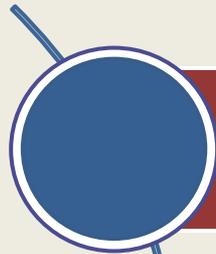
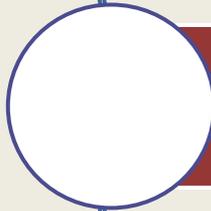


Facilitator's Guide: Workshop for Finding Opportunities in the Circular Economy

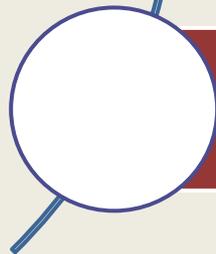
Facilitator Guide



Preparation for the Workshop



People, Venue and Equipment



Slides for the Workshop

Your Knowledge for the Workshop

- First of all make sure you've fully read all the information on the CircularEconomyToolkit
- Familiarise yourself with the introductions, benefits and considerations as this will improve your knowledge and make the workshop run smoother
- **Pay particular attention to the case studies.** They feature in the workshop slides and were rated as being one of the most interesting parts in the pilot workshops

Preparation for the Workshop

- Good preparation and analysis will improve discussions in the workshop and lead to more intelligent debates
- If you don't have time, don't worry. The workshop might have a next step to find more information in a particular area.
- The types of analysis used in the pilot workshops were:
 1. Product Analysis
 2. Competitor Analysis

Product Analysis

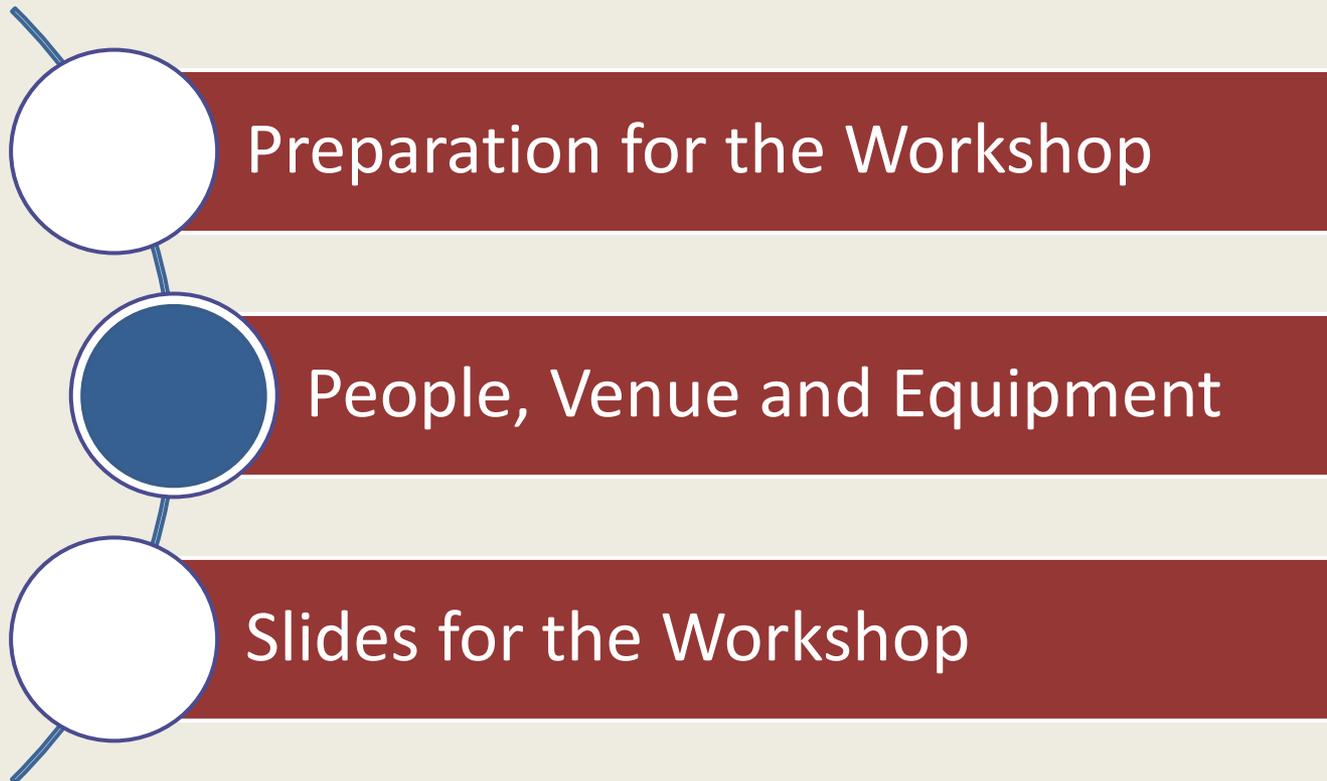
- There are many types of analysis you can complete on your product to assess the environmental impact and to find opportunities.
- The most useful analysis tools found from the pilot workshops were:
 - Material scarcity and prices - *for your products' materials*
 - Life cycle carbon emissions - *from raw materials to disposal*
 - Material Input per Unit of Service – *total resources used for a service unit*
 - Material Flow Analysis – *where materials come from and go to*
- Use the tools on the CircularEconomyToolkit website to find out how to complete the analysis:



