



# **Initiative towards a plastic free country**

**A case study of the textile sector**

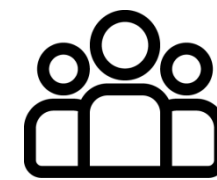
**18.10.2021**



# Who we are?



Pioneer of textile in Mauritius - Origins since 1970



Team of 2000 collaborators



Fully integrated in house processes ranging from knitting, dyeing to ready made garments



[www.rtknits.com](http://www.rtknits.com)

# Our Mission

“To accelerate the transition towards sustainable clothing”

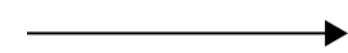
# RT Knits Sustainability Agenda

Key Challenges

Priority Areas

Our commitments

**Climate change**



Energy and Water

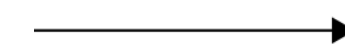


Becoming carbon neutral by 2040  
Sustainable water use

**Healthy and sustainable living**



Air emissions, wastewater and  
chemical management

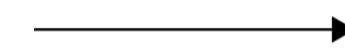


Protecting our employees and the environment through healthy  
air quality, safe chemical use and wastewater management

**Sustainable consumption**

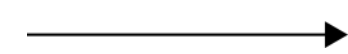


Circular design, packaging  
and wastes



Promoting sustainable consumption through circular design  
of our products

**Natural resources depletion**

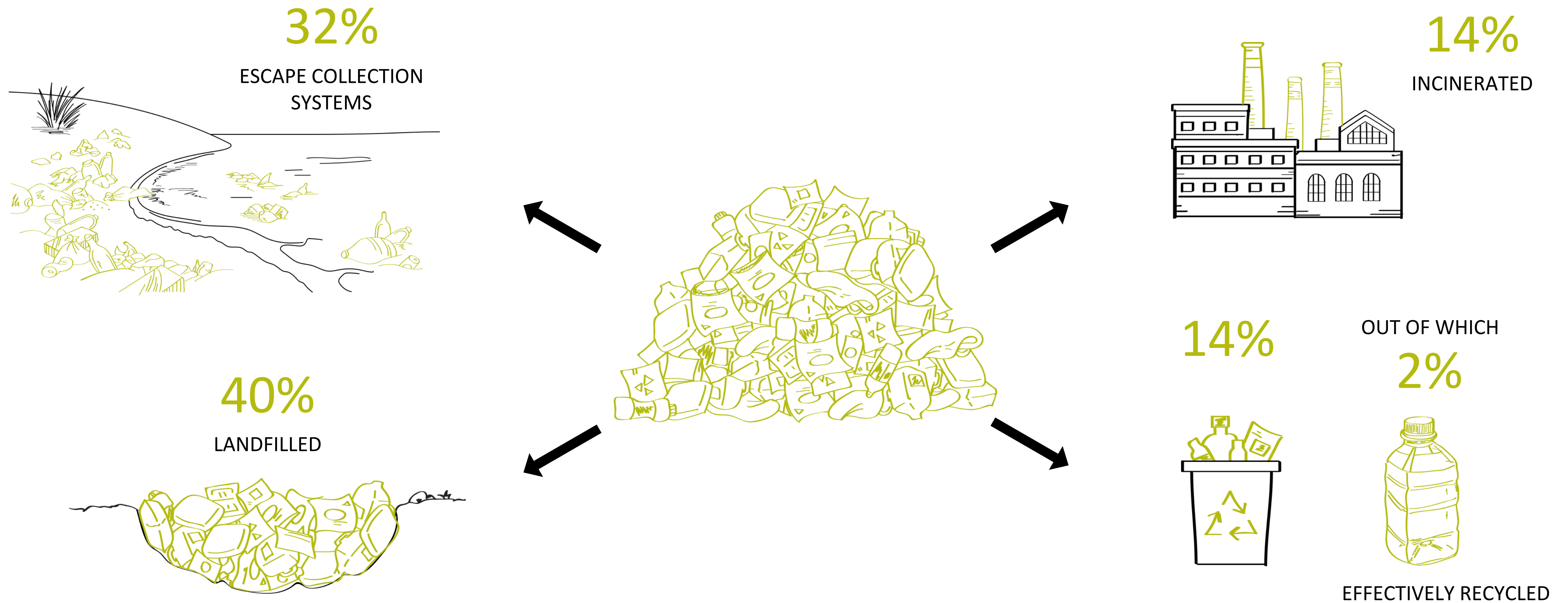


Raw materials



Using more and more materials that improve biodiversity,  
protect ecosystems instead of destroying them and depend  
less on non-renewable resources

