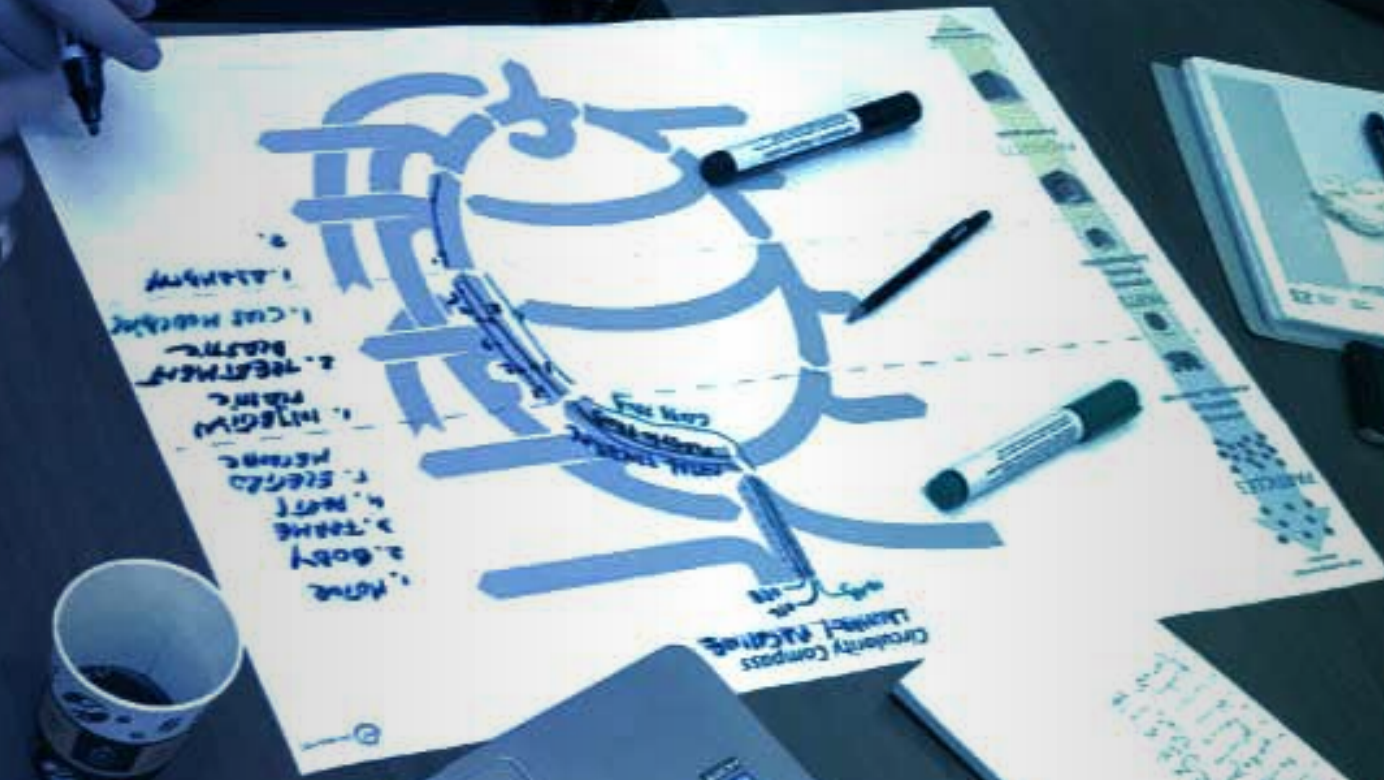


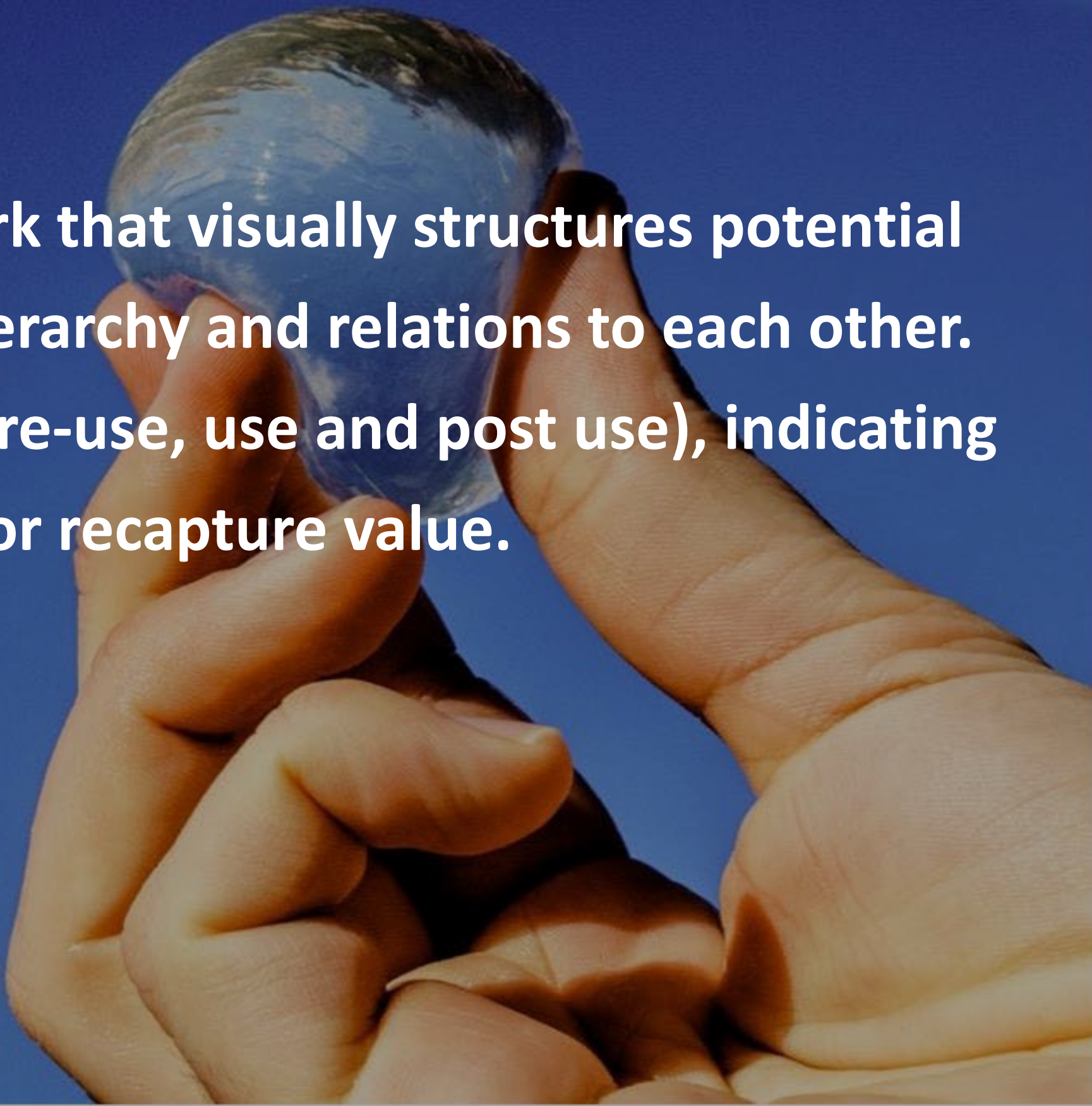
Circular Strategy Scanner

An Introduction



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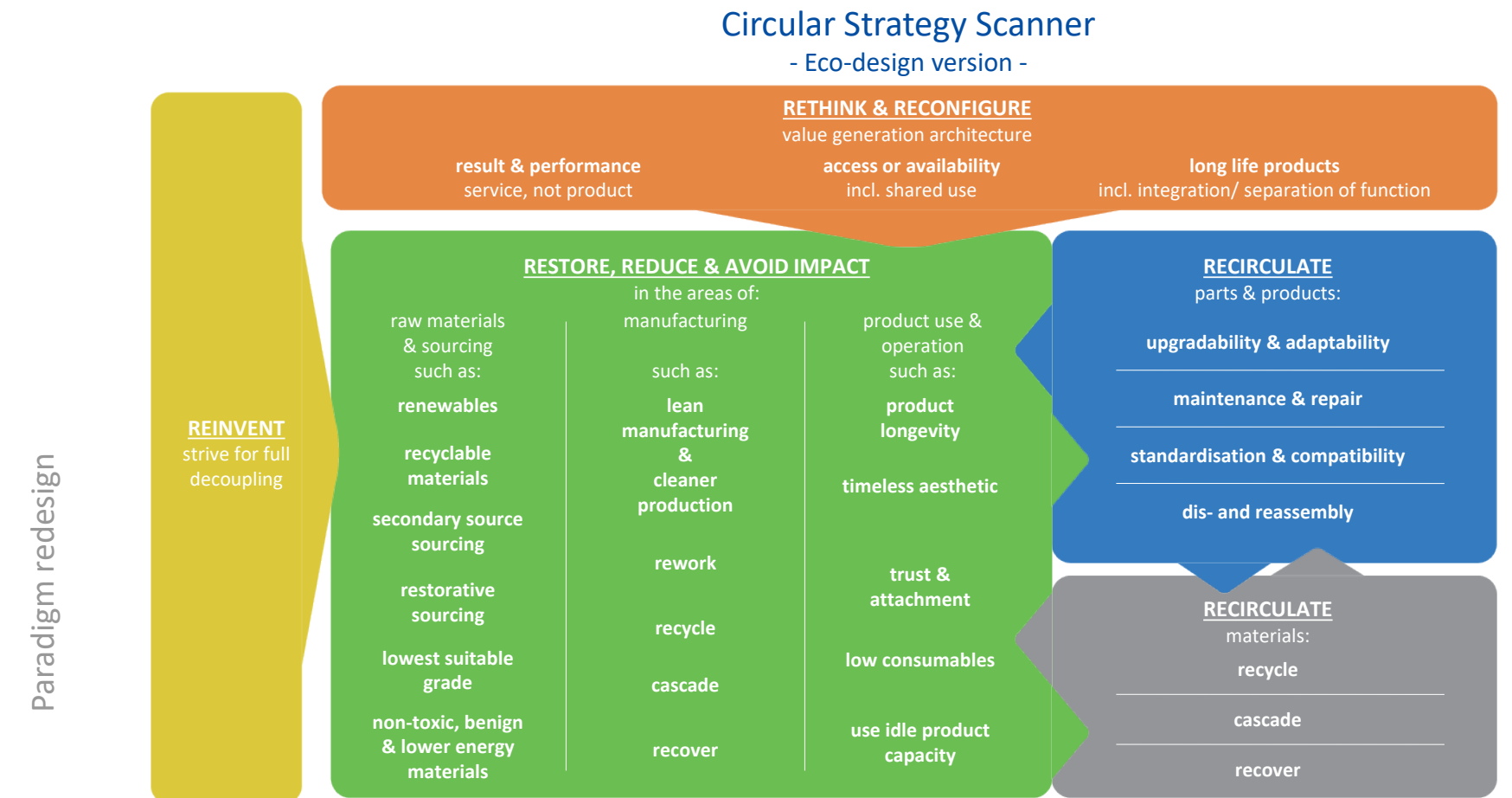
A pair of hands is shown holding a small, transparent globe of the Earth. The hands are positioned in the lower right quadrant of the frame, with fingers gently gripping the globe. The background is a clear, bright blue sky. The text is overlaid on the left side of the image, in a white, bold, sans-serif font.

The Circular Strategy Scanner is a framework that visually structures potential Circular Strategies, while indicating their hierarchy and relations to each other. It is closely linked to the Value Hill phases (pre-use, use and post use), indicating strategies that add, retain or recapture value.

Scanner | Purpose

The framework is more of a **visual diagram of Circular Strategies** to view and inspire rather than to follow as a template.

However, you may want to circle strategies of interest. Exploring the different **Circular Strategy Dimensions** (identified by colour groupings) it is also important to be aware of synergies and potential conflicts between them. Overlapping the scanner on the Value Hill can really help to identify potential circular strategy areas to explore of higher value.