Competitor Analysis

- Observing your competitors will allow you to see where others are potentially finding benefit where you could improve
- Think about in-direct competitors. For example, if independent businesses are already remanufacturing products similar to yours, why couldn't you do the same?
- Look across all 7 opportunity areas to see what your competitors are doing
- Add the competitor company logos to the workshop slides in the case studies. Walk your workshop attendees through them in the session and discuss if your business could do something similar

Facilitator's Guide

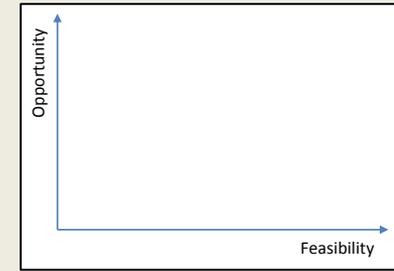
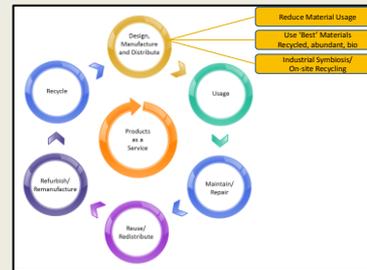


People

- Getting the right people to attend the workshop is essential
- Information from across the business is needed to fuel interesting discussions and to find opportunities
- The workshop covers many areas of opportunity and attendees should collectively have good knowledge across:
 - Product
 - Process
 - Sales and Marketing
- Workshops were found to run best with a minimum of 3 attendees
- Think about the balance of attendee levels; too many management could reduce detailed business knowledge, but too few could reduce buy-in and potential for change to happen

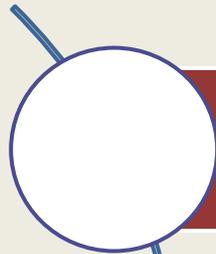
Venue and Equipment

- Use a room that allows people to comfortably walk around and openly discuss their points
- Wall layout of projector, opportunities and prioritisation matrix:

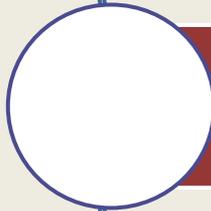


- Equipment needed: projector, post-it notes, marker pens and masking tape (for making a large prioritisation matrix)

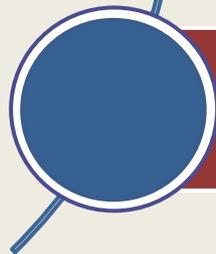
Facilitator's Guide



Preparation for the Workshop



People, Venue and Equipment



Slides for the Workshop

Opening and Agenda

Workshop: Finding Opportunities in the Circular Economy

UNIVERSITY OF
CAMBRIDGE

 Circular Economy
Toolkit

Workshop Agenda

	Intro to the Circular Economy	10 mins
	Objectives of the session	5 mins
	Opportunities overview	5 mins
	In-depth opportunities discussion	80 mins
	Prioritisation of feasible opportunities	10 mins
	Next Steps	10 mins

