Social Change UK

Research and marketing that matters

A Circular Economy.

What is it, and how can it be used in your business?

1 Introduction.

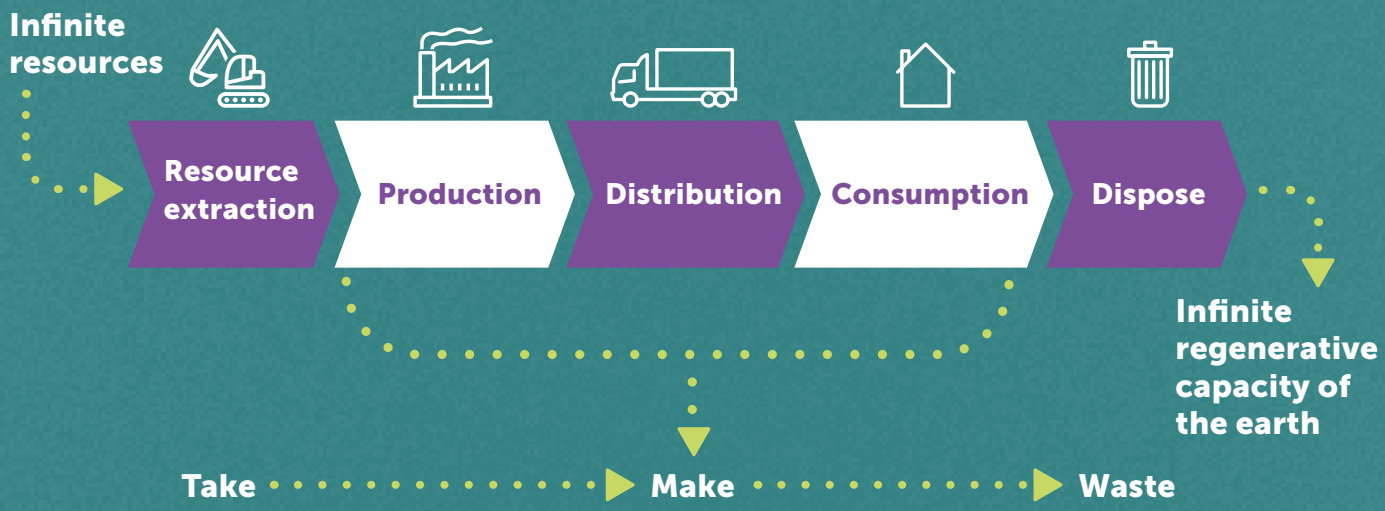
The Ellen MacArthur Foundation (n.d) states that a circular economy "entails gradually decoupling economic activity from the consumption of finite resources and designing waste out of the system. Underpinned by a transition to renewable energy sources, the circular model builds economic, natural, and social capital."[1] Unlike the take, make, waste linear model, this economy is regenerative-eventually removing the need to consume finite resources.

In other words, it's a new way to design, build and use things with minimal waste, and keep products and materials in use rather than throwing them away, all in an infinite loop.

