

# PRACTICES OF APPLYING CIRCULAR ECONOMY BUSINESS MODELS IN THE INDUSTRY

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# THE STORYLINE.....



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The move towards a net zero, green future significantly promotes sustainability within businesses, which presents increased profit and competitive opportunities for our manufacturing industry. Some ways in which this can be achieved are decarbonising the sector itself, creating the green products, services, and business models that will underpin our future low-carbon economy, and helping everybody achieve the net zero target.

We primarily focus on doing so through business models and the lessons to be learned from a circular economy.





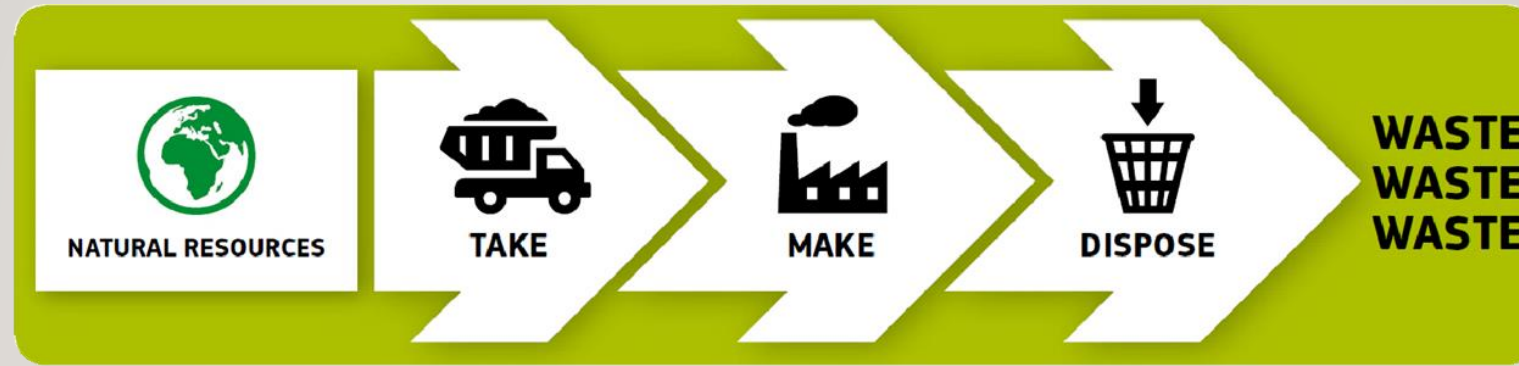
# WHAT IS A CIRCULAR ECONOMY?