2 hours

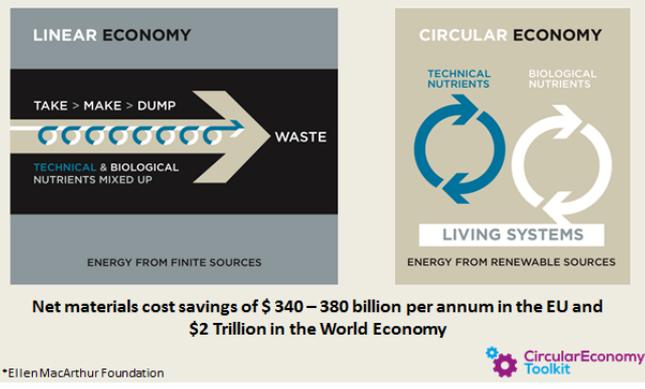
 Circular Economy
Toolkit

- Opening Slide

- Workshop standard time is 2 hours – time keeping required by the facilitator to keep to the schedule and maintain momentum

Circular Economy Introduction

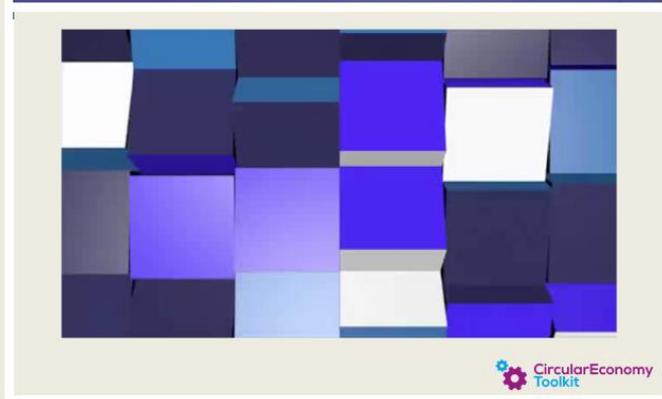
The Circular Economy



Key points:

- Currently working in a linear economy with high amounts of waste
 - Future: circular economy with continuous use and reuse
 - Huge benefit available to companies
 - Failure to adopt circular thinking could bust companies in the future
-
- Make sure you either have internet connection, or download the PowerPoint slides with the embedded video
 - Video runtime: 2min 12secs
 - Check everyone understands the principles before moving on

Circular Economy Video



Workshop Objectives

Workshop Objective

Find Opportunities for
Our Business in the
Circular Economy



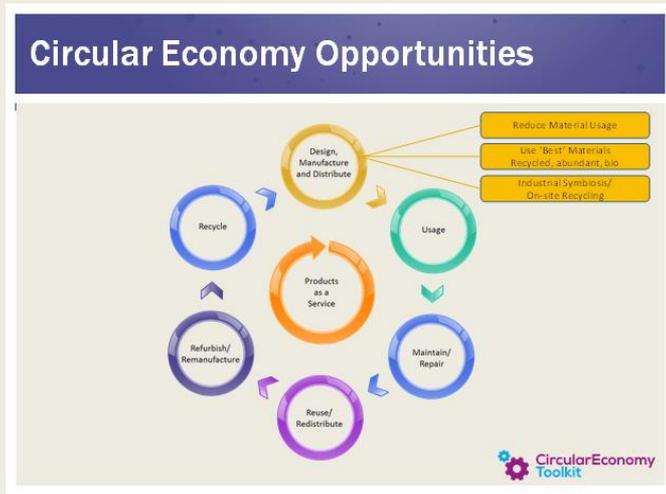
- Clearly explain the objectives
- Ensure everyone understands before moving on

Workshop Agenda



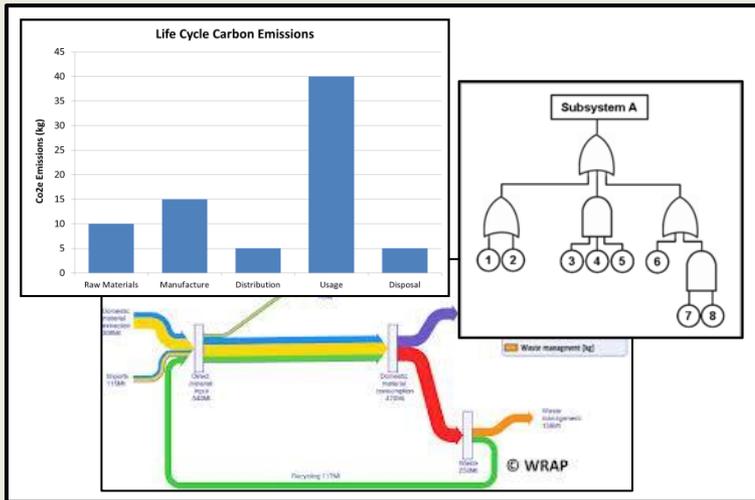
- Circular economy principles and workshop objectives covered
- Next is to give an overview of the opportunities and to start finding them in your business