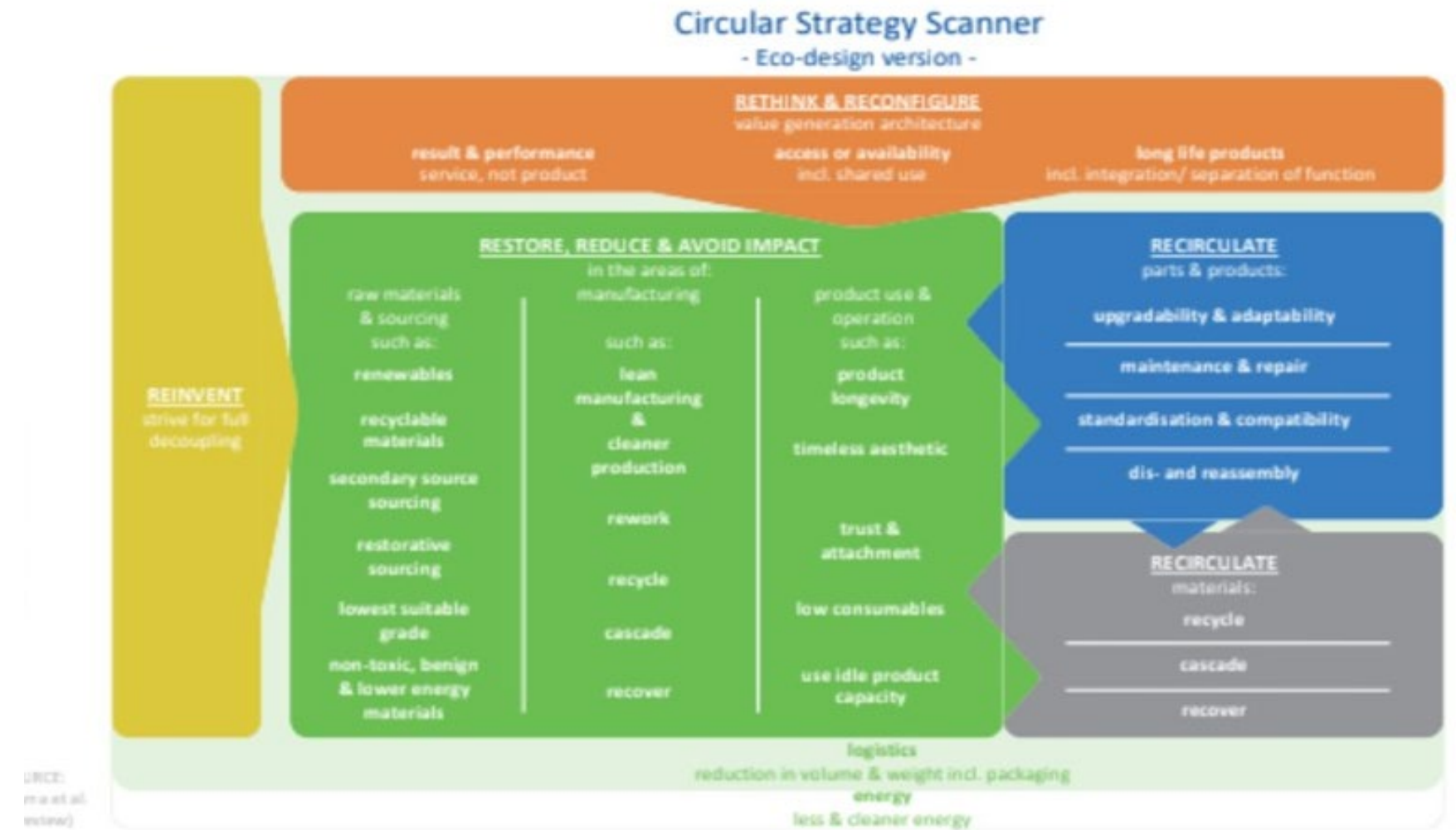
Scanner | Purpose

To provide **inspiration and guidance** on **potential Circular Strategies** for process and products, business and paradigm redesign (**Circular Strategy levels**) to be explored further.

When and where can I use it?

The Circular Strategy Scanner can be used in a number of ways:

- **To reflect on current strategies** that may have been used after mapping a product or business with the **Circularity Compass**.
- **Identifying potential gaps in strategies** based on the **Big Five waste hunt**, and remap them on to the **Circularity Compass**, prioritise and detail potential activities, needs, stakeholders and roles to implement on the **Activity Cycle**.



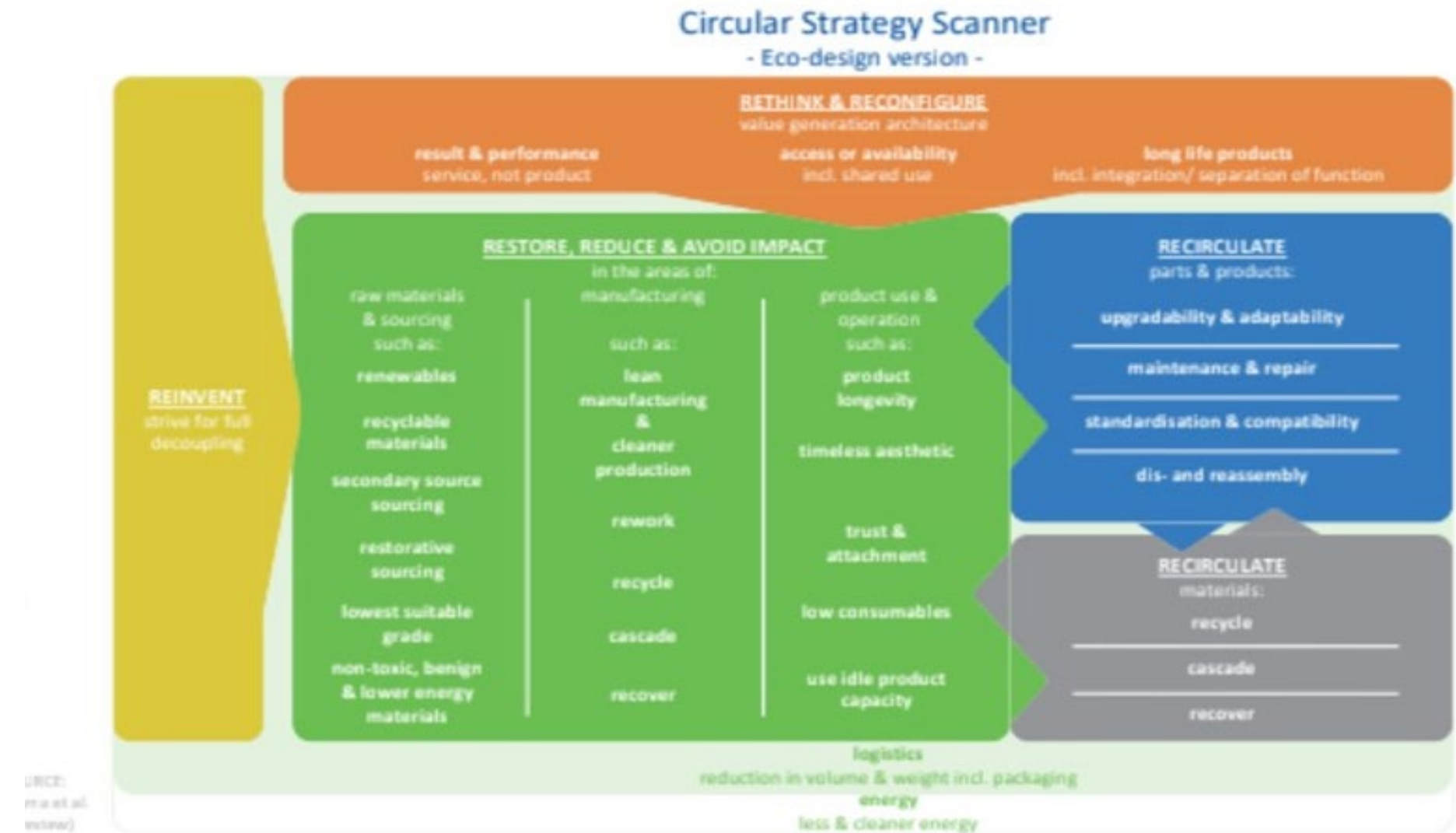
Scanner | Purpose

The **Circular Strategy Scanner** is a framework developed to provide **inspiration and guidance** on potential **circular product, process and business concepts** that could be explored and developed.

It can be used to both **reflect on current strategies and to find (scan) for opportunities**, from incremental part, product or process improvements to rethinking business model and complete reinvention.

It incorporates **three core Circular Strategy Levels**. These have then been grouped into **five Circular Strategy Dimensions** (indicated by the different colours in the framework).

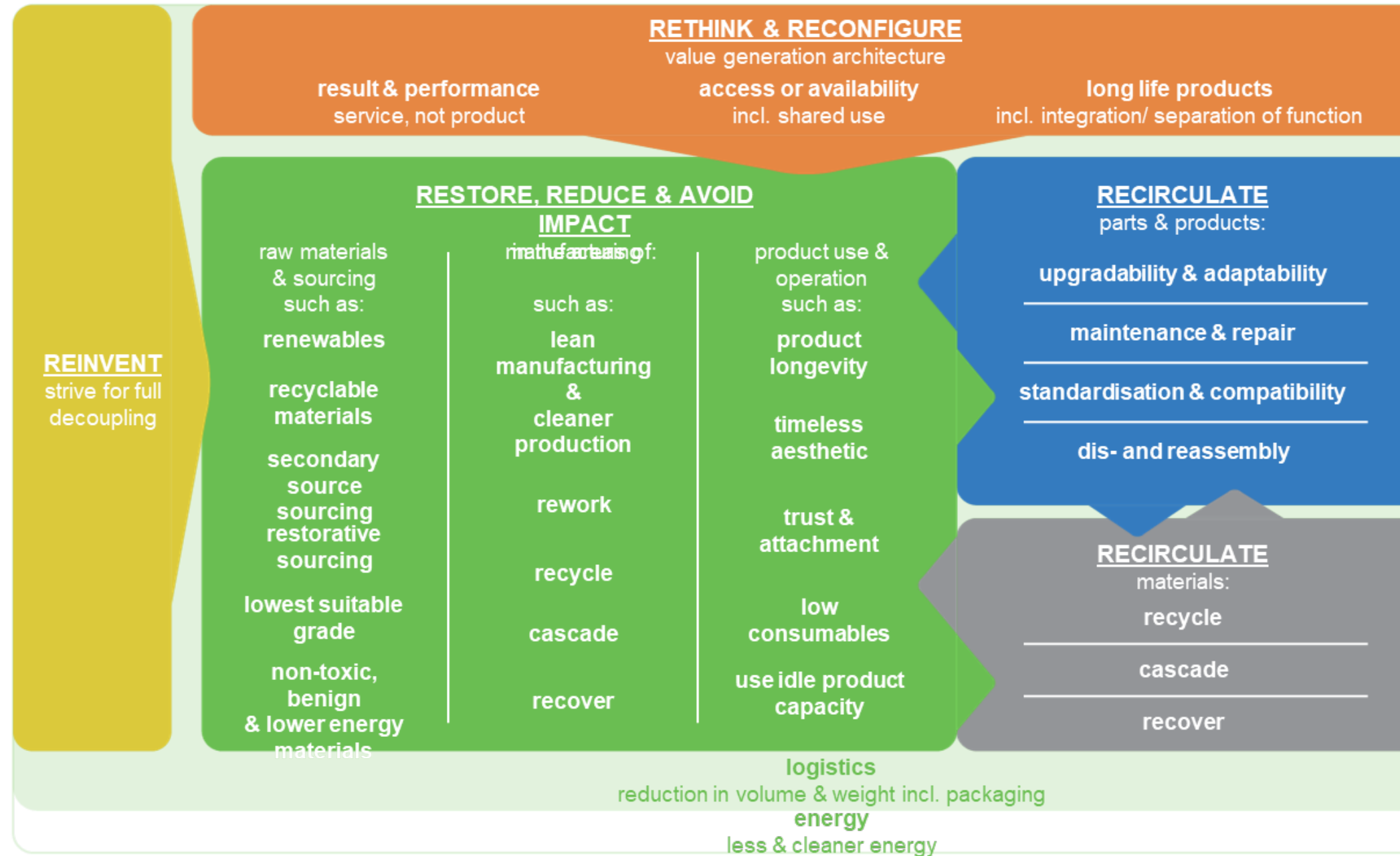
Their placing also indicates connections between different circular strategies and how choices may affect others (particularly at the Business Model or Paradigm Redesign levels)



1. REINVENT: Paradigm Redesign
 - Dimension 1 - Reinvent (to strive for full decoupling)
2. RETHINK: Business Model Redesign
 - Dimension 2 - Rethink & Reconfigure (value generation)
1. RESTORE, REUSE, AVOID & RECIRCULATE: Process and Product Redesign
 - Dimension 3 - Restore, Reduce and Avoid
 - Dimension 4 - Recirculate (parts and products)
 - Dimension 5 - Recirculate (materials)

Alongside these, the important cross-cutting strategies around sustainable logistics, energy efficiency and renewables is included at the base.