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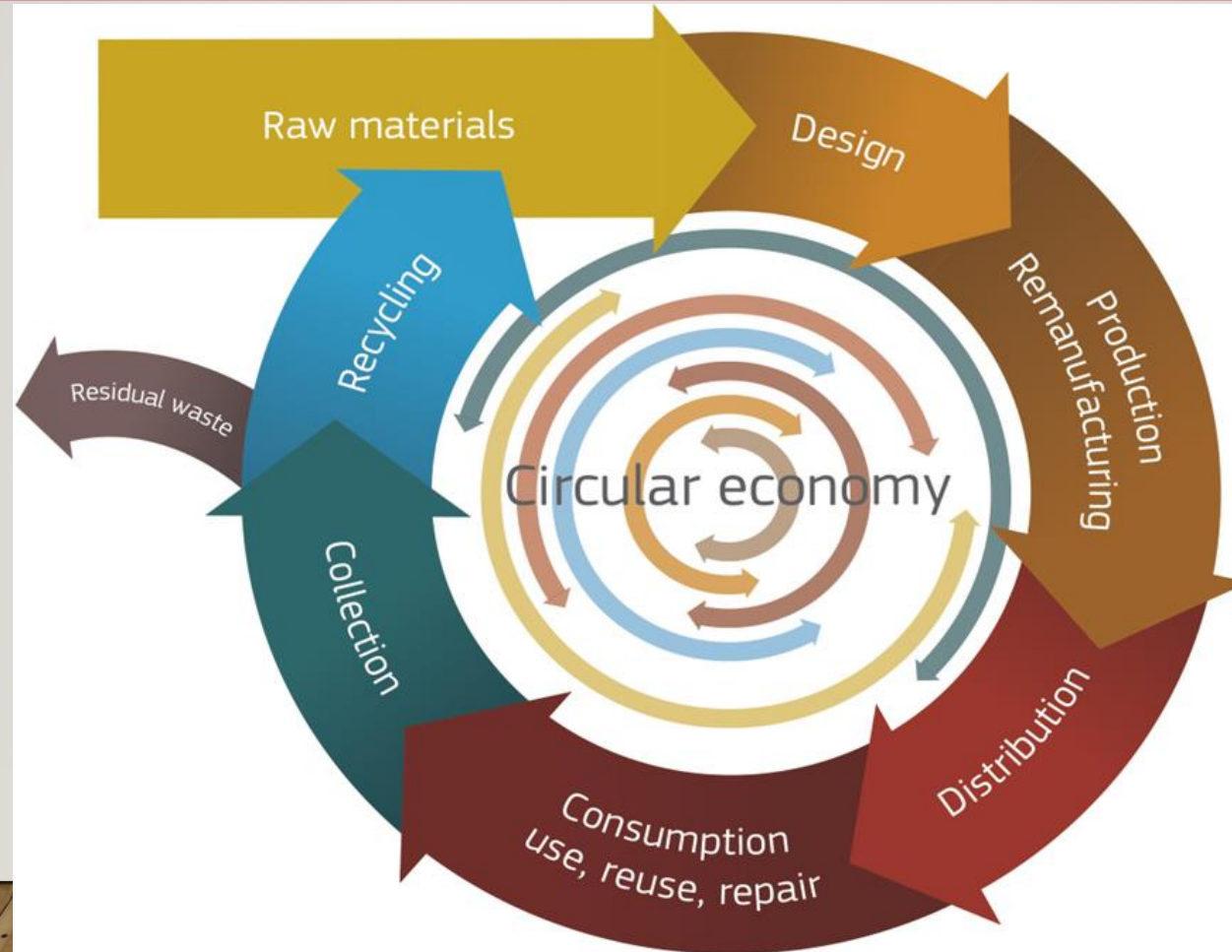
The Circular Economy is a model of production and consumption that aims to redefine the current “take-make-waste” linear model. As seen in the following three slides, it involves sharing, reusing, repairing, remanufacturing and recycling products and materials to extend their life cycles and reduce overall waste. This begins at the design stage, where value is added to the products (e.g. by making them simple to dismantle, with reduced materials content or increasing traceability), allowing them to remain circling within the system for as long as possible. This preventative measure underlines the agenda of reducing waste and managing the world’s finite resources.