Opportunities Overview



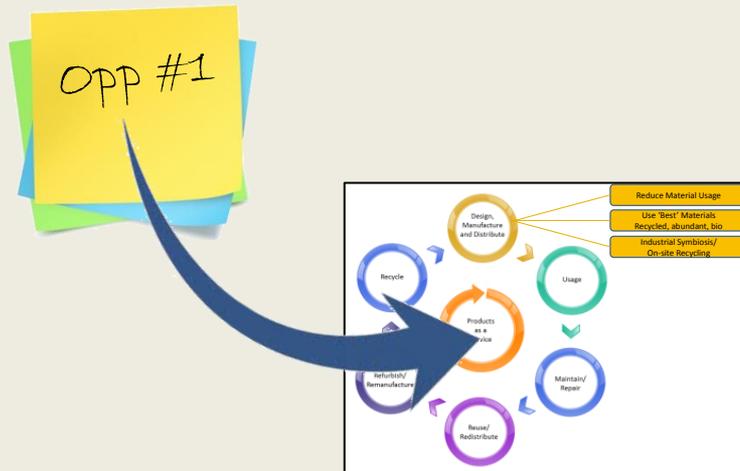
- Walk through each of the circles and the 3 boxes and give a quick summary
- Considering using common examples, like a car. Explain how a car is designed and manufactured to have reduced and optimised materials in a low-waste factory, then how it is designed to be long-lasting and fuel efficient, then maintained when broken, resold when not wanted, parts are remanufactured, then the car is recycled at end of life and how it can be rented or leased

Before Starting the Opportunities...



- Consider adding in any analysis you've created here before going in to the opportunities, or at the relevant points in the PowerPoint

- If a potential opportunity is discussed it should be written down on a post-it and placed on the opportunity summary poster
- It doesn't matter how small or large the opportunity is, as it will be prioritised later



Reduce Materials

Reduce Materials

Design, Manufacture and Distribute

Reducing material usage, or dematerialisation, means using as little material as possible. Done through miniaturisation, light weighting or physical to digital services.

Possible for the **product** or **packaging**

Benefits

- Reduced raw material costs
- Lower distribution costs and emissions
- Less storage space required
- Possible to pass on savings to the customer

Considerations

- Durability of product/packaging could be reduced
- Cost of materials could increase with a change in materials

Case Studies



 Circular Economy Toolkit

Key points:

- High wastage of material can occur
- Re-design could change this
- High financial benefit possible when considering the saving for every product made/sold
- Possible for product or packaging

Questions to ask:

- *Where is there currently waste?*
- *What could be eliminated or reduced?*
- *What do your competitors do?*
- *What about packaging and distribution packaging?*

Optimise Materials

Optimise Materials

Design, Manufacture and Distribute

Selecting the best materials to ensure a sustainable supply chain:

1. Biological instead of technical nutrients
2. Use of recycled materials
3. Reduction of scarce materials
4. Removal of toxic substances
5. Lower carbon emissions materials (e.g. plastic instead of steel)

Benefits

- Reduced virgin raw materials
- Good reputation
- Financial benefit
- Reduced material sent to landfill
- Lower emissions and pollution

Considerations

- Durability of product/packaging could be reduced
- Cost of materials could increase with a change in materials

Case Studies



 Circular Economy Toolkit

Key points:

Many ways the essential materials remaining can be optimised:

1. Using biological, biodegradable materials has no net effect on the ecosystem
2. Recycled materials means you're using circular products and it can be cheaper for you
3. Reduction of scarce materials can reduce costs and supply chain risk
4. Removal of toxic substances is environmentally friendly
5. Consider carbon emissions to use the material, is there a lower emissions alternative?