Scanner | Purpose



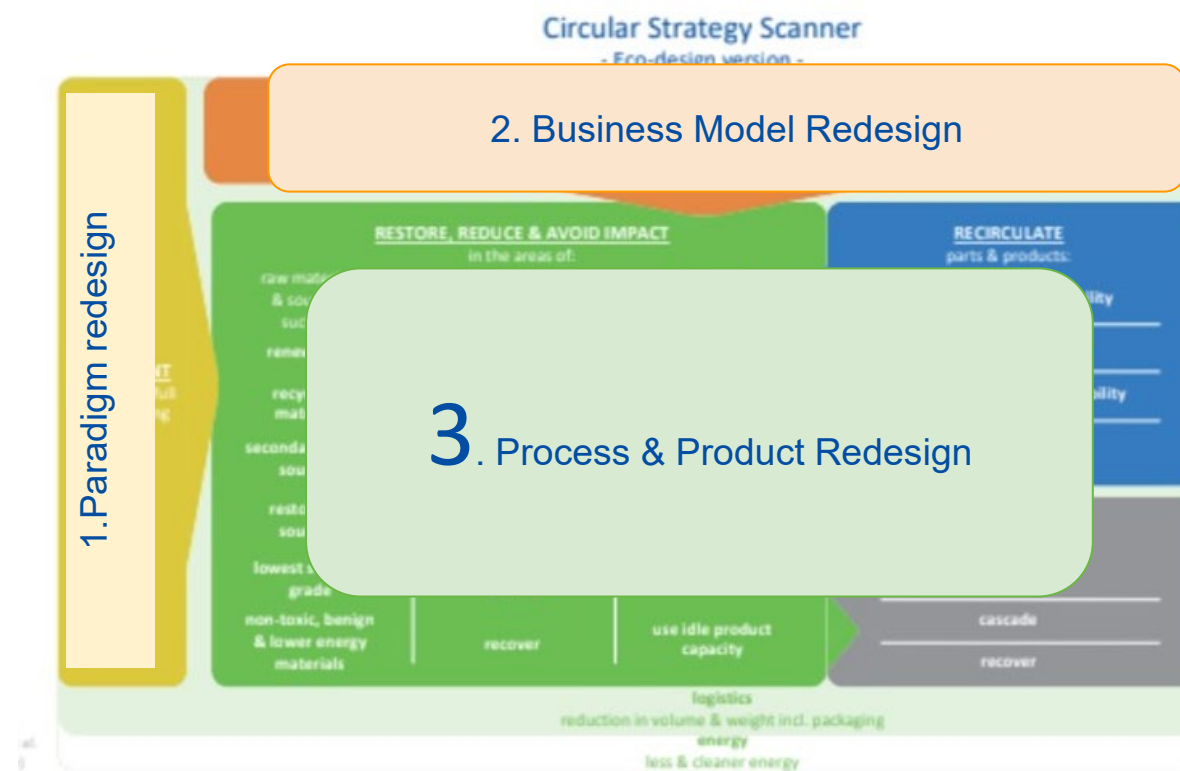
Scanner | Structure

It is constructed to encourage the exploration of potential **circular strategies at different levels and multiple dimensions**. You may choose a single strategy, multiple strategies at once, or plan them over time. This may, for example, be from identifying short quick wins on material choices and improved efficiencies, to working towards a business model or paradigm redesign.

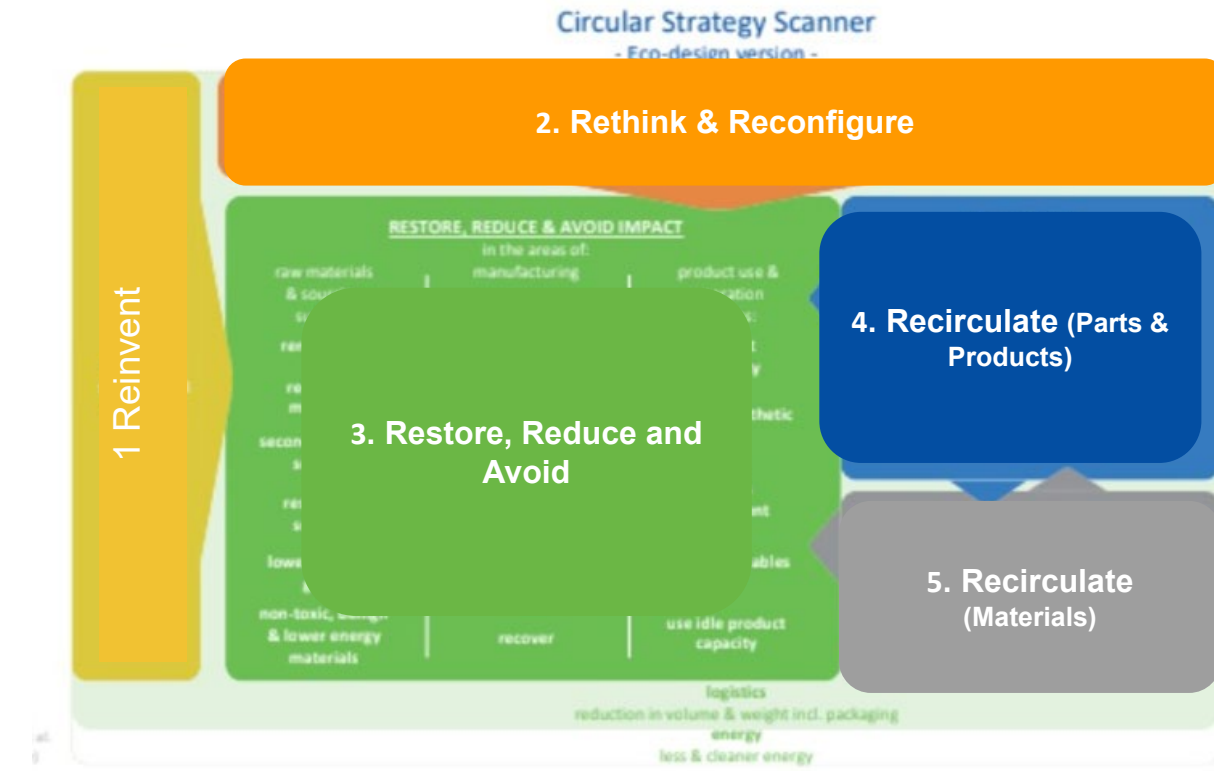
To note, potentially changing or choosing one strategy may have an impact on others. From zooming in on a product or material level to that of completely redesigning and reinventing the product or business (where the product or material strategy may no longer be relevant).

The core building blocks of the Circular Strategy Scanner are outlined and zoomed in below and the following page.

Circular Strategy Levels



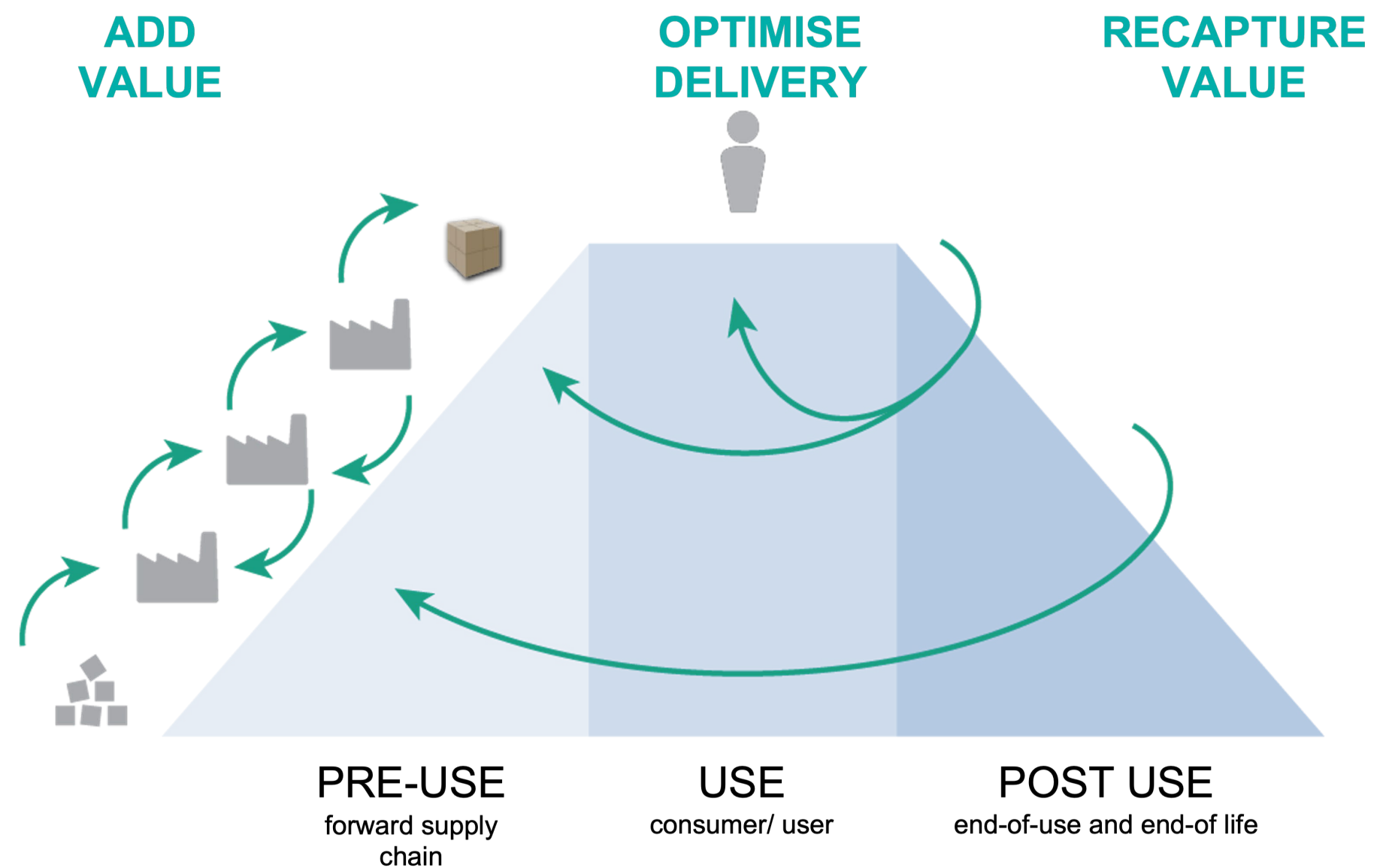
Circular Strategy Dimensions



The Value Hill

Similarly to the *Big Five Structural Wastes*, *The Value Hill* can be used as a means of illustrating the concepts contained within *the Circular Strategy Scanner*, both their stage and potential level of value.

