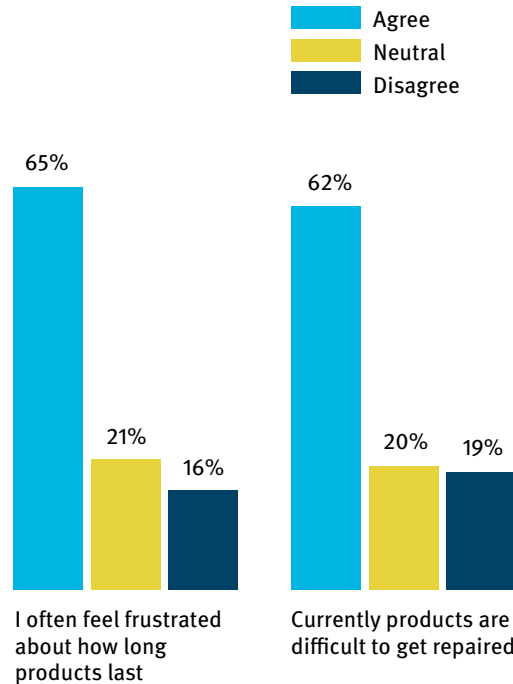


Improving design

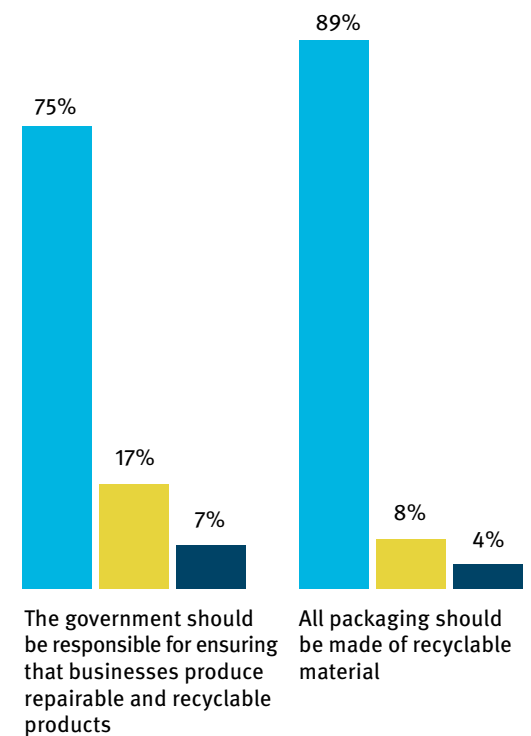
The public is already very supportive of strategies to improve the design of products and packaging, expressing unhappiness about wasteful systems and showing a desire for more standards and regulations.

People are generally positive about redesigning products to make them more durable, repairable or modular, as long as approaches maintain affordability and a high level of choice. They are even more in favour of having less packaging and better designed packaging that is reusable, recyclable and compostable.¹⁴

People are frustrated by product lifespans and lack of repairability



People overwhelmingly support resource efficiency regulations and recyclable packaging



On the suspicion that 'eco-friendly' products will cost more
"You presume the cost of the product is initially higher... that [it] will come at a premium to us as a consumer at some point down the line."

Mia

On the throwaway society
"Looking at how cheap things are – Primani or Primark or whatever ... it's just things are so cheap and then [people are] not going to have the mindset of, oh, well, you know, let's fix it."

Aled

On inbuilt obsolescence
"Some things they make aren't designed to be fixed anyway."

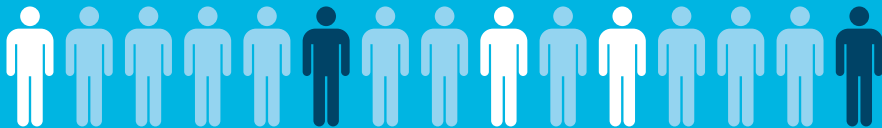
Jim

On redesigning packaging to reduce material use and increase recyclability
"It's bonkers that we're not doing it."