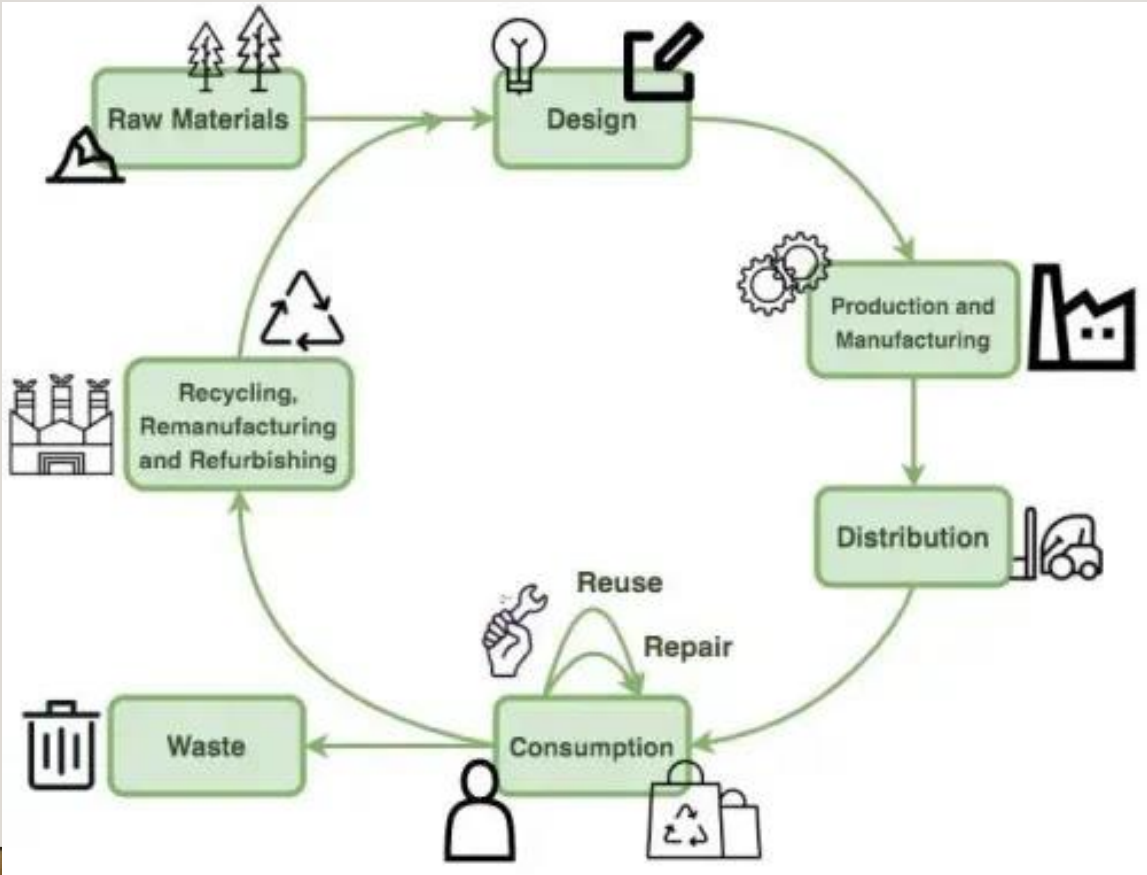
# CONSIDER A LINEAR ECONOMY.....



# NOW CONSIDER A CIRCULAR ECONOMY.....



# CIRCULAR ECONOMY IN THE MANUFACTURING SECTOR







# THE MUDDLE.....

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- The economic case for a green economy is simple; our decision to produce and consume often fails to consider the consequences of doing so. In this case, waste is usually not accounted for during production – and its negative impact indicates an inefficient allocation of resources. As a result, waste is overproduced and becomes our problem to deal with – issues that include environmental impacts like greenhouse gas emissions and damaging ecosystems. Over the last year, the increased use of Personal Protective Equipment (PPE ) masks is an example of this.
- An estimated 194 billion disposable masks and gloves are being used worldwide every month. These masks are non-recyclable and considered medical waste, so they either end up in landfills, are incinerated (releasing harmful gases), or are littered on high streets, beaches and canals. Because masks can take up to 450 years to fully decompose, when masks are littered and end up in oceans, this causes disruptions to the ecosystems and contributes to the world's overall plastic soup



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Waste can be a problem in manufacturing because it is costly. Specifically, the costs can come from waste generation (like the cost of lost resources) and waste disposition (like transport and disposal costs) – for example, Russia’s “garbage reform” includes, which is an environmental levy that aims to encourage waste reduction, recycling and sustainable waste management practices.

In addition, the UK landfill tax currently stands at £96.70 per tonne. Overall, companies can spend between 4-10% of an average annual turnover on waste without a proper waste disposal strategy that begins with waste minimisation.