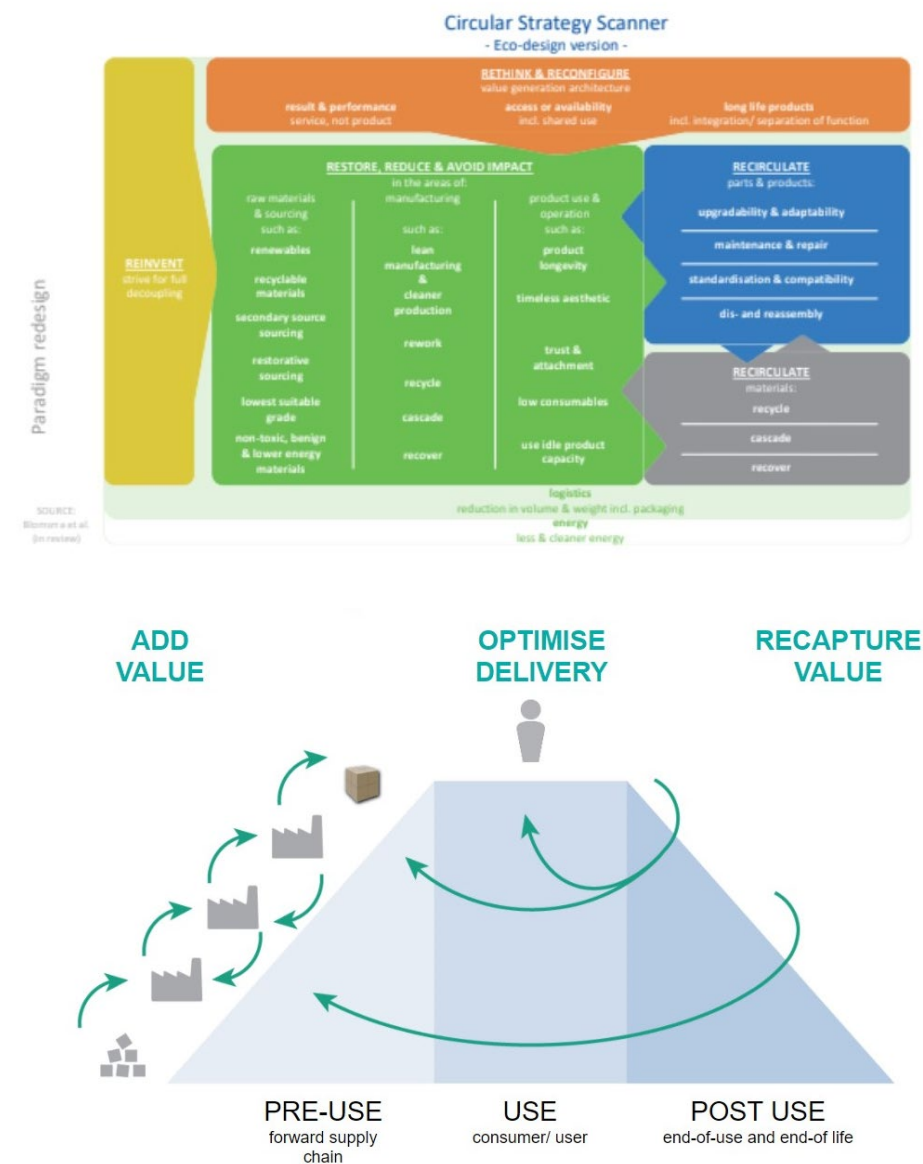
The Value Hill picks up on the idea how value loss and value retention happens, and how one needs to determine what circular strategies are the most appropriate in a particular context.



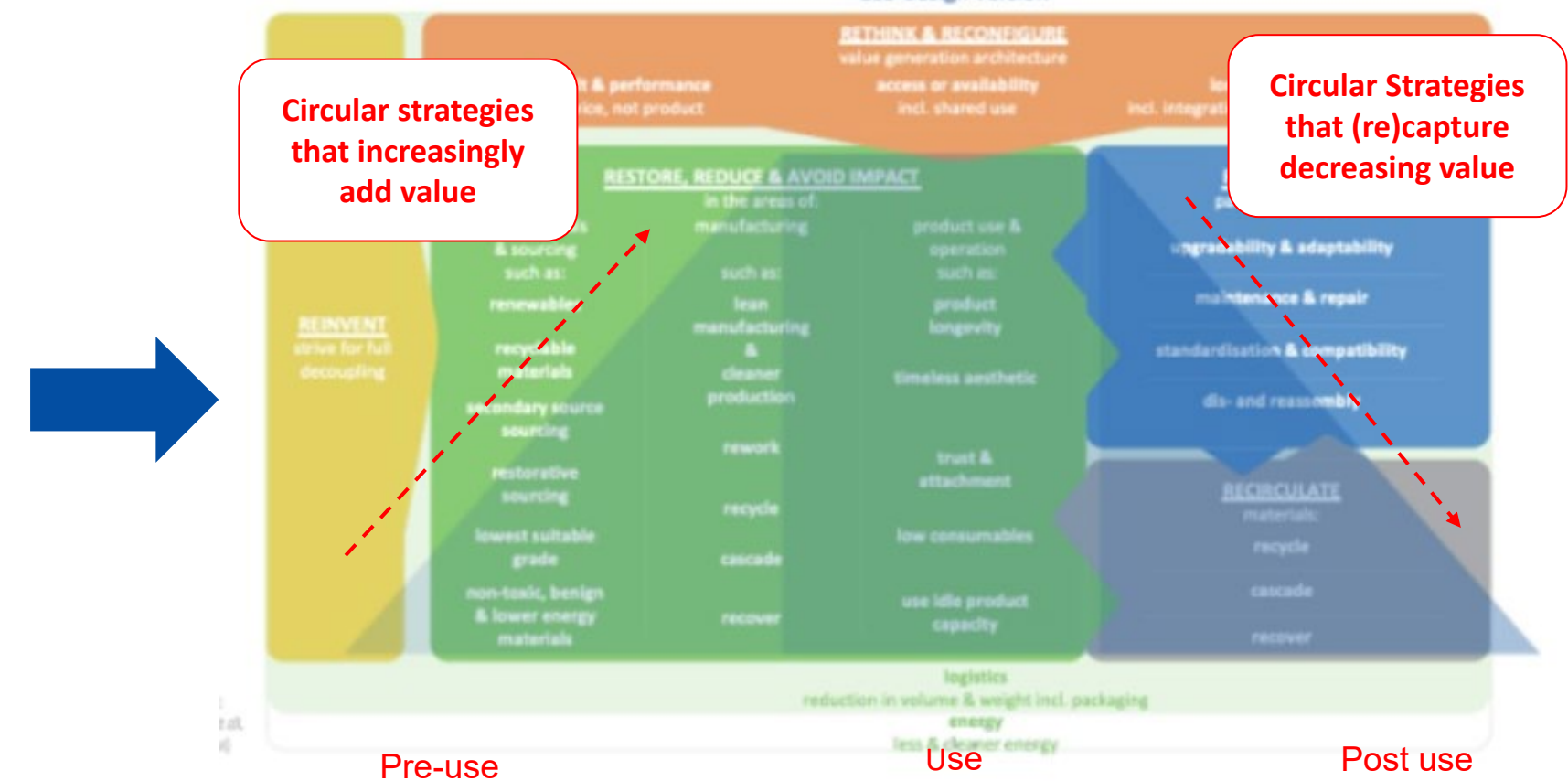
TIP: You can imagine the Value Hill behind the Circular Strategy Scanner or overlay a version of it to remind you what stage of the value cycle the strategy may be in and if it may add, retain or recapture value

Scanner | Links to Value Hill

The **Value Hill** can also help to **visualise and indicate** how and where these **circular strategies** are linked to value creation decisions along the value chain, upstream and downstream. Related to pre-use, use or post-use and what business processes may be affected by these decisions. Also the increasing slopes of the Value Hill can relate to hierarchy of Circular Strategies and their potential to **add, retain or recapture higher value**.



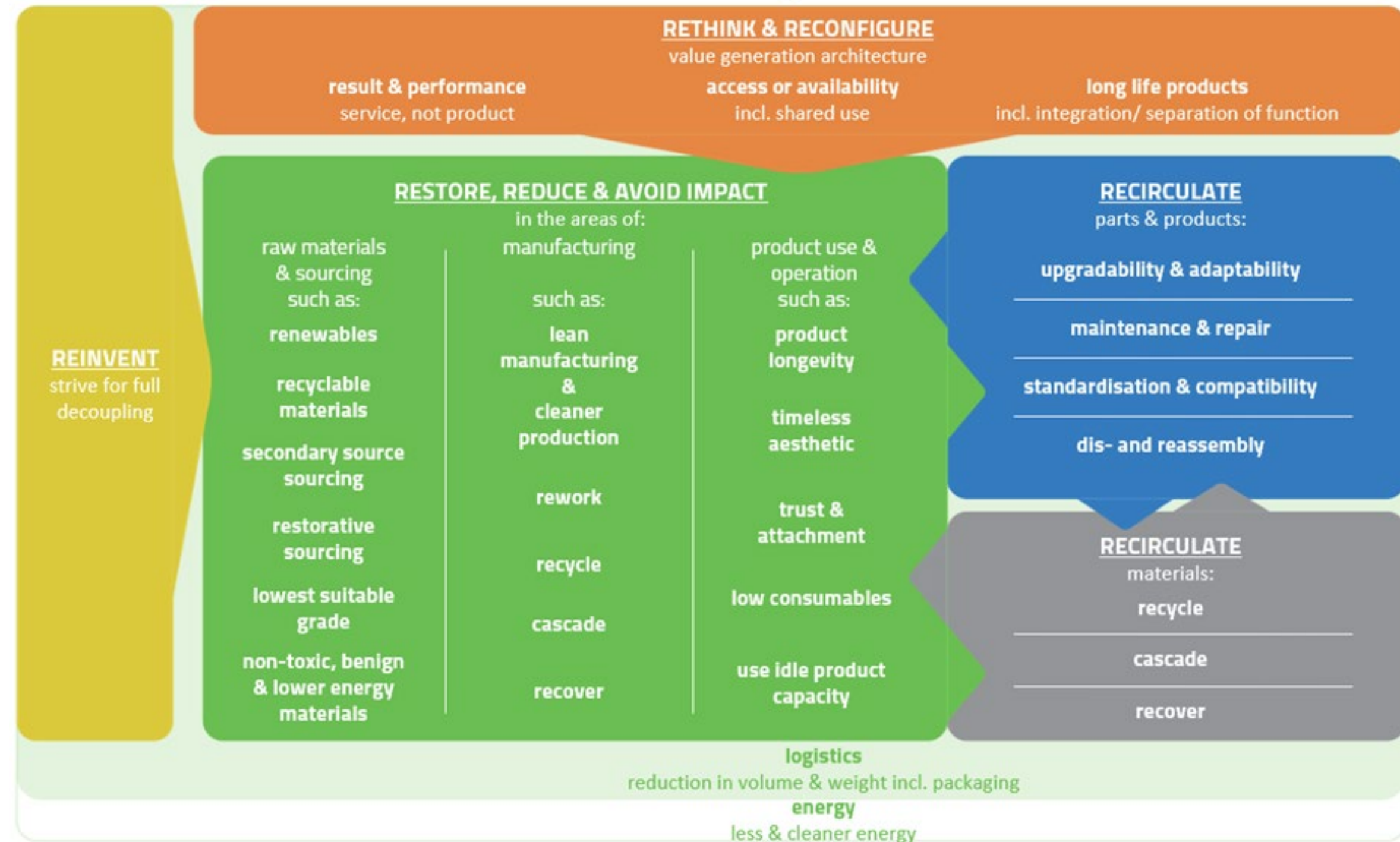
Circular Strategy Scanner Overlaid on the Value Hill
(signposting potential circular strategy areas)



Scanner| Structure

Circular Strategies

Zooming in within each of the five Circular Strategy Dimensions, there are a number of different Circular Strategies outlined - each one of which is described and brief examples given.



Circular Strategy Scanner | Paradigm Redesign

REINVENT

This Circular Strategy level is about **Paradigm Redesign or Paradigm 'shifts'**. These are changes in practices that allow for radical decoupling of a need from the use of resources. This dimension shows a somewhat hierarchical relationship in comparison to the others. A paradigm shift might include the replacement of physical products or elements by virtual services. Such a replacement might preclude or at least influence the use of other circular strategies.

Also, when a paradigm shifts, this may make some current businesses obsolete if they are not aware or open to change.

Note: this sits at the beginning of the Value Hill and feeds into the whole Circular Strategy Scanner, indicating these circular strategies have the potential to change all others and redefine 'value' and resource use.