Vicky

On the need for businesses to provide long lasting products
"Seeing that they're the one that is generating the products and we're all consumers of their products, they definitely need to take much, much greater responsibility for providing a product that [has] extended longevity."

Hannah



Most relevant values

Affordability

Safety and hygiene



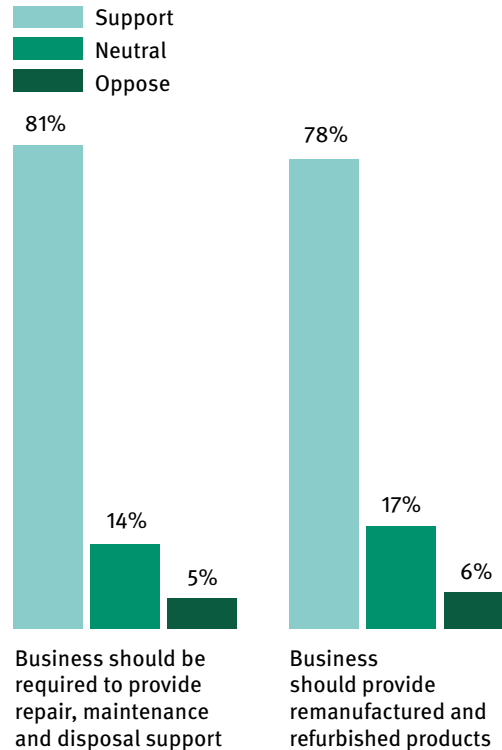
Extending lifetimes

Some strategies in this category are already popular with the public, especially extended producer responsibility, including better repair services, and, to a slightly lesser degree, remanufacturing.

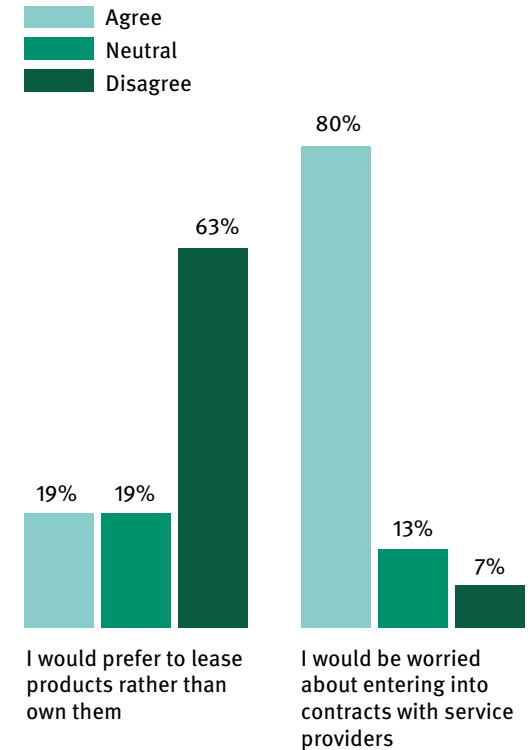
People are generally in favour of increasing product lifetimes and would support more repair services, especially if they were more affordable and convenient.

Distrust of businesses, however, means that some people worry that the profit motive could subvert such schemes. This distrust means product service systems are currently unpopular with some people. Despite considering it a 'good option' for others, when it came to their own financial circumstances, most participants were concerned about the risk of being locked into contracts for everyday products like lights, washing machines or cars. There was concern about the distribution of responsibility, including about liability for product damage. Some said this would make them uncomfortable using such everyday products in their own home.

People think producers should be more responsible and support remanufacturing



People prefer owning products and are wary of contracts with service providers



On no longer owning goods in product service system contracts
“I don’t like the idea of contracts and being tied into something... there’s always loopholes, so God forbid if your kid draws on the washing machine.”
Phoebe

On the need to improve repair services
“Time... is the big issue. Because say [it] takes eight weeks to fix and it’s an essential... instead of waiting the eight weeks, you’re just going to buy another one... regardless of the cost.”
Josh

On extended producer responsibility
“Good idea, though, companies being more responsible for these things they build and how they make them to last a lot longer.”
Jim