The prevailing 'take-make-waste' model in manufacturing is not only financially unsustainable but also environmentally detrimental. It perpetuates the need for raw materials and accelerates the depletion of finite resources. This is a pressing concern for the manufacturing industry, particularly in light of the growing apprehension about the stability and security of supply chains.





# THE MODELS.....

WHICH COUNTRY WAS THE FIRST TO IMPLEMENT A GARBAGE REMOVAL SYSTEM?

About 500 B.C., the Greek people built the first dump-style area for garbage. They also established a law requiring garbage to be thrown away at least one mile away from the city walls.

## WHICH COUNTRY RECYCLES MOST OF ITS GARBAGE TO PRODUCE ELECTRICITY?

- Only 1% of Sweden's trash is sent to landfills. By burning trash, another 52% is converted into energy, and the remaining 47% gets recycled. The power generated from waste alone provides heating to one million homes and electricity to 250,000.



# SUSTAINABLE CIRCULAR ECONOMY IN INDIA

## Government Policies Supporting India's Sustainable Circular Economy

The government has implemented different rules to control plastic waste, such as Plastic Waste Management Rules, e-waste Management Rules, Construction and Demolition Waste Management Rules, and Metals Recycling Policy. These rules, a testament to our commitment to sustainable economic growth, are already in place.

The government is focusing on accelerating the transition by involving municipal solid waste and liquid waste, scrap metal, electronic waste, lithium-ion batteries, solar panels, gypsum, toxic and hazardous industrial waste, used oil waste, agriculture waste, tyre and rubber recycling, and end-of-life vehicles (ELVs).

The National Solar Mission has been formulated to increase the use of solar energy in India to reduce dependency on fossil fuels. It is a significant government initiative with active state participation to promote ecologically sustainable growth while addressing India's energy security challenges.



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- The National Electric Mobility Mission Plan aims to have at least 30% of all vehicles in India be electric by 2030. This plan has enhanced national fuel security, provided affordable and environmentally friendly transportation, and enabled the Indian automotive industry to achieve global manufacturing leadership.
- The National Action Plan on Climate Change is working on formulating a comprehensive strategy for addressing climate change in India. It also focuses on measures to reduce emissions and adapt to the impacts of climate change.
- To reduce greenwashing, the Securities and Exchange Board of India (SEBI) has introduced new guidelines for companies to disclose their environmental, social, and governance (ESG) performance. Under these guidelines, companies must disclose information on their environmental and social policies, performance, risks, and governance structure and practices.



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- The government advocates about 7Rs of circular economy which includes Reduce, Reuse, Recycle, Redesign, Remanufacture, Refurbish, and Repair. These should be considered as guiding principles while designing new ventures, business parks, and industrial clusters. With a system-level approach and favourable economic conditions, India can become a sustainable manufacturing hub in the coming years.



# UZBEKISTAN'S 2019–2030 GREEN ECONOMY TRANSITION STRATEGY

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- Reducing specific greenhouse gas emissions per gross domestic product (GDP) unit by 35% by 2030 against the 2010 baseline
- Upgrading industrial infrastructure to raise its energy efficiency by 20% and introducing cleaner and safer industrial technologies
- Improving water use efficiency in all economic sectors, expanding farmland under drip irrigation up to 1 million hectares, and increasing food crop yields by 20–40%
- Achieving land degradation neutrality Training and capacity building on green economy, investing in education and research collaborations with leading international institutions
- Raising the renewables share in the total power generation by over 25%, including bringing the share of solar and wind power in power generation to 25% or 8 GW,
- Providing access to modern, affordable and reliable electricity supply to 100% of the population and economic sectors. Introducing internationally compatible “green” criteria in public investment and procurement
- Developing a building energy certification system Mitigating the impacts of the Aral Sea environmental crisis.