REINVENT
strive for full decoupling

RETHINK & RECONFIGURE

value generation architecture

result & performance
service, not product

access or availability
incl. shared use

long life products
incl. integration/ separation of function

RESTORE, REDUCE & AVOID IMPACT

in the areas of:

raw materials & sourcing
such as:
renewables

recyclable materials
secondary source sourcing

restorative sourcing

lowest suitable grade

non-toxic, benign & lower energy materials

manufacturing
such as:
lean manufacturing & cleaner production

rework

recycle

cascade

recover

product use & operation
such as:
product longevity

timeless aesthetic

trust & attachment

low consumables

use idle product capacity

RECIRCULATE

parts & products:

upgradability & adaptability

maintenance & repair

standardisation & compatibility

dis- and reassembly

RECIRCULATE

materials:

recycle

cascade

recover

Circular Strategy Scanner | Paradigm Redesign

Dimension 1

Strive for full decoupling

REINVENT

Strategy	Description	Examples
Paradigm Redesign Strive for full decoupling	Make physical products redundant by offering the same function or combined functions, usually enabled by radically different product, technology or both (Potting et al. 2017).	<p>The 'bring-your-own' movement facilitates replacing such single use items such as coffee cups or packaging refill schemes such as Terracycle's Loop collaboration with various brands shifting to refill and delivery</p> <p>Music and video streaming services from Netflix to Apple music, negate the need for hard copy data carriers such as CDs and DVDs, or even owning hardware (e.g. cloud computing, game streaming).</p> <p>Multi-functional devices such as smart phones combine the functionality of multiple devices (camera, GPS, phone, calculator, alarm clock, sound system, computer) in a single device.</p>

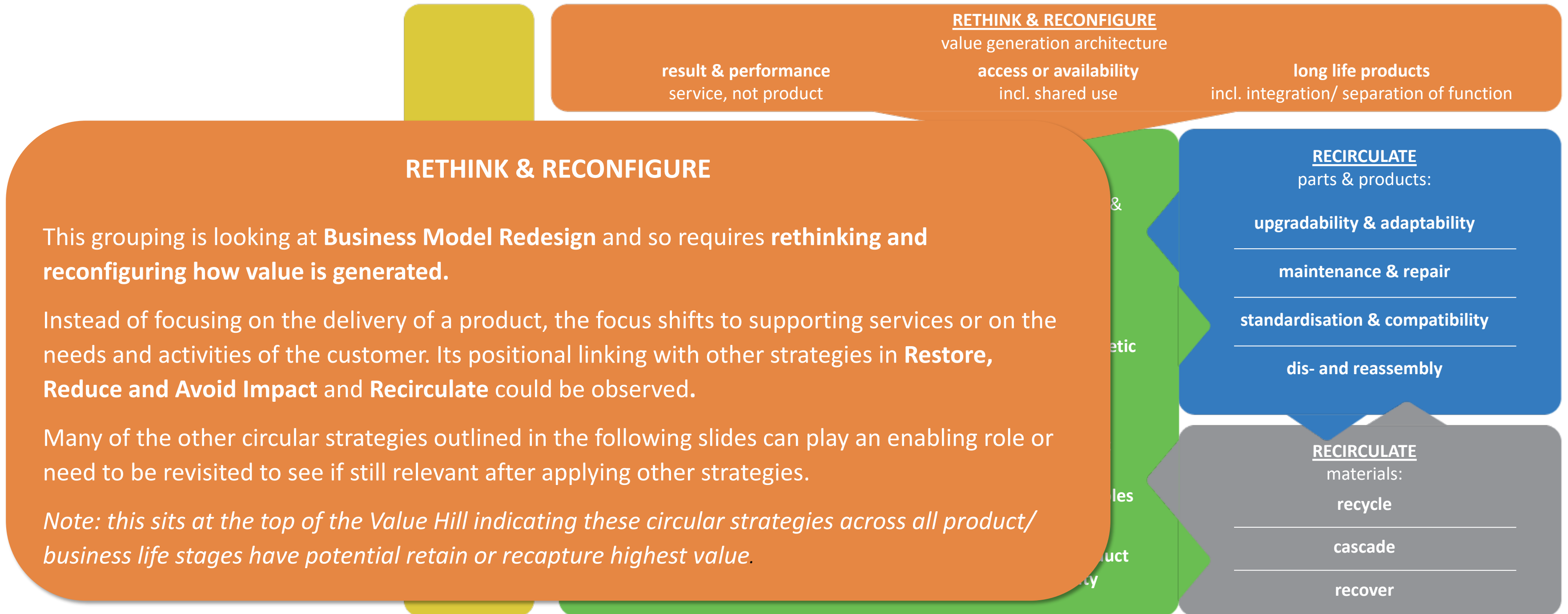


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Circular Strategy Scanner | Business Model Redesign



Circular Strategy Scanner | Business Model Redesign

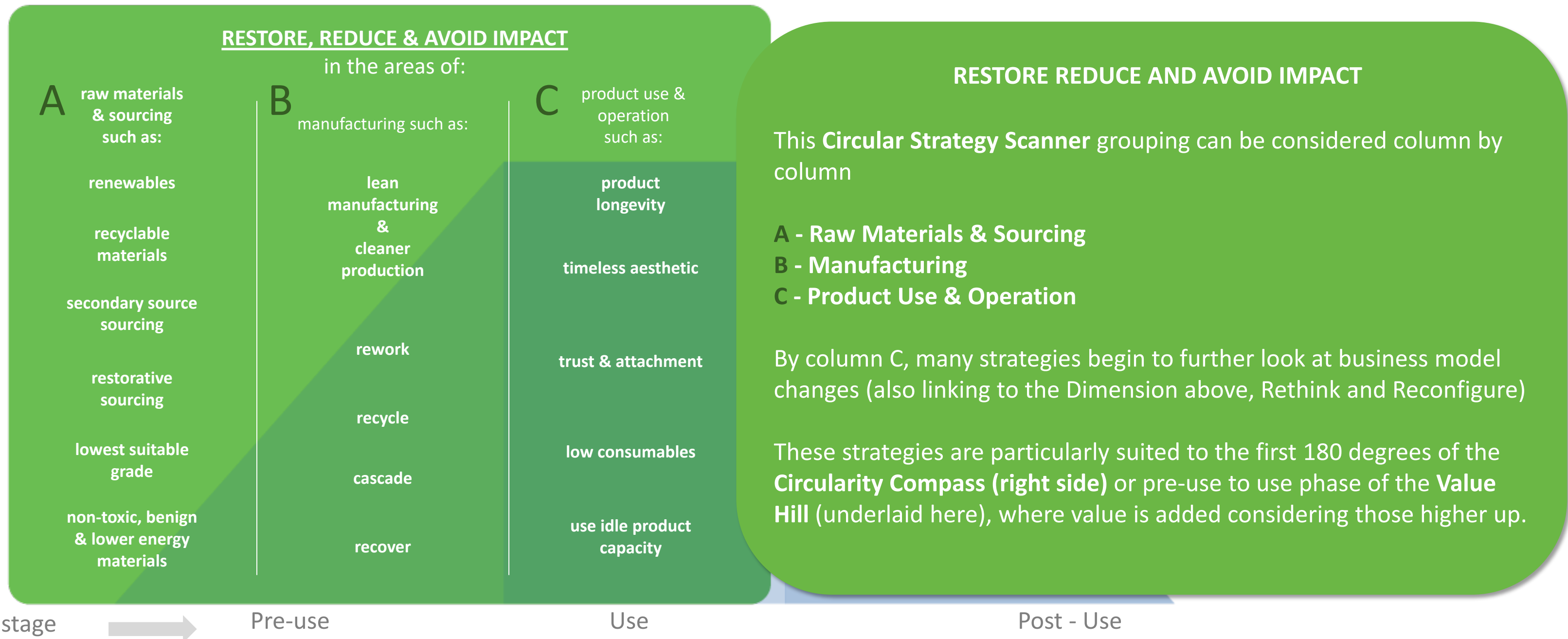
Dimension 2

RETHINK & RECONFIGURE

Value generation & Architecture

Strategy	Description	Examples
Result & Performance (Service not product)	Result or performance oriented business models , involve agreeing on an outcome, where the product is not predefined.	Activity management or outsourcing, pay per service unit, or functional result. In activity management or outsourcing a supplier takes over (a part) of a customer's activities. Signify (previously Philips lighting) offer 'Light as a Service', Dutch Homie offer a pay per use for home white goods, and Rolls Royce offers power-by-the-hour scheme running engines for cargo ships as a service, while Winterhalter offers dishwashing for restaurants.
Access or Availability (including shared use)	In access or availability business models, the ownership of the product remains with the manufacturer or service provider , and is not transferred to the user or customer.	This is where you find renting (including pay-as-you-go models) or sharing, pooling, and leasing (where leasing refers to longer contracts than in the case of renting, and where leasing is not simply a financial instrument to transfer ownership). There are increasing platforms and products offering this e.g. Get Grover , tech leasing, or the Library of Things , subscription-based clothing (e.g. babyclothes by Vigga), renting out various things in communities. Mud Jeans has a leasing option (an increasing area in fashion).
Long-Life Products (including integration / separation of function)	Product-oriented services and design that aim to extend the product life. These can be: product related services, or advice and consultancy, as well as design and material choices.	Product related services consist of providing through-life support services such as providing spare parts, maintenance services or the provision of consumables. Patagonia wornwear and some other high performance outdoors equipment offer lifetime repair (as well as now recrafting new pieces from old). Caterpillar, designing in durability and remanufacturing, offering as-new products for about half price, while saving two thirds of the costs on materials. Consultancy service could involve advice on how to use the product most efficiently.

Circular Strategy Scanner | Business Model Redesign



Circular Strategy Scanner | Business Model Redesign

Dimension 3

RESTORE
REDUCE AND
AVOID IMPACT

A - Raw Materials and Sourcing

Strategies that Improve circularity potential and efficiency in the material sourcing and extraction process

Strategy	Description	Examples
Renewables	Materials, energy and water sources that replenish themselves after human extraction within a finite amount of time. Therefore will often have a lower environmental impact	Examples of this may be switching to bamboo for various types of products instead of plastic or sourcing mycelium-based materials (mushroom) See ecovative example.
Recyclable materials	Materials that can be recycled, supporting future conservation of a resource base. Choosing materials that are known to be recyclable (particularly in the context of where they will be used and recycled).	Many drinks bottles use the same PET plastic, that can be recycled into drinks bottles again or other products like fleeces. Similarly aluminium drinks cans are both highly recyclable (as well as can use recycled aluminium)
Secondary source sourcing	Waste materials that are recovered, recycled and reprocessed for use as raw materials.(recycled materials, Industrial Symbiosis, other cascades). Restoring our resource base	Increasingly virgin plastic is being replaced by recycled plastic in products, examples include the packaging used in RePack's reusable packaging. Gold is being used from the smartphone industry into jewelry (Nowa)
Restorative sourcing	Use former 'wastes' as input, such as landfill re-mining or using ocean plastics	Econyl is a material made from fishing nets (among other nylon waste streams) and used in lots of textile products. Alongside this there are examples of sunglasses from ocean plastic, such as the Ocean Clean-Up
Lowest suitable grade	Reserve the highest-quality resources for the most demanding task, and use used resources further down the chain. This supports future conservation of a higher value resource base	Choosing materials appropriate for the products part, function, need, lifespan e.g. Philips initially used recycled plastics in parts with lower visibility requirements, similar approach to the car industry.
Non-toxic, benign	Materials that are regarded as non-toxic containing chemicals of elements not regarded to be dangerous to human or wider nature health (to facilitate reabsorption in natural cycles)	The Cradle 2 Cradle framework looks at the aspect of safe, healthy materials through its C2C certification . Many companies will have Health and safety requirements and regulation around this to adhere to (REACH, RoHS etc) Or internal policies like BPA free
Lower energy materials	Materials that take less energy to extract, process and so have less associated "embodied energy" with their usage (connected to carbon footprinting or life cycle analysis)	Designers, engineers may choose between virgin materials that both fulfill the required function by comparison of their impacts (note, this links to other circular strategies, such as secondary source sourcing, as a recycled version of the same material will have a lower impact).



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Circular Strategy Scanner | Business Model Redesign

Dimension 3

RESTORE
REDUCE AND
AVOID IMPACT

B - Manufacturing *Improve circularity potential and process efficiency in product manufacture through consuming fewer natural resources or energy, aiming for the the absolute minimum input required to run a process*

Strategy	Description	Examples
Lean manufacturing	A term used for encompassing manufacturing strategies that aim to minimise all waste and increase efficiency (i.e. time, money, resources) through high quality processes. Very much associated with increasing efficiency alongside looking at aspects of energy sources used.	<ol style="list-style-type: none"> 1) Improving quality management along the process, and so producing less products that fail quality control, 2) Minimize or cut waste, or eliminating over-processing, 3) Avoid energy or substance leakages, 4) Use the exact amount of material needed for a purpose ('lightweighting'), etc.
Cleaner production	Cleaner production aims for fewer use of substances, additives and, most important, toxics and the reduction of manufacturing consumables and to e.g. avoid leakages to the environment.	Mud Jeans have eliminated pesticides, insecticides, and toxic chemicals throughout its sourcing and manufacturing of its Jeans (alongside many other circular strategies).
Rework	Pre-user refurbishment or remanufacture of a part or product, returns process-wastes back into internal refurbishment, remanufacture processes.	Visual or mechanical testing of products may identify flaws, none working parts or products that then could be reworked before selling, without need to scrap.
Recycle	Pre-user recycling (or post industrial) , quite often within the manufacturing facility. The collection, sorting and processing of manufacturing materials for use in another manufacturing process internally. May be material scrap, parts or used in energy recovery.	Many companies regrind plastics from the manufacturing line or recycle metals used again with in manufacturing where there may be waste. For example, where metal parts have been punched out of a sheet, the sheet could then be recycled and remade into another metal sheet to use for manufacturing.
Cascade	Multi-use of resources from otherwise manufacturing waste: internally/or at other facilities (Industrial Symbiosis). Extracting maximum value from a material through alternative uses across the value stream.	Could apply to water emissions (cascade cleansing) or heat emissions (using waste heat in neighbouring processes, e.g. drying after coating). British Sugar cascade multiple otherwise waste streams along their production cycle to other industries and products.
Recover	General process of extracting material, energy or water from the waste stream for reuse or recycling.	British Sugar recover various 'waste'; materials, energy, water along their production process, one example is using the hot waste water from their factory to pump round a horticulture greenhouse to maintain good growing temperatures.