On remanufacturing
“It’s a lovely idea so long as you actually know that it’s happening.”
Layla

“More companies should do it. It should be law.”
Carole



Most relevant values

- Fairness
- Trust
- Affordability
- Convenience
- Freedom and control



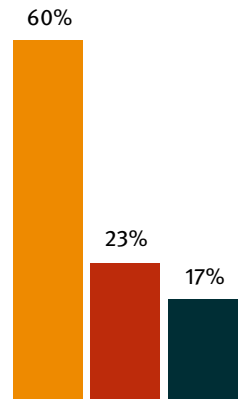
Sharing products

People generally have a positive view of the sharing economy, especially in relation to otherwise unaffordable goods. Of those surveyed, 61 per cent used peer to peer websites like eBay, 63 per cent bought secondhand from charity shops and 65 per cent shared goods with friends and family.¹⁵

Concerns around loneliness and isolation mean that product sharing initiatives like libraries of things are appreciated for the added benefits of increasing community cohesion and social interaction.

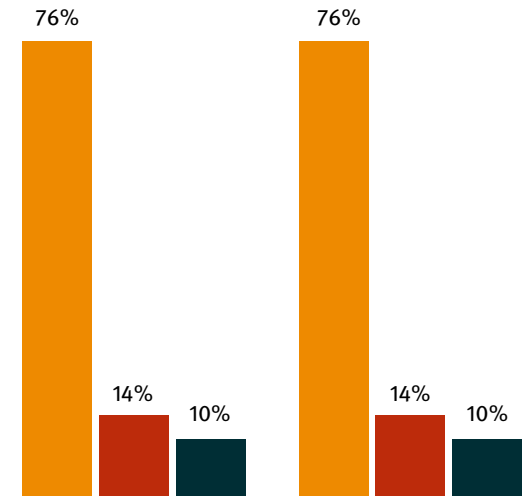
People do have practical concerns, though, especially around convenience, including how much time and effort it will take. Some are unsure about trusting fellow citizens or are worried about hygiene when it comes to sharing products like kitchen appliances, clothing and luggage, suggesting that a responsible body would need to maintain products and conduct safety checks.

People like the idea of community sharing schemes



I would support widespread community product sharing facilities

...but they have some concerns



I worry about the cleanliness of shared products

I would be worried about damaging products that do not belong to me

On community cohesion from social sharing

“It just gets people communicating and involved in caring about stuff instead of in their own little pods, thinking about themselves. That’s what I like.”

Lucy

On the benefits of sharing

“I just like the fact that... communities that are working together... It just seems so handy... helping each other out rather than someone having these high [end] gadgets and someone else not having them... I think that’s really nice.”

Sarah

On the need for shared products to be properly cleaned

“I would never, ever want to borrow luggage unless it had been decontaminated.”

Katie

On the need for shared products to be easy to access

“As long as I can get hold of it fairly quickly and it’s not an inconvenience to get hold of it, it doesn’t take forever, then that’s a great idea.”

Mia

Most relevant values

Trust

Convenience

Safety and hygiene

Community connection





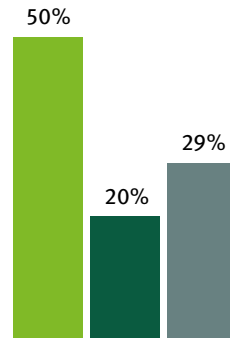
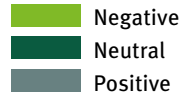
Radically changing lifestyle

Small ‘nudges’ towards sustainable lifestyles, like reducing plastic bag use, have been successful, but bigger changes are needed to meet global climate targets.¹⁶ However, strategies that drastically change patterns of consumption are currently the least popular with the public, although many are open to change.

Opinions were mainly positive about carbon or material taxes to replace VAT, as they would maintain choice and could increase the affordability of greener products. There were concerns about governance and inequality, as wealthy individuals would be more able to keep consuming as they do now. Personal material allowances, which might address that concern, were not popular.