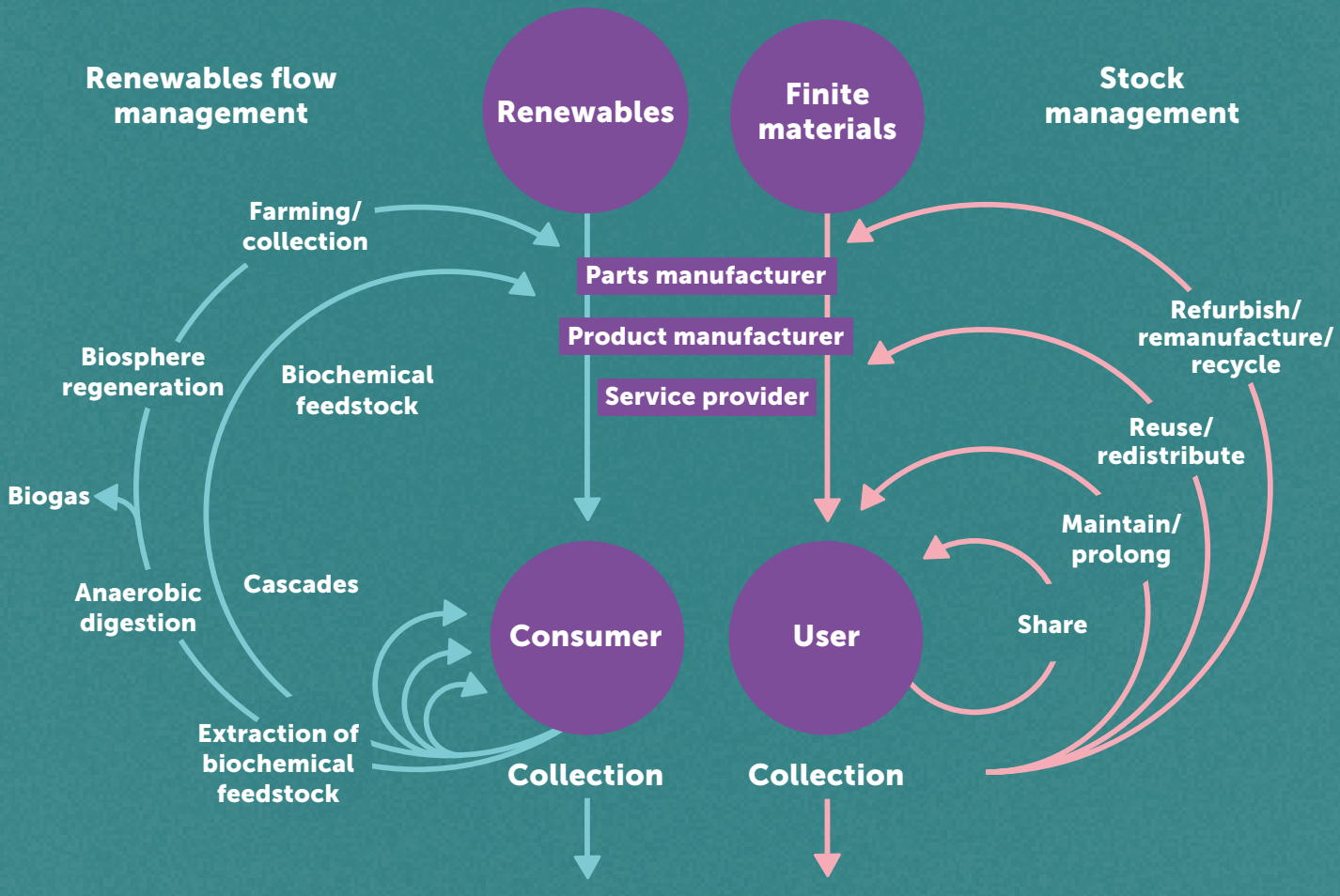
The Ellen MacArthur Foundation, a charity dedicated to raising awareness of a circular economy, created the 'butterfly diagram'. This diagram captures the flow of materials, components, nutrients and products. It demonstrates just how many (or few) steps are needed in a circular economy, showing us that a circular economy is great for both business and the environment.

[1] Ellen MacArthur Foundation, "Concept". Ellen MacArthur Foundation, n.d, https://www.ellenmacarthurfoundation.org/circular-economy/concept

The Linear Economy
Wautelet, T. (2018)



Circular Economy Systems Diagram
Ellen MacArthur Foundation (2019)



2

Principles of a Circular Economy.

A circular economy is based on three principles:

1. **Design out waste and pollution**
2. **Keep products and materials in use**
3. **Regenerate natural systems**

These principles are used to design out both products and activities that damage natural systems as well as human health- by shifting to a circular economy, we can reinvent anything and regenerate those natural systems.

1. Design out waste and pollution

If we create an economy and rethink design so it doesn't need to continually use virgin resources, we can prevent waste and pollution from occurring in the first place.

2. Keep products and materials in use

Have you heard of the 7 Rs of sustainability? They are rethink, redesign, repurpose, repair, remanufacture, recycle and recover; and they're perfect for this principle of circular economies. Rethink design with the other Rs in mind to keep materials circulating in the economy.

The 7 Rs of sustainability

Rethink, redesign, repurpose, repair, remanufacture, recycle and recover.

3. Regenerate natural systems

We should aim to do good- something we are, of course, advocates of here at Social Change UK. If the first two principles of a circular economy are understood and adhered to, non-renewable resources can not only be preserved, but can also be enhanced as we prioritise regenerative and renewable resources.