Questions to ask:

- *How much of the product is: biodegradable, recycled, scarce, etc.?*
- *Would the customer value this change?*

Industrial Symbiosis/Recycling

Industrial Symbiosis/Recycling

Design, Manufacture and Distribute

Industrial symbiosis is the physical exchange of materials or energy between companies; waste from one company becomes the resource for another company. Materials include water, heat, steam, ash, paper, sawdust, card, oil, minerals, metals, etc.

Benefits

- Generate cash from waste or buy for cheaper
- Improves relations with others
- Reduces overall resource use, waste and emissions

Considerations

- Finding other parties to work with
- Quality of feed/supply
- Knowledge sharing of waste streams
- Legal regulations of transporting hazardous materials

Case Studies



Key points

- Waste generated on-site could be used by another business or visa-versa
- Waste streams are generally quite consistent, so it can be easy to manage once a supply route is established
- Many companies now achieving zero landfill targets

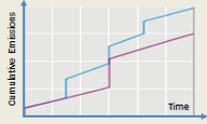
Questions to ask:

- *How much waste is currently sent to landfill?*
- *How difficult would it be to become a zero landfill site?*
- *Could waste from another business be used on your site?*

Usage Lifecycle

Usage Lifecycle

The aim of this strategy is to extend the product lifetime and improve the product efficiency for resource consumption. However, if the product is consuming resources, the product lifetime should be matched to the product efficiency.



Benefits	Considerations
<ul style="list-style-type: none">Total cost of ownership decreasesLowers overall environmental impact	<ul style="list-style-type: none">Could cannibalise salesProduct lifetime determined by user, e.g. fashionInvestment required to make the change

Product Design	Case Studies
<ul style="list-style-type: none">ReliableHigh resource efficiencyHigh quality	



Key points:

- Balance between long life and efficient resource consumption over the product lifetime
- Total cost of ownership and total lifetime emissions need to be considered

Questions to ask:

- *Does the product lifetime meet customer needs, or does it unnecessarily go beyond?*
- *Why does the customer currently dispose of the product? Once the product malfunctions, due to fashion, other?*
- *How does resource consumption compare against competitors and could it be used as a Unique Selling Point?*

Maintain/Repair

Maintain/Repair

Maintenance/Repair is a critical activity carried out in the use phase to prolong systems availability. Maintenance offerings can include:

- Repairs
- Servicing
- Diagnostics – onsite and remote
- Technical support – documentation and personal
- Installation
- Warranty

Benefits

- Prolongs life for the customer
- Most efficient way of returning the system back to working condition
- Source of competitive advantage
- May generate 3-4 more turnover than original purchase

Considerations

- Customer service critical
- Competition
- Quality of repair
- Cost of repair
- Speed of repair
- Latest technology potentially required



Maintain/Repair

Product Design

- Easy access to parts
- Fault diagnostics
- Handling and mounting of parts
- Part inter-changeability
- Access to lubrication points
- Redundancy features
- Final adjustments
- Identification of components and leads
- Reduced electrical connections
- Safety for technicians

Case Studies



Key points:

- Maintenance is the most cost effective way of extending product lifetime
- Maintenance can generate 3-4 times more turnover than the original product sale
- Many service offerings available with the maintenance/repair 'package', e.g. repairs, servicing, diagnostics, helper videos, installation etc.

Questions to ask:

- *Does your company offer all maintenance offerings or could it be improved?*
- *What design changes could be made to facilitate maintenance?*
- *Could maintenance improve continued customer engagement?*



Reuse/Redistribute/Re-sell

Reuse/Redistribute/Re-sell

Direct Secondary Re-usage or resale extends the product life by second hand use. The resold products can be the complete products or components of the product. Additional services can include testing and certification and re-warranty

Benefits

- Additional revenue stream which is currently taken by others
- Ability to offer upgrades and improve customer relations
- Prevents further materials and energy to be used for the new products

Considerations

- Volume of supply
- Volume of demand
- Quality and company reputation
- Price transparency
- Competitive pricing
- Competition

Product Design

Any durable product which still has value once the customer wants to change it

Case Studies



 Circular Economy Toolkit

Key points:

- Can be reuse/re-sale of whole products or working parts
- Second hand sale is potentially an area of untapped revenue, opportunity to offer servicing and certification with sales
- Opportunity to compete with cheaper markets by offering second hand goods

Questions to ask:

- *Who is currently selling second hand parts and products?*
- *Which parts could be reused in other products?*
- *Could second hand sales compete with cheaper alternatives on the market?*

Product Recycling

Product Recycling

Recycling is the process of using materials at the end of their life for new products. Products must be designed to ensure materials can be separated and reused at the end of their useful life.