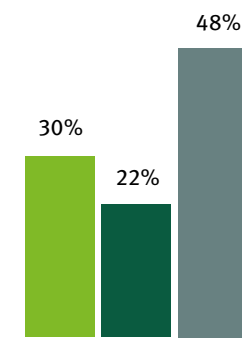
People expressed a clear preference for having their own ample living space, although the idea of communal space was popular. Some also felt it would be fairer for business, rather than citizens, to take responsibility for the level of consumption in society.

People are sceptical about radical lifestyle changes¹⁷



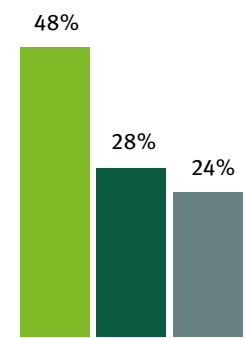
Attitudes about living in a world that would require considerable lifestyle changes

...and are yet to be convinced by material allowances



How much would you support or oppose an annual personal material allowance?

...but are more open to material taxes



How much would you support or oppose material taxes (based on resource efficiency) to replace VAT?

On making consumers responsible for change rather than businesses

“It’s assuming that the responsibility for the consumption sort of lies with the consumer. And I think, whereas the consumer plays into that system... the way that it works, ultimately, is [because of] the corporate practice around these systems... [That is] the root of the problem.”

Arnie

On the potential positives of material or carbon based taxes

“I really like this. This to me makes loads of sense [because] renewable and recyclable materials and products [would be] loads cheaper... At the moment it’s the complete opposite. Anything that’s green and actually good for the planet... is all way more expensive and everyone’s priced out of it. But if it was the other way around, that makes so much sense.”

Phoebe

On the drawbacks of material allowances

“That sounds horrendous. It sounds like rationing... I don’t want to work full time and spend most of my life behind a computer to be told you can only have so much a year.”

Amy

On the potential to restrict living spaces

“Oh my God. I don’t think that’s that nice... you need your own space.”

Sarah

Most relevant values

Fairness

Community connection

Freedom and control



Recommendations for future strategy

1. Go for quick wins first

Policy makers should pursue the quick wins already popular with the public. Improved product design and extended producer responsibility are policies within government control that also offer substantial carbon savings. They are simple and obvious solutions.

Expand ecodesign regulations to mandate resource efficient products and recyclability

This research shows that people want resource efficient products that are lighter and more repairable. The government should build upon the success of the EU's Ecodesign Directive, which has promoted innovation, reduced energy consumption and is projected to save UK households an average of £290 per year by 2020.¹⁸

The EU has indicated it wants to extend the Ecodesign Directive to target resource efficiency in products, focusing on composition, durability, disassembly, reparability and recyclability.¹⁹ The UK government should work with the EU to apply resource efficient product regulations, regardless of the outcome of Brexit.

People also want product packaging to be reuseable, recyclable or compostable. The UK's forthcoming resources and waste strategy could mandate these attributes.

CIEMAP found that, together, these interventions could save up to 17 per cent of the embodied carbon emissions for the products they studied.

Extended producer responsibility

Making companies more responsible for the lifecycle impacts of their products is very popular with the public.

The EU's Circular Economy Package (CEP), which the UK has agreed to transpose into UK law, should see producers cover at least 80 per cent of the lifecycle costs of the materials they place on the market.²⁰

In England, the government is overhauling packaging regulations, and the CEP will apply to other products, like electronics and cars. Other high carbon household goods – like clothing and furniture – could also be suitable for this approach.

2. Give consumers more rights

To popularise other strategies to extend product lifetimes and encourage sharing, policy makers should address concerns around trust by improving consumer rights.

CIEMAP's research shows a high level of distrust of both government (53 per cent expressed distrust, compared to 20 per cent who trust the government) and big businesses (45 per cent expressed distrust, while 19 per cent expressed trust).

Other research has shown that people still do not understand their rights, find it difficult to terminate unwanted subscriptions and that dispute resolution through ombudsmen is “a complex maze, full of inconsistencies”.^{21,22}

New consumer rights could give the public more confidence to buy into new business models, like product service systems and sharing programmes.