3

How does a circular economy tackle climate change?

Switching to renewable energy alone will only address 55% of the world's greenhouse emissions- the other 45% comes from production[2]. As the Paris Agreement calls for net zero emissions by 2050, we need to change the face of production using a circular economy.

In developed countries, a substantial amount of greenhouse gas emissions come from the extraction, processing and transportation of raw materials. Reducing our dependence on these materials and methods will not only reduce emissions from those methods themselves, but also reduces the need for infrastructure like oil rigs, pipelines and coal terminals.

With less waste, higher land productivity and the return of nutrients to the soil, land will be degraded at a much slower pace. Currently, land degradation costs an estimated USD 40 billion[3] annually worldwide as we need to replenish land through chemical fertilisers, the third principle of a circular economy will substantially reduce that cost.

Currently, land degradation costs an estimated USD 40 billion annually worldwide

[2] Banks, I. et al., Completing the Picture. Ellen MacArthur Foundation, 2019. Ellen MacArthur Foundation, https://www.ellenmacarthurfoundation.org/publications/completing-the-picture-climate-change

[3] E. Nkonya, W. et al. "Global cost of land degradation". Economics of Land Degradation and Improvement- A Global Assessment for Sustainable Development, edited by Nkonya E. et al. Springer, Cham, 2015, pp. 117-165.

4

How can companies benefit from a circular economy?

The Ellen MacArthur Foundation (n.d) states that a circular economy is "a systemic approach to economic development designed to benefit businesses, society, and the environment."[1], but why should businesses be excited about it?

By shifting operations in line with the principles of a circular economy, it's easy to create cost savings and job opportunities. In turn, showing the world that your company truly wants to do good. Walter Stahel (2014) highlighted several characteristics that benefit companies in Effective Business in a Circular Economy. Take a look below.

01

"The smaller the loop, the more profitable and resource-efficient it is".

Rather than creating a globalised economy, many interlinked local, regional and global scales allow companies to keep the loop as small as possible, reducing the need for middlemen.

02

"Loops have no beginning and no end"[4].

This means there are plenty of opportunities for collaboration along the entire value chain. This also provides opportunities for job creation, especially in areas around remanufacturing and labour-intensive recycling activities.

03

"The speed of the circular flows is crucial: the efficiency of managing stock in a circular economy increases with a decreasing flow speed"[4].

Efficient stock management is key to reducing costs- whether that's saving time on recreating pieces or reducing transportation time and costs in an inefficient stock system.

04

"Continued ownership is cost-efficient: reuse, repair and remanufacture without a change of ownership save double transaction costs"[4].

Not only does this reduce the need to use new or virgin materials, but it also creates a new incentive for companies to lease products.

[4] Braungart, M. et al, A New Dynamic: Effective Business in a Circular Economy. Ellen MacArthur Foundation Publishing, 2014.

Reducing the need for virgin materials plays a huge part in the benefits for business. Reusing and remanufacturing is, of course, generally cheaper than using virgin materials. Much like brownfield land is cheaper than the green belt, it just needs a little more work putting into it. This approach is particularly useful for companies that work with volatile resources such as oil.

"It's estimated that in sectors of complex medium-lived products (such as mobile phones and washing machines) in the EU, the annual net-material cost savings opportunity amounts to up to USD 630 billion"

The Ellen MacArthur Foundation (n.d)[5]

A circular economy also goes hand in hand with a service-based economy. Linking back to Stahel's 4th point above, remanufacturing without changing ownership creates a great incentive for companies to lease out their products or services rather than sell them, for example renting out an industrial washing machine or leasing a car. The rise of a service economy leads to even more job opportunities and entrepreneurship as we enter a new phase of business. On a wider scale, increased revenue from these new activities combined with a lower production cost will eventually lead to increased GDP.

Finally, switching to a circular economy is a great way to attract new customers and customer loyalty for several reasons. As sustainability becomes more and more important to consumers (In 2019, a survey led by Hotwire found that 47% of internet users worldwide stopped using services or products from a company that opposed their personal values- with protecting the environment topping the list[6]), implementing a conscious decision to be more eco-friendly with a radical system is sure to attract loyalty. Rental models also typically establish longer-term relationships with customers due to contracts or increased customer touchpoints, with the opportunity to create invaluable customer service.