Circular Strategy Scanner | Business Model Redesign

Dimension 3

RESTORE
REDUCE AND
AVOID IMPACT

C- Product Use and Operation

Improve circularity potential and efficiency in product use and operation through wiser use and operation of products, particularly related to design and connecting with the customers needs and connections to the product

Strategy	Description	Examples
Product longevity	Design for long-life products, aiming for longer utilisation times. This could be through high product integrity and robustness, material choices, higher quality of parts and overall product. Links to Design for Durability principle that calls for maximization of a product or service's useful life. Planned obsolescence directly contrasts this design principle.	A reusable cup, such as Keep Cup , made from glass and cork, instead of a disposable thin plastic cup. <i>(Note, this circular strategy has strong links with exploring the user product relationship and business model changes, alongside potential paradigm shifts. This is represented in the placing and connections on the Circular Strategy Scanner).</i>
Timeless aesthetic	Designing something that is less sensitive to short-term fashion trends and potentially a 'classic', making it less likely to 'go out of fashion'.	Particularly relevant in places like the furniture or fashion industry, clothes that are timeless, such as a standard, regular straight cut jeans (like Mud Jeans) or a classic Jacket cut (Paynter). Taking inspiration from 'vintage' or other design classics can inspire.
Trust & attachment	The creation of products that are loved, liked or trusted longer , encouraging the user to keep. Also known as 'emotional durability'.	Strategies around this may be product learning about the user, wear over time that creates stories, memories, connections. Aspects such as quality and a good customer experience links with this as well.
Low consumables	Minimising the resources used by or co-used by the product, such as energy, water and materials during product use and operation.	This could be reducing energy or water use in usage and efficiency measures (e.g. low energy efficient showers). It is worth considering how often may consumables such as filters, shaving heads, lubricants etc need to be updated or replaced.
Use idle product capacity	Utilise (or design out) idle product capacity. This could be related to using machinery more efficiently or products, to also over specifying size that is never used. Historical usage data can be used for improvements such as better scheduling (of downtime), and give insight into the possibilities for pooled or shared use.	Think, for example, of a kettle or washing machine that is over-specified, to handle a larger quantity of water or clothing than is required by the user in the majority of use cases. Similar with an electric drill or even a car. In other cases, this may be a product management issue. That is: buying too many products, or not scheduling their use so as to make maximum use of their capacity.



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Circular Strategy Scanner | Process & Product Redesign

RECIRCULATE (PARTS & PRODUCTS)

A range of **Circular Strategies** also exist to enable the recirculation of parts and products: design for upgradability and adaptability, maintenance and repair, standardisation and compatibility or dis- and re-assembly (also linked to Design for X, DFX).

These strategies are particularly suited to the **usage stage** and **extension of it into post-usage** aspects of the **Circularity Compass** or the **Value Hill**. In terms of retaining highest value, these strategies can be viewed as descending in preference from top to bottom (parallel to the second slope of the Value Hill).

Many of these strategies will need to be viewed through an **infrastructure and organisational lens** when they are being explored and developed

- RECIRCULATE**
parts & products:
- upgradability & adaptability
- maintenance & repair
- standardisation & compatibility
- dis- and reassembly

reduction in preference



Circular Strategy Scanner | Business Model Redesign

Dimension 4

RECIRCULATE

Parts & Products

Extend existing use cycles with the purpose of capturing (residual) value or to reduce value loss from continued use of parts and products. These Circular Strategies are viewed in context of infrastructure and organisational aspects.

Strategy	Description	Examples
Upgradability & Adaptability	Designing in ability to upgrade and adapt products to future-proof for changing technical requirements, tastes or functional requirements.	This could be allowing for software upgrades or strategic modularisation to allow for adapting products through replacing old modules with new ones that have new functions or added functionality e.g. latest camera technology.
Maintenance & repair	Designing in and facilitating access to parts that need to be maintained or repaired regularly.	There can be various levels of this, in terms of the repairer, e.g. by own company, verified repairer, repairer or user. Ifixit and Right to Repair are interesting organisations that campaign for more repairable products.
Standardisation & compatibility	Creating standardised parts, products or interfaces that fit other products as well. Establishing uniformity across manufacturing processes to minimize errors and save costs.	Manufacturers may have similar parts across product lines, attachments that are transferable or in more recently launched products, there will be parts that are still compatible with older versions - increasingly chargers for phones have moved this way and you may no longer need a new one or work across different brands.
Dis- and reassembly	Designing in the ability to separate and reassemble products easily and cost effectively. Design principles around this call for end-of-life options of how the product, components and materials can be deconstructed.	This is often linked with other circular strategies, such as repair or maintenance or remanufacture, alongside potentially aiding the end-of-life separation for recyclability or harvesting of parts.

See [Fairphone](#) examples on next page



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Fairphone Example

Recirculate - Parts and Products

Fairphone, a smartphone manufacturer looking at increasing the ethical and environmental considerations of the tech industry, has used a number of recirculate strategies in its recent models.

Upgradability and Adaptability

Designed to be future ready, 5G, and Android software updates (5 year warranty) as well as modular design.

Maintenance and Repair

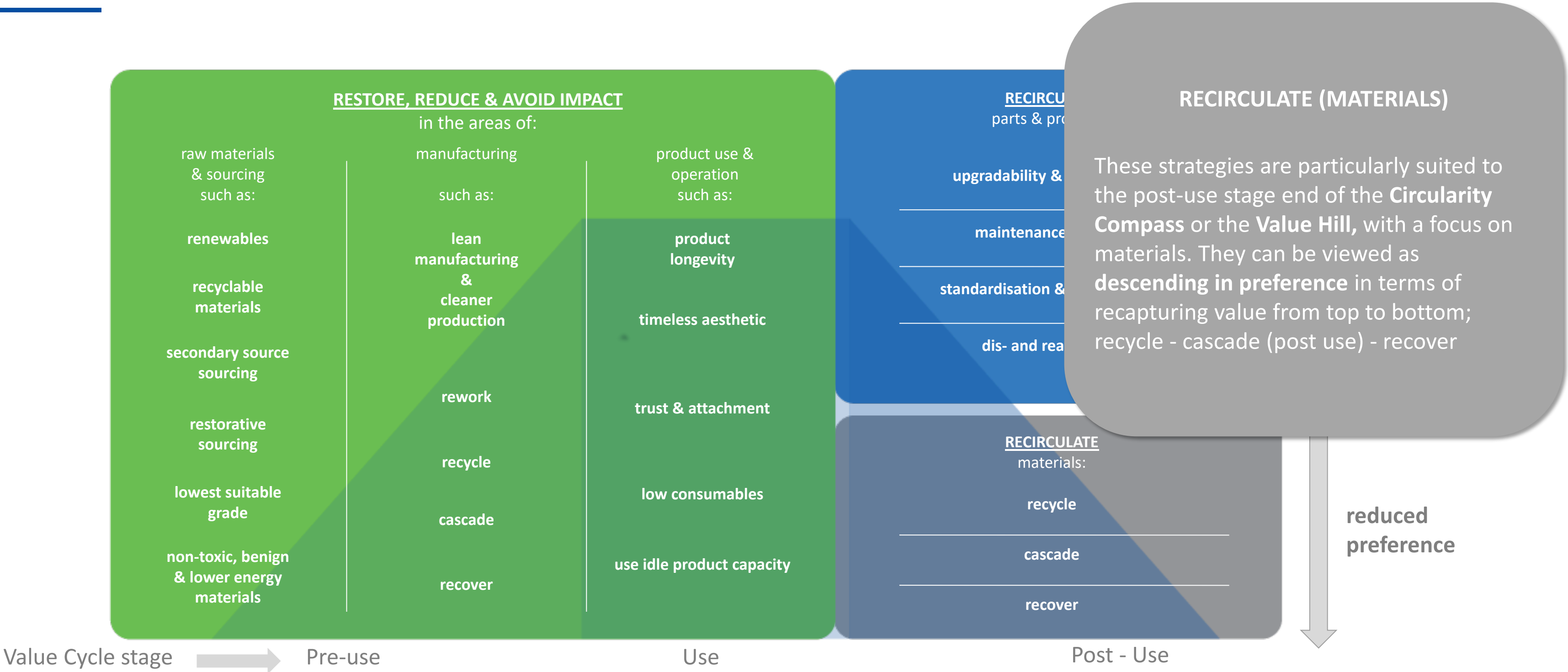
Have designed it to easily be able to replace the battery or display yourself with a standard screwdriver. Parts and guidance are supplied fast and at competitive prices. It has an Ifixit Score 10/10.

Dis- and Reassembly

Fairphones have been designed to be easily disassembled for the ability to repair and refurbish, replace parts, as well as thinking about the end-of-life and eventual recycling.



Circular Strategy Scanner | Process & Product Redesign



Circular Strategy Scanner | Business Model Redesign

Dimension 5

Materials

Post consumer recirculation of materials.
 Effective application in end-of-life of materials with the purpose of capturing (residual) value or to reduce value loss from continued use of materials.

RECIRCULATE

Strategy	Description	Examples
Recycle	The collection, sorting and processing of disposed products and in turn their materials , for use in another manufacturing process, application.	Being able to recycle is increasingly the focus for many products (particularly in standard home and business recycling systems). Here citizens or consumers are also becoming more aware of the need to at least be able to recycle products. For example, many food products have switched to recyclable packaging, moving from unrecyclable plastics types to cardboard. Aluminium cans, for example, are very recyclable and contain a lot of embedded value.
Cascade	Multi-use of resources from otherwise product, material waste , into new products or businesses.	Products and materials can be used in other, different products and manufacturing processes.
Recover	General process of extracting material, energy or water from the post usage waste stream for reuse or recycling.	Other high-value recycling possibilities within waste streams, or waste-to-energy processes.

Circular Strategy Scanner | Business Model Redesign



Foundations

Not to be forgotten are two additional Circular Strategy Dimensions that could be considered as practical, cross-cutting basis for many of the others, particularly important during implementation; Logistics and Energy, which are located at the base of the Circular Strategy Scanner. Their positioning encompasses all the others, indicating they should always be considered during a business transformation.

LOGISTICS AND ENERGY

Strategy	Description	Examples
Logistics <i>Reduction in volume and weight including packaging</i>	Many product-use and operations strategies, as well as recirculation of product and materials strategies rely on logistics. Therefore, optimizing the logistics is an important part of Circular Strategies.	Optimization not only for the modes of transportation, e.g. ships, trucks, cars, but also for the optimization of routes or loads (reduction in volume and weight). Reverse logistics (and the use of data for tracking and tracing) is an increasing area related to circular business models.
Energy <i>Less and cleaner energy</i>	All business processes or areas of the Circular Strategy Scanner are reliant on energy and so reducing overall energy consumption and using clean(er) renewable sources should be considered.	For example, Mud Jeans uses low energy production techniques, land and water transportation. Increasingly manufacturers choose renewable energy suppliers or have their own on site. Alongside this you can design in energy efficiency or use of renewables into the products themselves.

How The Circular Strategy Scanner is used |

Step-by-step process

Reflect on the **Circularity Compass** mapping, review where there are **areas of waste through the Big Five**, or potential improvement opportunity

You already identified a variety of challenges and solution spaces. Do they call for one strategy or are there more? Where are the hotspots? Are the strategies that emerge in response similar in their capacity to reduce impact?

Reinvent and strive for full decoupling

Consider if there are strategies where alternative systems or sub-systems (e.g. virtual services) can replace physical products and if this could preclude the use of other strategies.

Rethink the value creation architecture

Rethink if value can be created differently along the value chain (e.g. services instead of products). Consider if and how such strategies might require the support of other 'underlying' strategies that affect the physical composition of the product.

Evaluate the relevance of the remaining strategies

Evaluate the relevance of the remaining strategies. Consider how they can be applied synergistically or if they require trade-offs (which you might need to evaluate). Make sure that no new waste is created, and that the strategy mix you selected is compatible and realistic.