Across the board, consumers need easier to understand rights and access to justice when products fail or contracts are unfair. This is particularly important with contracts where the consumer pays per unit of use

(as pioneered for industry over 50 years ago by Rolls-Royce's Power by the Hour service package for aircraft). Such contracts for consumers are new and not explicitly covered by existing legislation or the government's ongoing consultation into consumer rights.²³ As CIEMAP has found, people worry about entering into new contracts like these. A more structured and transparent breakdown of roles and responsibilities, and a more straightforward way to resolve disputes, would help people to accept them.²⁴

Similarly, with sharing programmes, products obtained via peer-to-peer schemes have “no requirement... to be of satisfactory quality”, unlike products sold by businesses.²⁵ This is true even when products are sold through business platforms like eBay.

Addressing this gap – at least to mandate information about the level of rights consumers have – would improve trust.

3. Test all future policy for public acceptability

Policy makers often assume that consumers are mainly motivated by cost. But the results of CIEMAP's research clearly indicates that this assumption is oversimplified, and risks undermining good policy.

People have complex values which determine whether or not they accept policies. Failing to recognise this can lead to policy failure, as the collapse of the Green Deal energy efficiency scheme showed (see page 12).

As the UK transitions to become a more resource efficient society, public perceptions may shift and more policy options will become available to policy makers. These ideas should be tested with the public at an early stage, using insights about consumer values revealed by CIEMAP, to determine if they pass the public acceptability test.

See the annex overleaf for other resource efficiency policy options that would address concerns highlighted in this report.

Annex

Additional policy options that address public concerns about resource efficiency policy identified in CIEMAP’s research. Note that this is not an exhaustive list.

Policy option	Concerns addressed	Comment
A legal definition of remanufacturing	Trust	The British Standards Institution (BSI) has, in line with academic and business approaches, defined remanufacturing as “returning a used product to at least its original performance with a warranty that is equivalent to or better than that of the newly manufactured product”. ²⁶ But the public may still view a remanufactured product as being of lower quality or distrust businesses that say they are remanufacturing products to at least the same standard as new products. The government could, therefore, adopt this common description of remanufacturing as a legal definition, which would allow all remanufactured products to automatically come with a warranty at least as good as a new equivalent.
A certification scheme for remanufacturing	Trust	<p>A certification scheme would promote remanufacturing to the public and improve trust in such products.</p> <p>This should be developed with third parties who currently carry out much of the refurbishment or repair work that takes place on consumer products, but are often disadvantaged in the case of remanufacturing because they lack intellectual property rights and original design specifications held by original equipment manufacturers (OEMs).²⁷ These groups should be involved in the development of certification standards, including potential standards for non-OEM remanufacturing, based on transparency around the sourcing of all parts used. OEMs should be encouraged to recognise or license third party remanufacturing businesses to work on their products.²⁸</p>
Easier wiping of data from electronic devices	Trust Convenience	<p>The government should ensure consumers can easily delete their personal data from their devices, or they will continue to be reluctant to hand in used electronic devices as feedstock for remanufacturing.²⁹</p> <p>Removing this barrier would allow for more reliable feedstock for the repair and remanufacturing sector which, in turn, would make remanufacturing a more common and convenient option.</p>

Policy option	Concerns addressed	Comment
Support expanded sharing schemes	Convenience	<p>Some parts of the sharing economy have been slower to take off than expected. Ensuring there is both a ‘critical mass’ of products to share and a conveniently located sharing space could improve the situation. Those involved in running London’s Library of Things, for instance, have indicated that, not only do people want a sizeable collection of high quality and durable items to borrow, they also want to be able to borrow and return them when it is convenient for them.³⁰ Ensuring that sharing schemes are easily accessible will encourage greater uptake.</p>
Reduce VAT to make repair more attractive	Affordability	<p>People are more likely to accept resource efficiency strategies if they enhance, rather than reduce, their financial security or their quality of life. A number of countries throughout the EU already offer VAT reductions for repair services. Sweden goes furthest with zero per cent VAT on repair and partial reimbursement for the cost of repair labour.³¹ The explicit aim of this approach is to make repair more attractive, according to Per Boland, the Swedish minister of financial markets and consumer affairs in the Social Democratic-Green alliance government that brought in the policy: “Part of that is making it more affordable and economically rational to stop the buying and throwing away, instead of repairing your goods and using them for a longer time.”³²</p>