It's also important to know that the UK Government are including a transition to a circular economy within their 25 Year Environment Plan commitment. Governmental figures are vital to switching to a circular economy through funding opportunities, consultancy, leading by example or legislation. Take a look at our case study on the Scottish Government's 'Making Things Last' circular economy strategy and what they're implementing to achieve it below.

[5] Ellen MacArthur Foundation, "The Circular Economy In Detail". Ellen MacArthur Foundation, n.d, https://www.ellenmacarthurfoundation.org/EXPLORE/THE-CIRCULAR-ECONOMY-IN-DETAIL

[6] Hotwire Global, High Stakes Leadership in a Post B2B World. Hotwire Global, 2019. Hotwire Global, https://www.hotwireglobal.com/feature/high-stakes-leadership-post-b2b-world

5 Case studies.

From bike-share schemes up and down the country where users rent a city bike for 24 hours, to sustainable cleaning products like Splosh's (one of changemaker Lauren's favourite brands) zero-waste scheme with zero plastic waste and liquids that can safely re-enter the biological cycle, we're surrounded by more circular economy practices than we realise. Below are a few more examples where a circular economy is used to make businesses and policies more sustainable.

Making Things Last

In 2016, the Scottish Government developed their Making Things Last strategy, bringing business sectors and individuals together to move towards a more circular economy. The strategy focuses on four priority areas, tackling environmental and economic objectives:

- Food and drink, and the broader bio-economy- a report by Zero Waste Scotland identified prospective savings of **£500 million to £800 million per year**
- Remanufacture- currently contributes over **£1 billion to annual economic activity**
- Construction and the built environment- generates about **50% of waste in Scotland**, with an opportunity to increase resource efficiency
- Energy infrastructure- potential to reuse equipment from decommissioned oil and gas as **£30-£35 billion** is set to be spent on oil and gas decommissioning by 2040.

With these priority areas in mind, the Scottish Government aim to set up a single framework that drives reuse, repair and remanufacture whilst addressing the costs of recycling and disposal, and plan to cut food waste by a third by 2025.

To improve awareness and capabilities around design in a circular economy, Zero Waste Scotland has put together a number of steps:

- The Circular Economy Investment Fund- £18 million worth of funding for enterprises to deliver carbon savings
- The Circular Economy Accelerator Programme- developing the resource efficiency of Scottish SMEs by identifying opportunities to change the model
- Circular Economy Business Support Service- tailored one-to-one consultancy for SMEs
- A framework for complementary reuse activities- introducing reuse in relation to energy infrastructure
- The Scottish Institute for Remanufacture- developing a remanufacturing community for businesses and academics
- The #MakeThingsLast initiative- engaging the public in recycling and reuse.