Benefits

- Reduction in waste going to landfill
- Conserves natural resources and extends their available life
- Reduction in mining virgin material
- Compliance with legislation

Considerations

- Legislation requirements
- Cost of design change
- Redesign could effect product functionality

Product Design

- Minimising the volume of waste
- Reducing the spectrum of materials
- Use recyclable materials
- Few material combinations
- Toxicity

Case Studies



acer

 Circular Economy Toolkit

Key points:

- End of life needs to be considered for the product
- Legislation might effect the recycling of the product

Questions to ask:

- *How easy is the product to recycle?*
- *How much of the product would be recycled or sent to landfill?*

Products as a Service

Products as a Service

Instead of conventionally selling products, it's possible to offer the product as a service. The provider typically has ownership of the product throughout the entire lifecycle and can manage the product through design, usage, maintenance, reuse, remanufacturing and recycling.

Types of products as a service:

- Pay per unit of service: customer pays each time they use the service
- Product renting: customer pays to use the product, normally for a short period of time
- Product Lease: customer has continuous access to the product, typically for a longer period of time
- Product Pooling: when multiple customers can use the product simultaneously



Products as a Service

Benefits

- Better fulfil clients needs
- Build better customer relations
- Innovate faster
- Lower barriers to entry for customer as they do not need to purchase
- Reduced raw materials, energy and waste

Considerations

- Failing to deliver availability or performance agreement
- Investment to create the service and retain ownership
- New areas of value chain need to be managed
- Irresponsible usage of products leading to damage

Product Design

- Need to consider every lifecycle:
- Usage
 - Maintenance/Repairs
 - Refurb/Reman
 - Recycling

Case Studies



Key points:

- Ownership retains with the company
- Product can be sold as a service through pay per use (e.g. *power by the hour*), rental/leasing etc.
- Can better fulfil actual customer needs, closer relations, faster innovation and lower upfront costs

Questions to ask:

- *Would this satisfy the customer's needs better?*
- *How could you leverage ownership of the product by capturing value throughout it's lifecycles?*

Opportunity Prioritisation

Workshop Agenda

- Intro to the Circular Economy
- Objectives of the session
- Opportunities overview
- In-depth opportunities discussion
- Prioritisation of feasible opportunities
- Next Steps

Circular Economy Toolkit

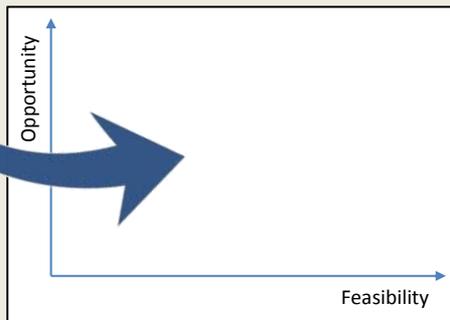
Following completion of all the opportunity areas, the opportunities should be ranked and next steps decided:

Take the post-it notes and rank them according to:

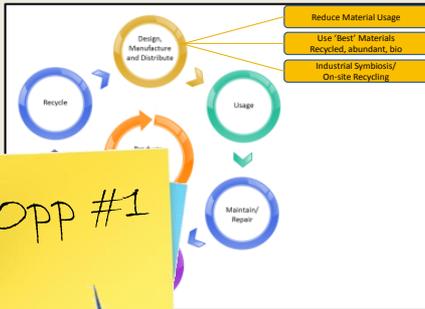
- Opportunity and
- Feasibility

The greatest opportunity and most feasible to implement will be in the top right hand corner.

Look for the opportunities which might be high benefit or high feasibility as these could be the ones you want to implement first



OPP #1



Next Steps

Next Steps

Potentially the most important part of the workshop as this is where the changes will start to happen.

Once you have the first view of which opportunities should be taken further decide an owner and a required completion date for the task.

Next steps could be to implement a quick-win identified, complete further analysis, hold further discussions with people in your business or another next step.