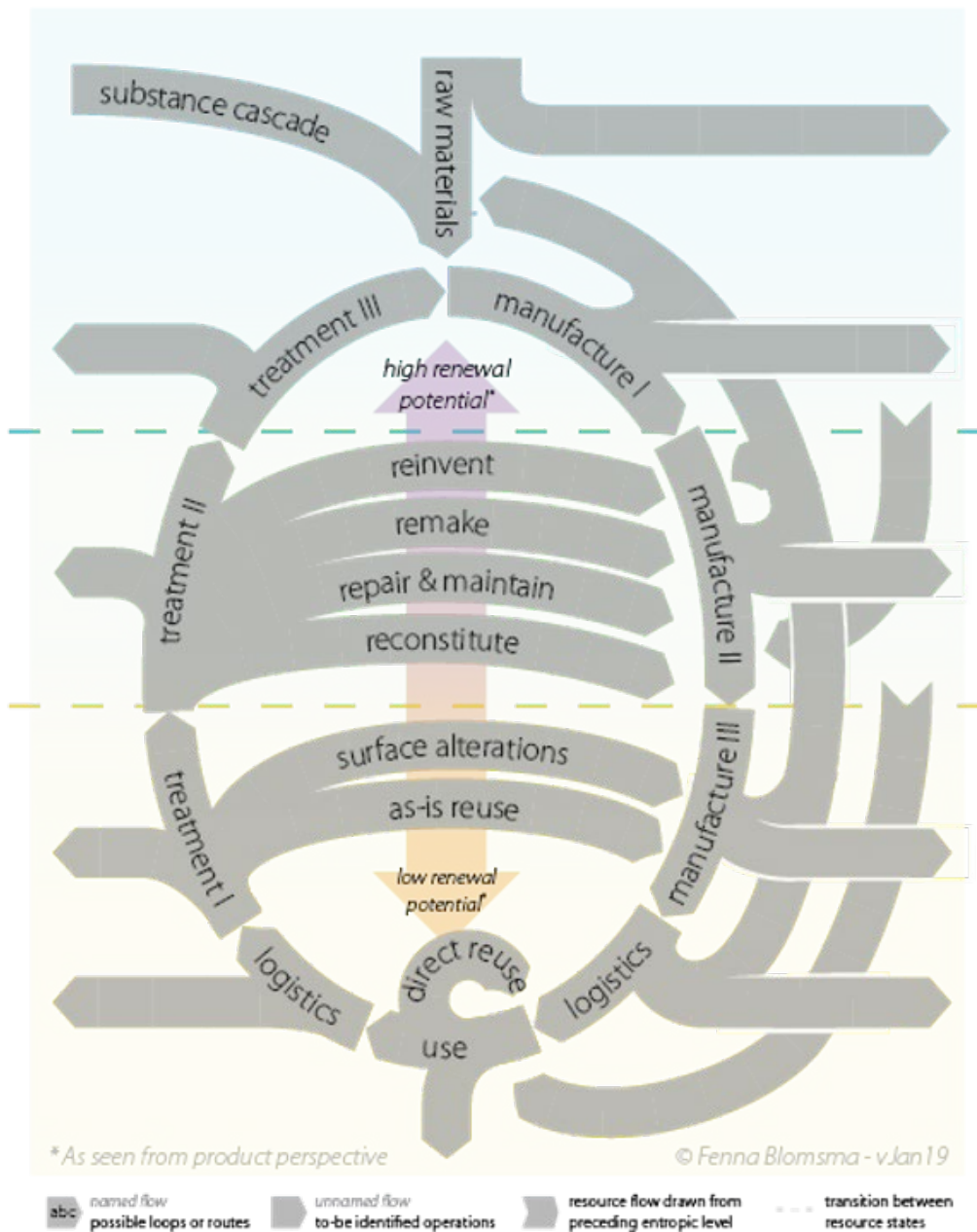
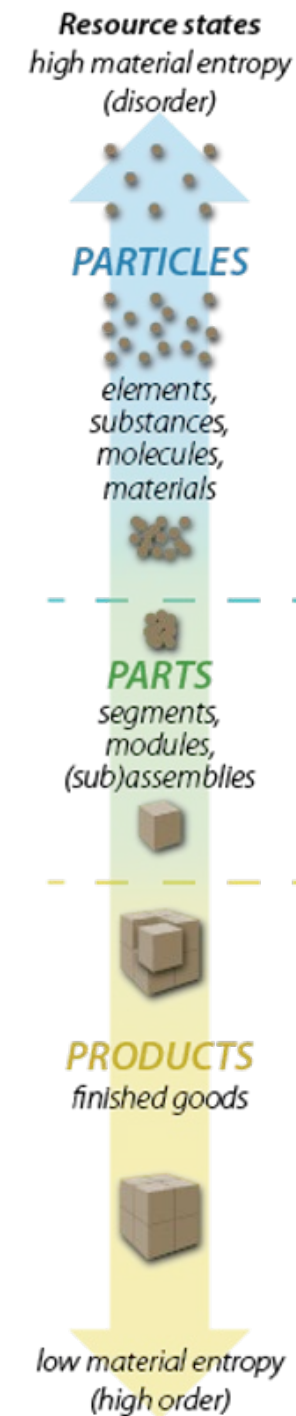
Iterate

You might have found a fitting set of potential circular strategies. However, it might not be the only one and different contexts might ask for a variety of potential strategy combinations and approaches. So try to iterate and think of different combinations, while scoping feasibility.

REMINDER | The Circularity Compass

The more complex version of the Circularity Compass, with its developed alternative flow loops, can also be used as a means of supporting illustrating the concepts contained within the Circular Strategy Scanner or as inspiration for strategies.

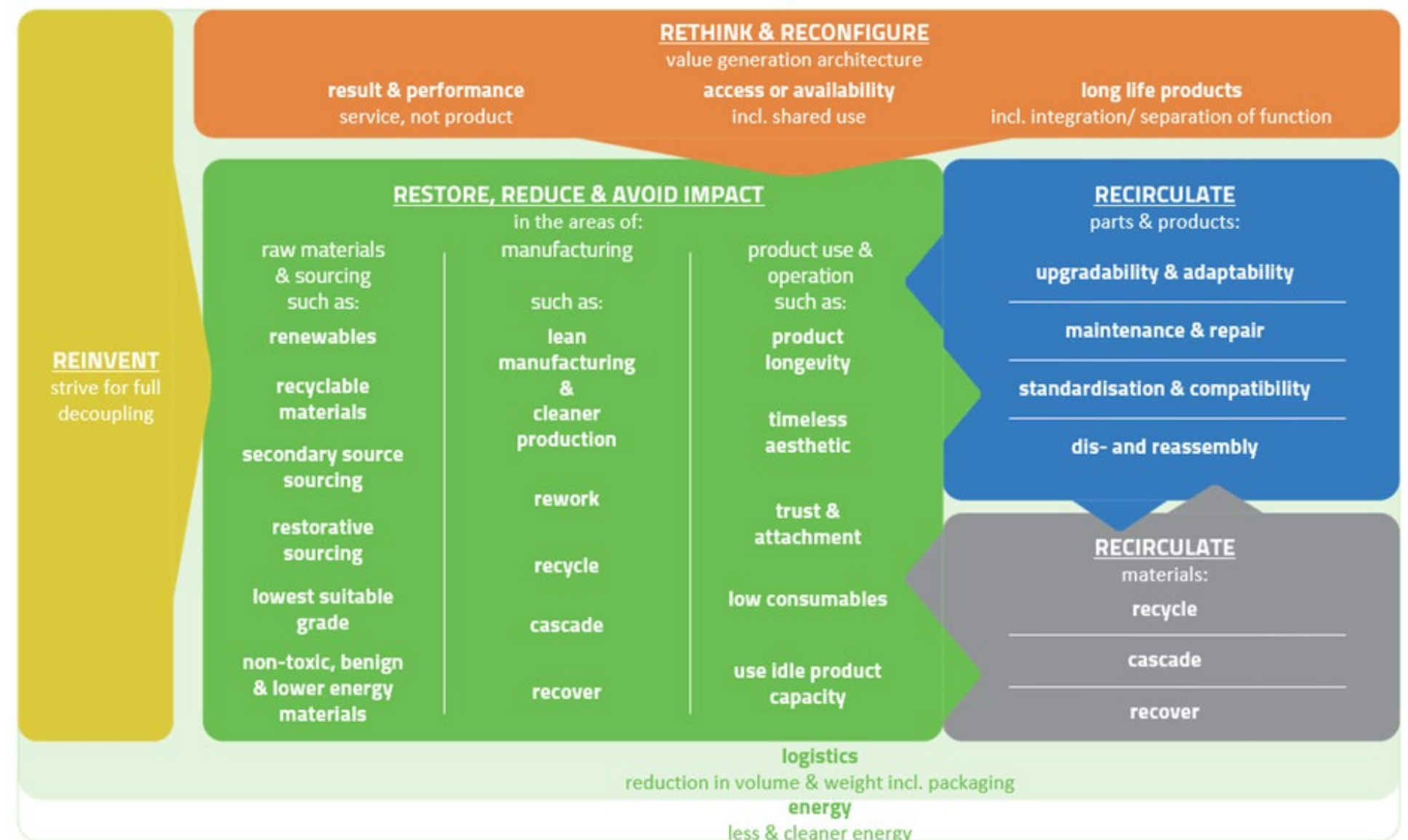
TIP: You can imagine the right hand side of the Circularity Compass as representing many of the Circular Strategies in **Restore, Reduce & Avoid impacts** - raw materials and sourcing, manufacturing. Similarly the base of the compass links with the use phase and **product use and operation strategies**, or **rethinking and reconfiguring** business models. Finally the left side links with the right side of the Circular Strategy Scanner, showing areas of **Recirculating parts, products and materials**.



Circular Strategy Scanner | Further Detailing and Description

The three Circular Strategy Levels and five Circular Strategy Dimensions of the scanner are outlined step by step, 'zooming in' alongside a supporting description of each Circular Strategy with different examples to explore.

1. **Paradigm Redesign**
 - Dimension 1 - Reinvent (to strive for full decoupling)
2. **Business Model Redesign**
 - Dimension 2 - Rethink & Reconfigure (value generation)
3. **Process & Product Redesign**
 - Dimension 3 - Restore, Reduce and Avoid
 - Dimension 4 - Recirculate (parts and products)
 - Dimension 5 - Recirculate (materials)



How to use the tool – case example

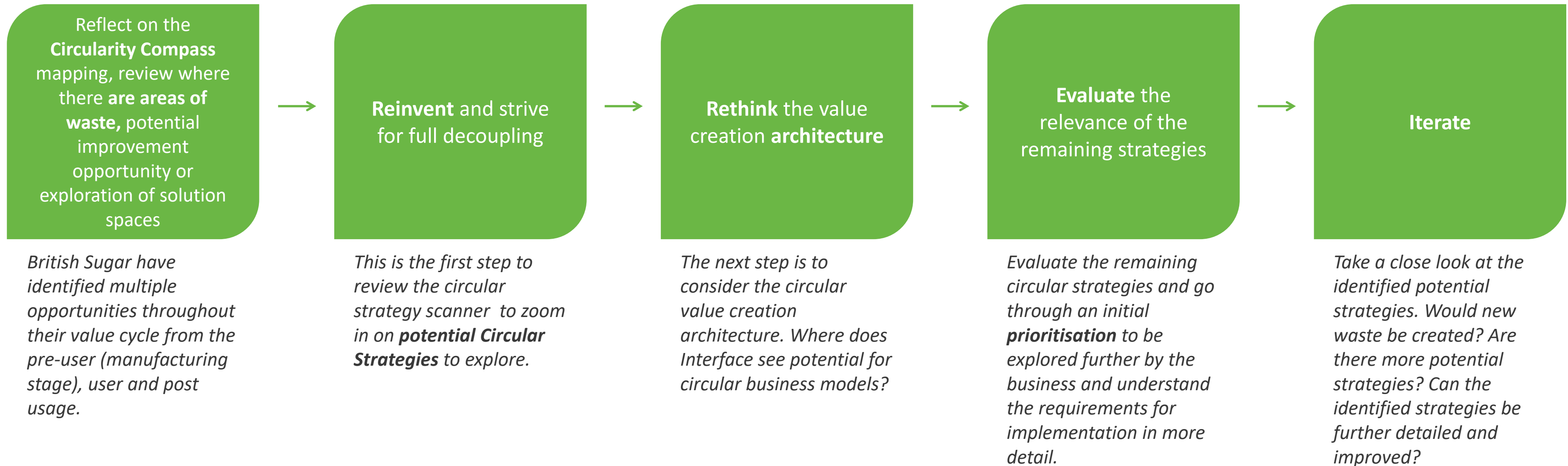
Find inspiration on real life case examples how the tools can help to develop circular solutions on the following pages. These include some examples developed by the project team and some developed by training participants during the delivery of Circularity Thinking training courses.