Circular Peterborough

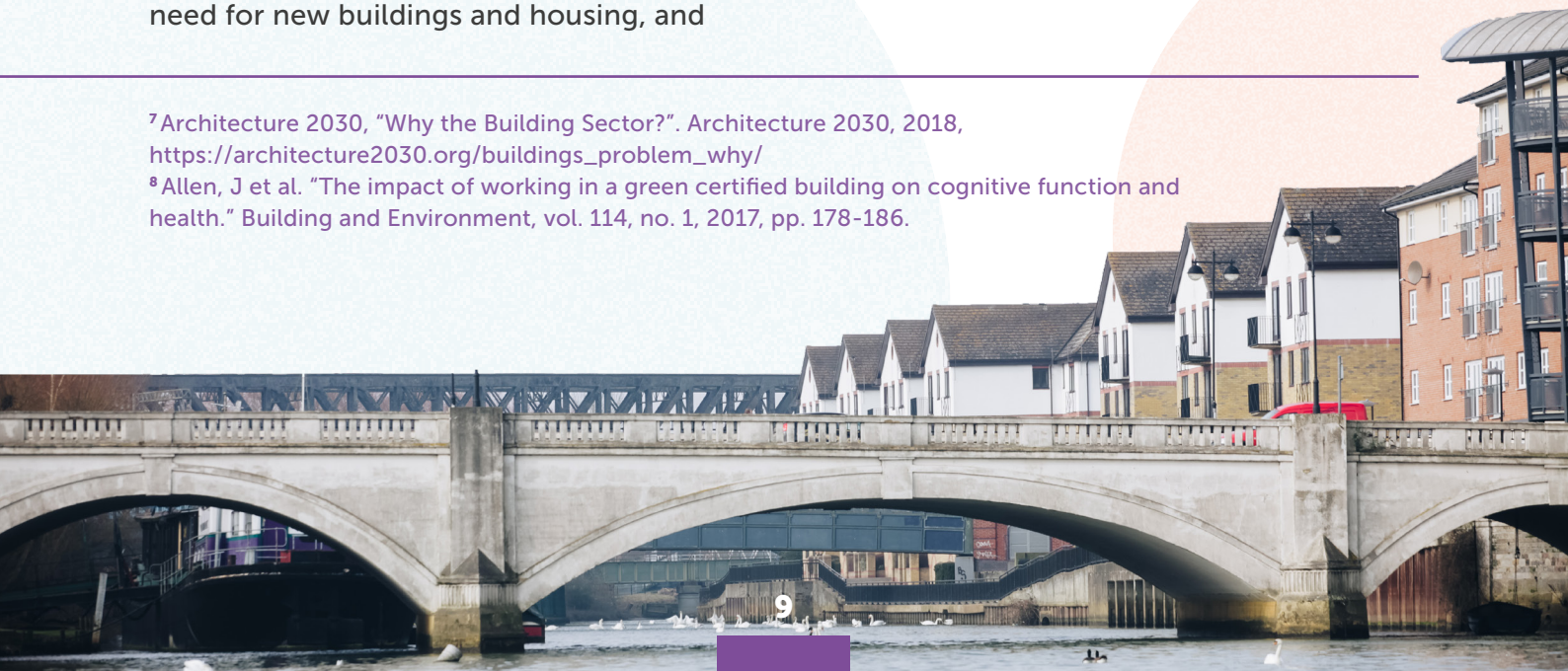
The number of buildings in the world is set to double by 2060[7] - that's the equivalent of building an additional New York City every month. Buildings in cities already account for 30% of the world's greenhouse gas emissions[8] , so surely a city needs to be redesigned into a circular city?

In itself, a circular city can be considered a living system. Urban systems such as services, buildings, mobility, products and food all work in conjunction with each other. Reframing a city in a circular economy will help reduce its carbon footprint, rethink city space to reduce the need for new buildings and housing, and make the space more liveable with improved mobility.

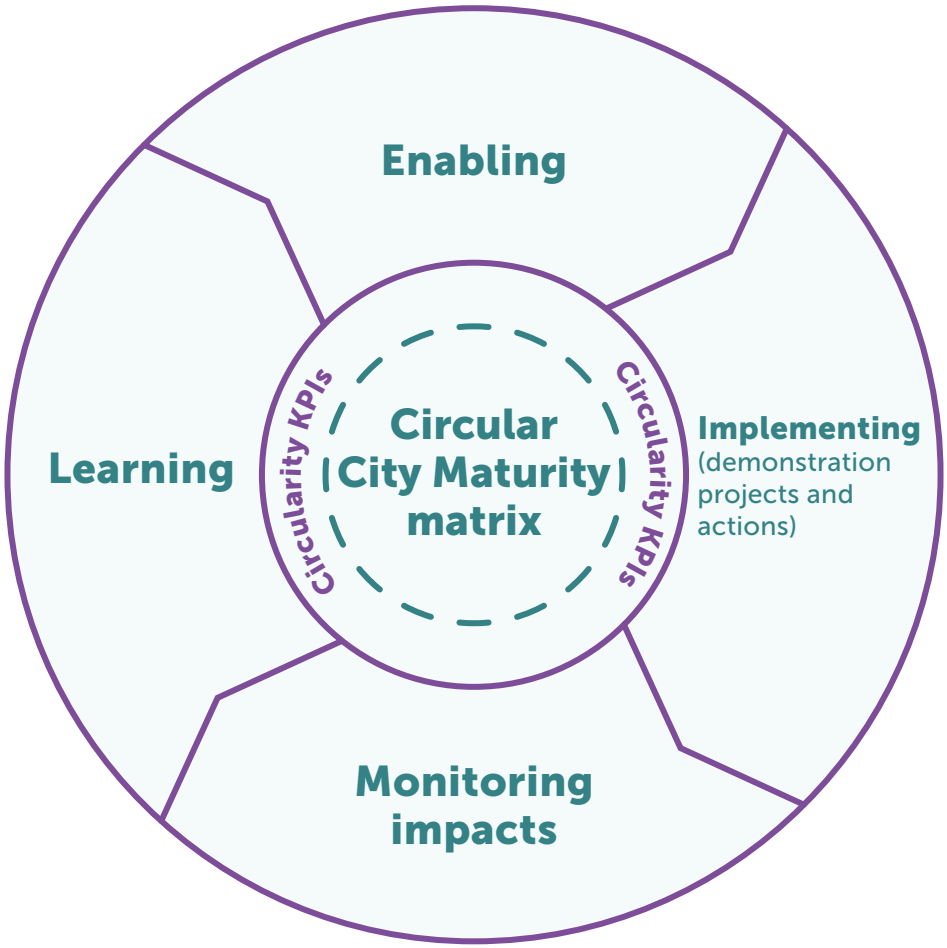
The Circular Peterborough programme is the first of its kind in the UK. It has been created to apply circular economy principles at a city level, rather than Scotland's national level.