Endnotes

A full methodology for the research included in this report is available online at: www.green-alliance.org.uk/by_popular_demand_methodology

- ¹ Green Alliance, 2018, *Less in, more out: using resource efficiency to cut carbon and benefit the economy*
- ² Ibid
- ³ C Cherry et al, 2018, 'Public acceptance of resource efficiency strategies to mitigate climate change' in *Nature Climate Change*
- ⁴ In addition to the paper cited above, the majority of information in this report is based on research conducted by CIEMAP researchers at Cardiff University, including in depth qualitative workshops and a representative quantitative survey of 1,093 people. The information on this page is taken from the quantitative survey. Throughout the report, results may not always add up to 100 per cent due to rounding or because of missing data if a participant did not answer a specific question. See the full methodology at: www.green-alliance.org.uk/by_popular_demand_methodology
- ⁵ This chart is based on both the workshops and survey data from the CIEMAP Cardiff research.
- ⁶ Green Alliance, 2018, op cit
- ⁷ The CIEMAP researchers have modelled the savings from specific strategies and case studies, meaning that there would probably be other opportunities to reduce resource consumption and its corresponding emissions. As with *Less in, more out*, the CIEMAP researchers modelled the savings from specific resource efficiency strategies, meaning that there would likely be further opportunities to reduce resource consumption. This new research differs in that it did not factor in consumables like food, which would require different sorts of strategies. It is also a static snapshot of emission savings that would have been possible in the year 2013, the most recent year for which verified information is available. It also takes into account all the emission savings that would occur because of resource efficiency measures, not just those that are emitted in the UK. The methodology for the research described in this section is also available online at: www.green-alliance.org.uk/by_popular_demand_methodology
- ⁸ The research modelled a range of possible material reductions and levels of uptake. The figures in this report represent the maximum achievable emissions reductions. For the design category, this represents the maximum possible achievable emissions reductions that the researchers considered possible. For the lifetime and sharing categories, this represents reductions that are considered feasible but that exceed current best practice for the strategies modelled. See the full methodology online at: www.green-alliance.org.uk/by_popular_demand_methodology
- ⁹ Based on CIEMAP's focus group data.
- ¹⁰ National Audit Office (NAO), 2016, *Green Deal and Energy Company Obligation* report by the Comptroller and Auditor General
- ¹¹ Ibid
- ¹² According to the Office for National Statistics (ONS), there were 27 million households in the UK in 2015, the year the scheme was terminated. See ONS, 5 November 2015, 'Families and households 2015'
- ¹³ NAO, 2016, op cit
- ¹⁴ The overview information in the 'What the public thinks' section is derived from CIEMAP's workshops and survey. The graphs are from the quantitative survey, whereas the quotes are from the workshops. Throughout the report, results may not always add up to 100 per cent due to rounding or because of missing data if a participant did not answer a specific question.
- ¹⁵ These figures represent the proportion of respondents that answered 'always', 'often' or 'sometimes'. Some respondents also replied 'rarely' to these questions.
- ¹⁶ The Intergovernmental Panel on Climate Change (IPCC) has reinforced this view in a special report into limiting global warming to 1.5 degrees, which stresses the importance of demand side measures and lifestyle change in limiting global temperature increase to 1.5 degrees, in line with the goal identified in the Paris Agreement. See IPCC, 2018, *Global warming of 1.5°C, an IPCC special report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty*
- ¹⁷ Respondents were presented with a short (62 second) animated clip that described a world where "we live differently to reduce consumption". The clip then explained the concept of an annual personal material allowance, a material tax to replace VAT, higher use of public transport, less travel overall and the reduction or sharing of private living space. Links to the clip and a full methodology is available online at: www.green-alliance.org.uk/by_popular_demand_methodology
- ¹⁸ Ecofys, 7 October 2016, *Benefits of ecodesign for EU households*
- ¹⁹ The European Parliament in particular has been pushing for expansion of the ecodesign principle to encompass more resource efficiency. See, for example: European Parliament Committee on the Environment, Public Health and Food Safety, 7 May 2018, *Report on the implementation of the Ecodesign Directive (2009/125/EC) (2017/2087(INI))*
- ²⁰ The text of the Circular Economy Package, which amends several key pieces of EU legislation on waste and resource use, reads: "in the case of extended producer responsibility schemes established to attain waste management targets and objectives established under legislative acts of the union, the producers of products bear at least 80 per cent of the necessary costs", including the "costs of separate collection of waste and its subsequent transport and treatment, including treatment necessary to meet the union waste management targets, and costs necessary to meet other targets and objectives... taking into account the revenues from reuse, from sales of secondary raw material from its products and from unclaimed deposit fees, costs of providing adequate information to waste holders, ... costs of data gathering and reporting." See: *Official Journal of the European Union*, Volume 61, 14 June 2018
- ²¹ Citizens Advice, press release, 27 November 2017, 'Citizens Advice reveals consumers spend an average of £160 on unwanted subscriptions during National Consumer Week'
- ²² MoneySavingExpert report for the All-Party Parliamentary Group on Consumer Protection, November 2017, *Sharper teeth: the consumer need for ombudsman reform*
- ²³ The Consumer Rights Act 2015 updated and consolidated consumer protection law, including clarifying unfair contract terms and introducing a new alternate dispute mechanism. However, the government has recognised continuing shortcomings in consumer law, conducting a consultation in early 2018 on a green paper investigating: getting consumers better deals and better service in utilities markets; helping consumers to benefit from their data and remain protected when they buy and sell online; how to improve the system of