Disclaimer: none of the companies mentioned in any of our case examples made their own use of the Circularity Thinking tools. We applied the tools in hindsight and based on available information of the companies. We only show how the Circularity Thinking tools can be applied on company cases to support the circular innovation process.



BRITISH SUGAR | Example

Background reminder: British Sugar is part of the Associated British Foods plc, a multinational food, ingredients and retail group. They have looked at reducing environmental impact throughout their business, but in this case looking at their factories.



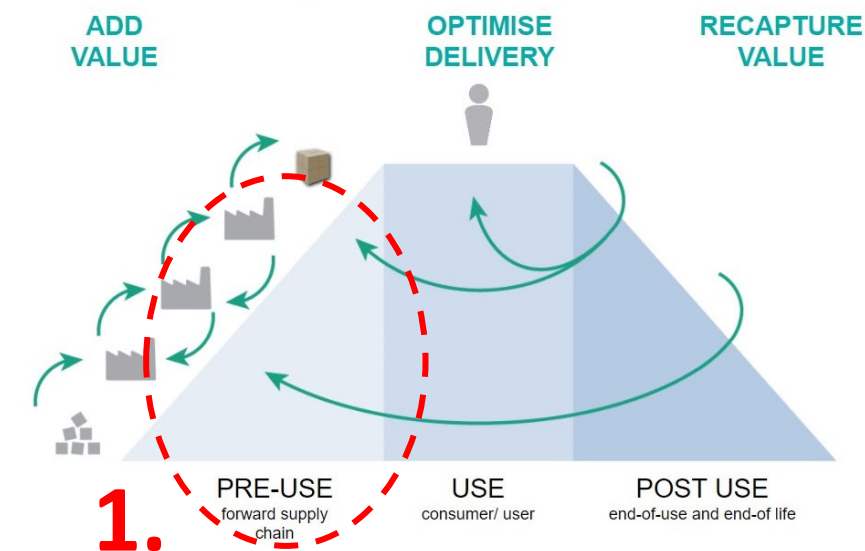
BRITISH SUGAR | Example

Reflect on the **Circularity Compass** mapping, review where there is potential improvement opportunity or exploration of solution spaces

Using the **Circular Compass** to map **British Sugar's** Product and Business Model a number of areas of waste could be identified or potential solution spaces to explore and look for **Circular Strategies**.



These can also be envisioned on the **Value Hill** to help identify **Circular Strategy** areas or use the scanner directly (*note you can also map on the Big Five Structural Wastes and Circularity Grid*).



NOTE: Looking at the Circular Compass mapping there can be seen to be multiple areas of waste to explore in the:
1. pre-use stage
And ranging from particle to product level - Lots of opportunities!

BRITISH SUGAR | Example

Review and scan for potential Circular Strategies
At the pre-usage Stage (there may be more!). Make a note of them.

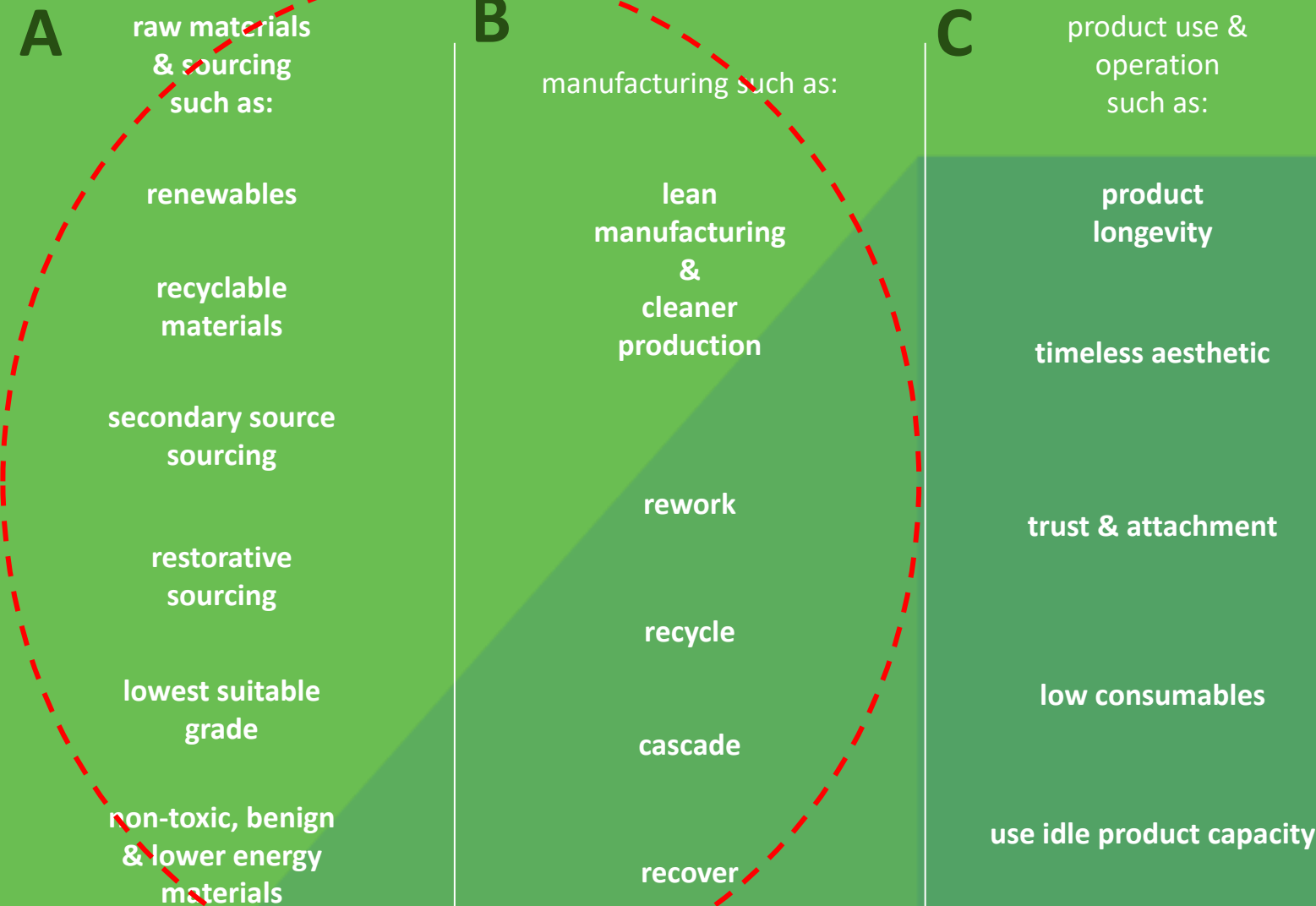
Process and Product Redesign

RESTORE REDUCE AND AVOID
IMPACT

- A - Raw Materials and Sourcing**
B - Manufacturing
Cascading materials at various stages along the production process such as:
- aggregate
 - topsoil
 - animal feed
 - Electricity
 - Renewable energy
 - Bioethanol
 - Horticulture -excess heated water supplies
- C - Product Use and Operation**

RESTORE, REDUCE & AVOID IMPACT

in the areas of:



Value Cycle stage → Pre-use

Use

Post - Use



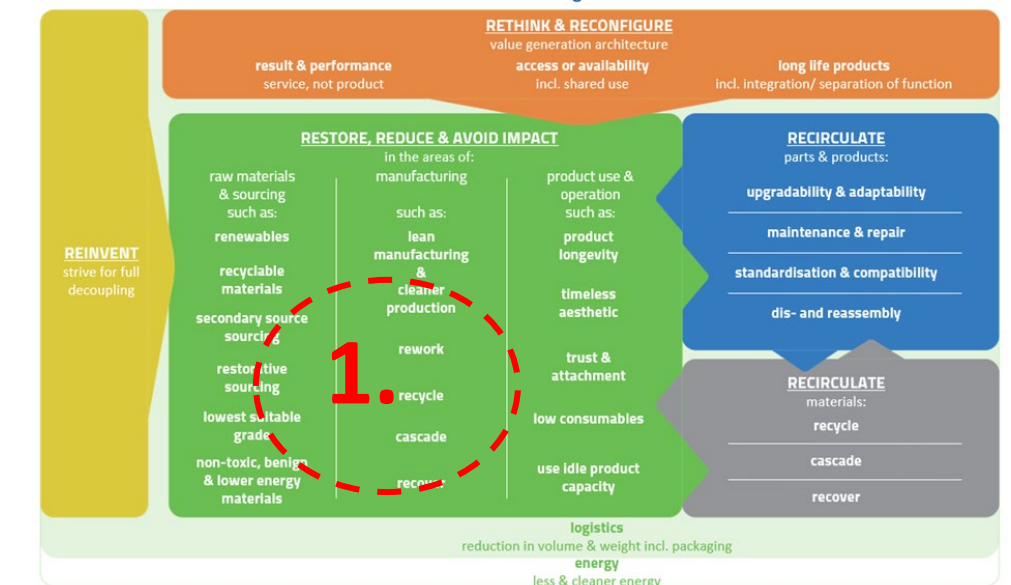
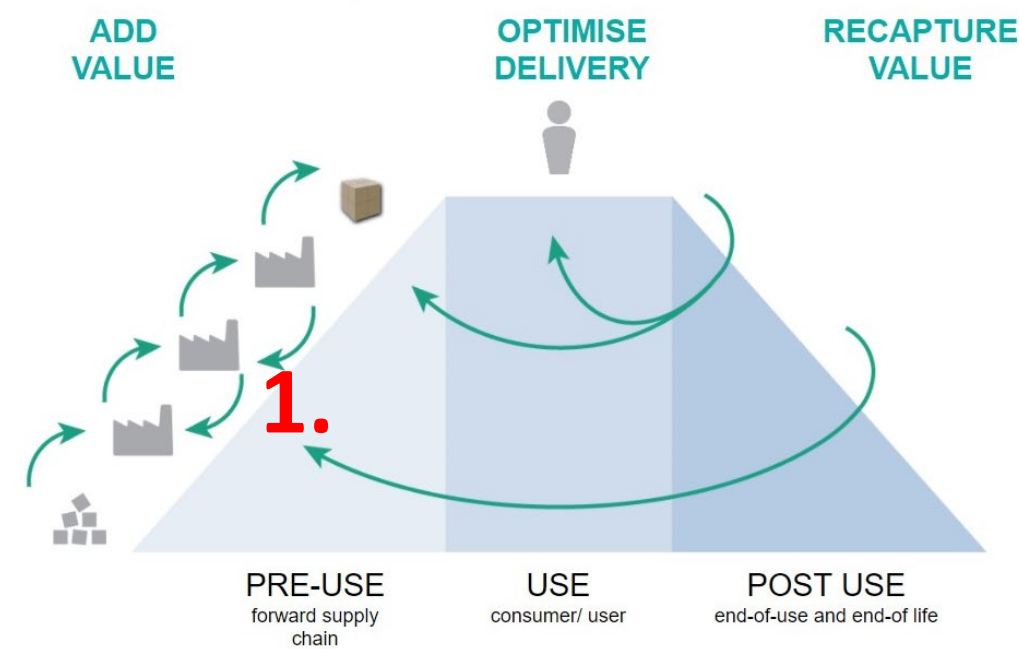
BRITISH SUGAR | Example

Prioritise / choose one or a set of Circular Strategies and evaluate

Prioritising looking at **Cascading** as strategy (at the pre-user stage) at various stages or manufacturing the sugar.

Considering the Value Hill, this has potential to recapture value at different levels for the different material co-products.

This Circular Strategy can therefore be looked at repeatedly as the material product is processed (also remembering logistics and associated energy use for each cascade).



BRITISH SUGAR | Example

ADDITIONAL POINTS

Zooming in further

Additional Circularity Thinking and Circular Compass Mapping could be applied and explored for each of the co-products produced, cascaded e.g. the circularity of the top soil produced and then sold, looking at its complete value chain.



TOPSOIL



Soil cleaned/ recovered from the sugar beets early in the processing cycle is sold as top soil.



HORTICULTURE



Warm water from processes piped to heat greenhouses and CO₂ helping plants grow.



Co-funded by the
European Union

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