To become a circular city by 2050, the team have developed performance indicators in their Performance Monitoring Framework and created a Maturity Matrix to measure their success.

[7] Architecture 2030, "Why the Building Sector?". Architecture 2030, 2018, https://architecture2030.org/buildings_problem_why/
[8] Allen, J et al. "The impact of working in a green certified building on cognitive function and health." Building and Environment, vol. 114, no. 1, 2017, pp. 178-186.



Circular City Maturity Matrix,
Opportunity Peterborough (2018)



Circular Peterborough's Performance Monitoring Framework features several projects created to hit their KPIs. Take a look at some examples:

- Share Peterborough- a community for swapping and sharing everything from borrowing a printer to swapping skills and renting out spare rooms
- Farm of the Future- creating a real closed-loop farm
- Circular Coffee Chain- using a coffee chain to demonstrate a circular economy in everyday life
- Circular Policy- developing an adaptable template for businesses
- Serpentine Green Renovation- the UK's first circular shopping centre.

Rental Fashion

9,513 items of clothing are dumped in the UK every 5 minutes[9] - just think how many garments have been dumped while you've been reading this guide! The rise of fast fashion has led to the apparel industry generating 10% of the world's CO2[10], and emitting 1.2 billion tonnes of greenhouse gas emissions annually[11].