alternative dispute resolution (ADR); and how to support local and national enforcers to work together to protect consumers. See: BEIS, April 2018, *Modernising consumer markets*

²⁴ The government should also listen to commentators such as Citizens Advice, which called on it to “mandate alternative dispute resolution (ADR) in all markets”. See BEIS, April 2018, *op cit*

²⁵ *Ibid*

²⁶ BSI specification, 31 March 2010, *BS 8887-220:2010 Design for manufacture, assembly, disassembly and end-of-life processing (MADE). The process of remanufacture*

²⁷ European Remanufacturing Network, November 2015, *Remanufacturing market study*. The report reads: “In the UK for example, it is estimated that social enterprise schemes process 300,000 items a year. Some of these products are refurbished to an ‘as-new’ condition, equivalent to remanufacture.”

²⁸ This already happens in some fields, including automobile remanufacturing. MCT Reman, for instance, has relationships with OEMs including Ford and Jaguar.

²⁹ See, for instance, *Letsrecycle*, 13 November 2017, ‘Data security concerns “hampering” WEEE recycling’

³⁰ Library of Things, press release, 13 November 2017, ‘We’re moving to Crystal Palace’. According to the press release, the aim was to ensure users could: “Borrow from a collection of highly durable, user-friendly things that have take-home packaging and how-to videos / manuals; borrow and return at more times that suit you; easily connect with other borrowers – to organise events, repair things and share ideas for new things.”

³¹ RREUSE, 9 March 2017, ‘Reduced taxation to support reuse and repair’ position paper

³² *PRI’s The World*, 2 January 2017, ‘Sweden tries to curb buy-and-throw-away culture through tax breaks’

By popular demand

What people want from a resource efficient economy

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Green Alliance

Green Alliance is a charity and independent think tank, focused on ambitious leadership for the environment. With a track record of over 30 years, Green Alliance has worked with the most influential leaders from the NGO and business communities. Green Alliance's work generates new thinking and dialogue, and has increased political action and support for environmental solutions in the UK.

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