# REDUCE, REFURBISH/REUSE, RECYCLE AND RECOVER

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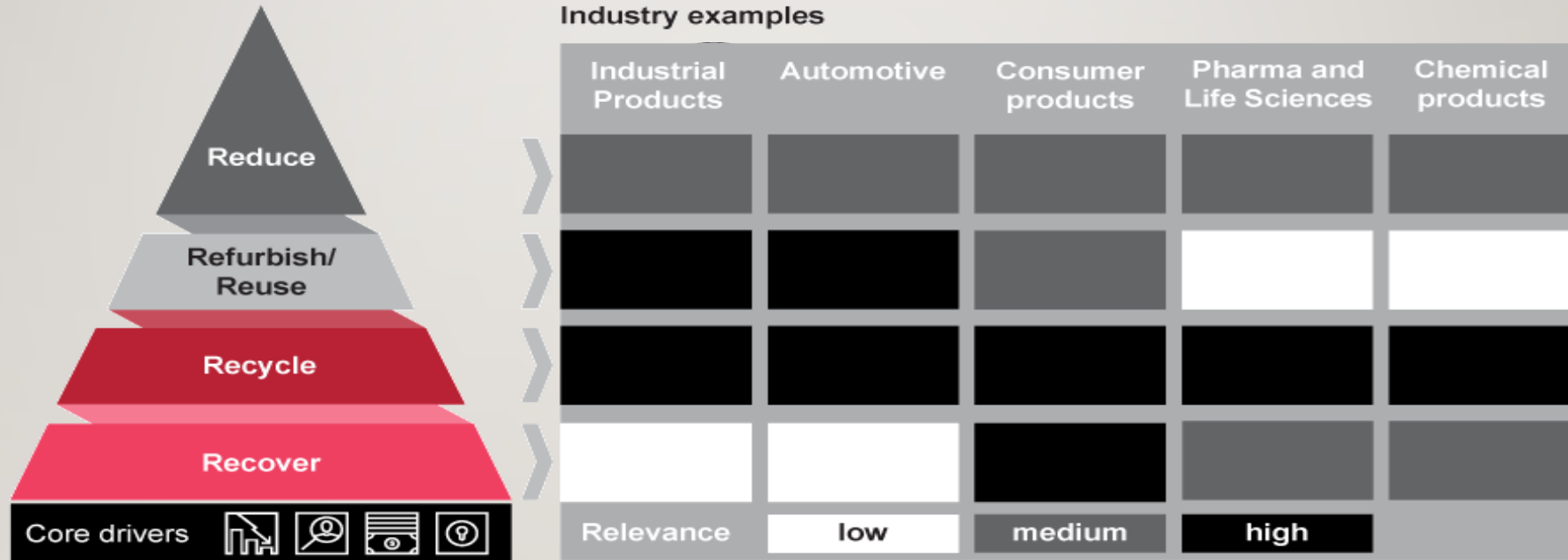
Reduce, Refurbish/Reuse, Recycle and Recover. Each of the four Rs contributes to sustainable manufacturing. However, their relevance for the Circular Economy (CE), impact on the current manufacturing strategy and ease of implementation vary. Moreover, the level of impact and applicability is industry-specific.

Challenges and opportunities are likely to vary significantly from one industry to another. Individual assessments and concepts are necessary as there is no one-size-fits-all solution to CE across the manufacturing industry. The graph below shows the different impacts of CE in selected industries.





The decision on which R to focus, depends on industry specifics



# IMPLEMENTATION OF CE ALONG THE MANUFACTURING VALUE CHAIN REQUIRES NEW CAPABILITIES

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Bringing the CE concept to life within the manufacturing value chain involves substantial changes in core production and supply chain processes. An effective reverse logistics process to get the used products back into the cycle is essential for the success of CE. This may be done by increasing customer interaction after the initial sale. Gathering data on volume forecasts for the return of used products is necessary to fully apply the concept in manufacturing industries



# AND, FINALLY,

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Investing in a circular economy requires prioritising long-term goals. Overcoming knowledge and cost barriers can open the doors for manufacturing, achieving a more innovative and sustainable future that is developed to suit the future low-carbon, low-waste economy.





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Thank  
you!