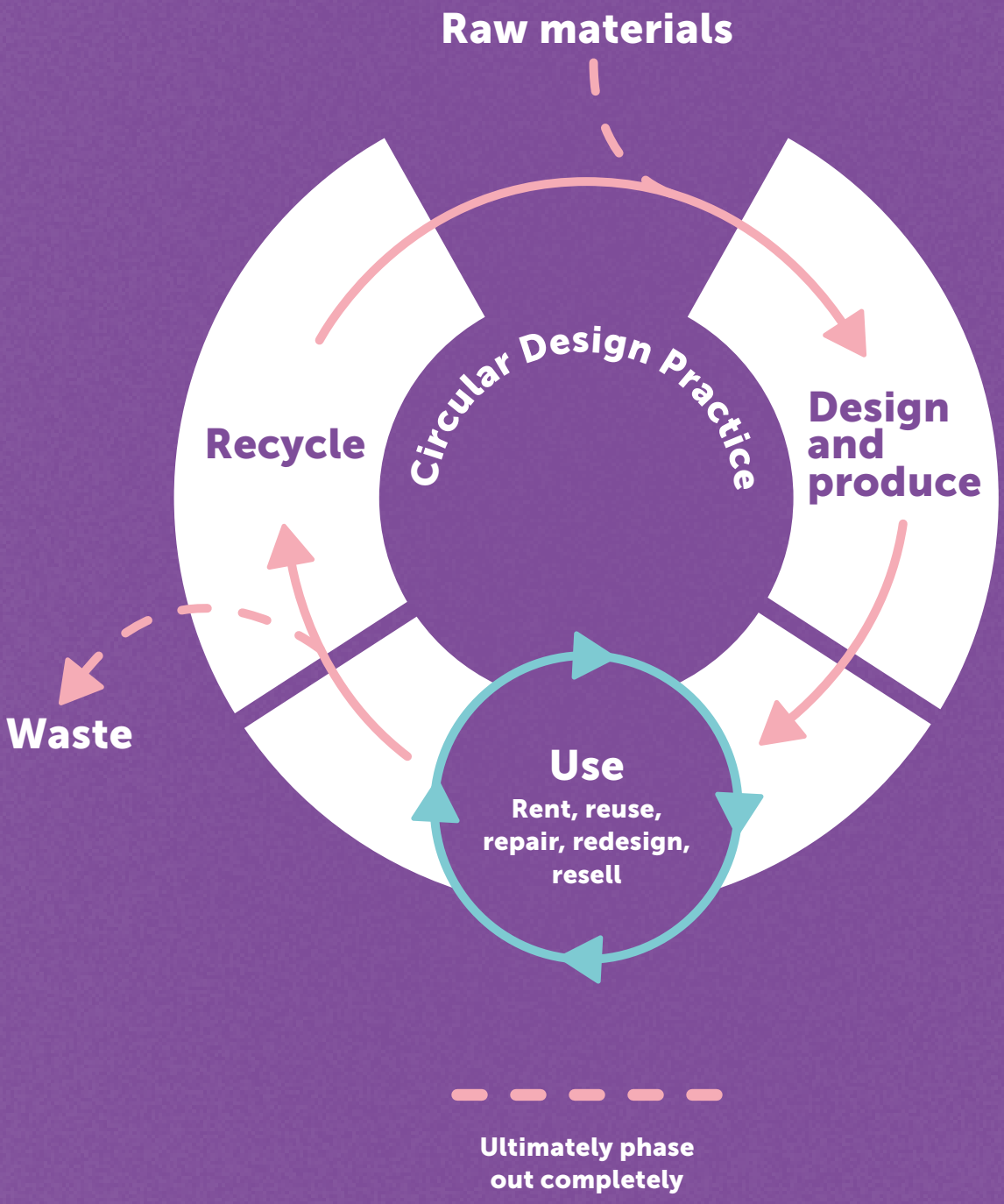
Fortunately, the principles of a circular economy can easily be applied to the textile and clothing industry to limit these harmful figures. There are a few different ways to do this, including recycling stations in stores like H&M, designing clothes in a way that makes them easier to recycle like the ASOS Design Circular Collection, re-wearing charity shop and vintage pieces, or renting your clothes. However, we must note that many of these fashion brands have a lot more to do before implementing a full-scale circular economy.

The rise of fast fashion has led to the apparel industry generating 10% of the world's CO2

The rental clothes model helps lengthen the life-span of each garment, a critical discussion point when the 'wear it once (and throw it away)' culture is rife. By implementing other practices, fashion rental companies can remove the need to use virgin materials at all. Keeping clothes for an extra nine months can reduce carbon, waste and water footprints by 20-30% each[12]. Add in recycling resources, designing for durability over disposability, and caring for clothes more, and it's easy to create a circular fashion economy.

[9] Thomas, D., Fashionopolis: The Price of Fast Fashion and the Future of Clothes. Apollo, Head of Zeus Ltd, 2019.
[10] UNECE, "UN Alliance aims to put fashion on path to sustainability". UNECE, 2018, https://unece.org/forestry/press/un-alliance-aims-put-fashion-path-sustainability
[11] Banks, I. et al., A New Textiles Economy: Redesigning Fashion's Future. Ellen MacArthur Foundation, 2017. Ellen MacArthur Foundation, https://www.ellenmacarthurfoundation.org/publications
[12] WRAP, "Extending clothing life protocol". WRAP, n.d, https://wrap.org.uk/resources/guide/extending-clothing-life-protocol

A Circular Fashion Economy
Common Objective (2019)



6 Conclusion.

That's a wrap! We hope this guide has taught you a little more about the three principles or a circular economy, and inspired you to make the change. Whether you're an SME or a government organisation, there is an opportunity to implement this new economy, and inspire others to do so. Moving to a circular economy may not be a quick process, but it is vital to living within our means and looking after our planet.

We only work with organisations that want to bring about positive social change, and people who want to do good. This is you... let's work together.

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