# What happens to plastic at its end of life?



Source: World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company,

*The New Plastics Economy — Rethinking the future of plastics (2016, <http://www.ellenmacarthurfoundation.org/publications>).*

# Purpose of using plastic in the textile sector

1

Almost 98% is used for packaging: Protection of raw materials, consumables and products along each stage of a product's life cycle from damage while it's in transport

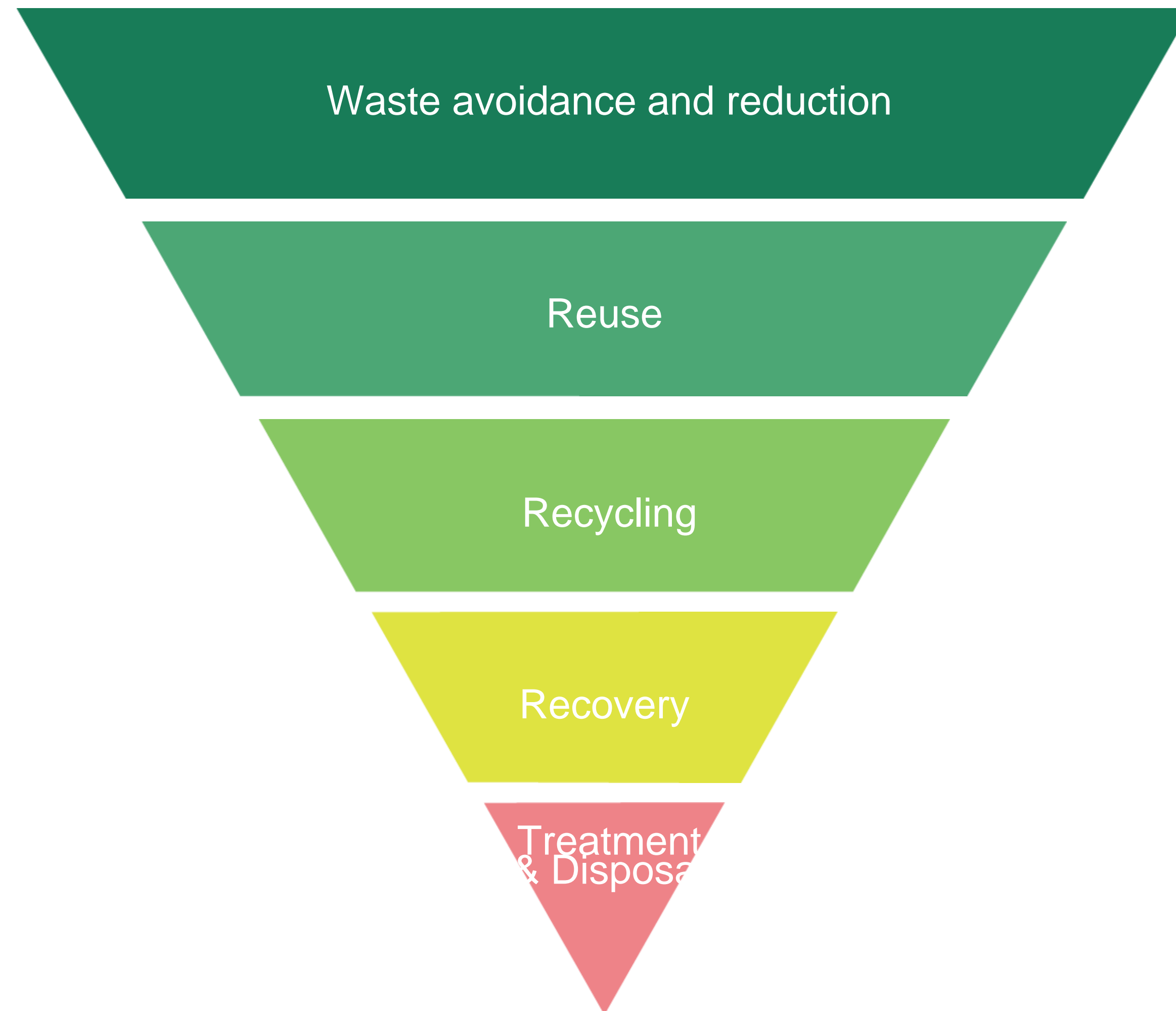


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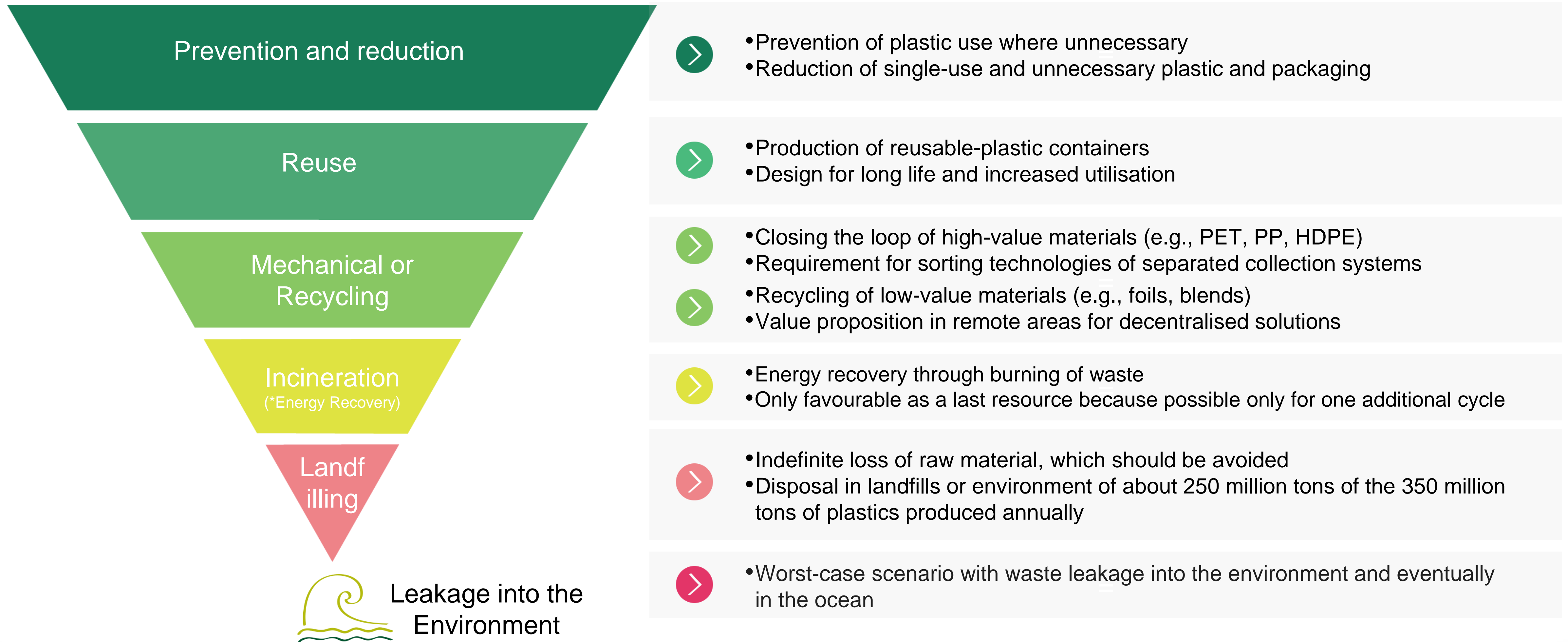
Less than 2% is used to facilitate production processes, e.g spreading and cutting

- Currently, plastic is the only water-impermeable packaging material that guarantees protection from water or liquid damage.
- Damaged materials mean cancelled orders

# The pyramid for plastic waste management



# The pyramid for plastic waste management



Source: A Circular Solution to Plastic Waste, BCG (2019)



# Some initiatives at RT Knits

# Initiatives at RT Knits

## Plastic avoidance - Reusable fabric covers

- Dyed fabrics are stored for a certain time before delivered to the cutting department when processing needs to start. These are then transported to another building and are highly susceptible to damage and exposure if not protected.
- Normally, the fabrics were baled in HDPE plastic films until we started using reusable fabric bags to protect them.
- **64% reduction in HDPE plastic film used for packaging between 2016 - 2020**



# Initiatives at RT Knits

## Plastic reuse and avoidance - Chemical containers

- Chemicals are used in large volumes in our industry. Empty chemical containers are generated on a daily basis and can sometime be considered as hazardous wastes.
- Empty chemical containers are returned to their suppliers to be reused for the same purpose: **162,000 kgs worth of plastic containers have been returned between 2018 - 2021**
- Chemicals used in large volumes and necessitating frequent deliveries are refilled by suppliers in large tanks present in our stores instead of being delivered in plastic containers



# Initiatives at RT Knits

## Plastic reduction - Optimising plastic use at production level

- A plastic film is placed on fabric to ensure that the vacuum system in the auto spreader and cutter works properly.
- Computer aided marker: A new functionality has been added in our computer-aided design programme used by pattern makers and technicians during the design stage which shows the potential to significantly optimise those markers.
- Optimising the marker also enables us to minimise the use of plastic films required.



# Initiatives at RT Knits

## Plastic recycling

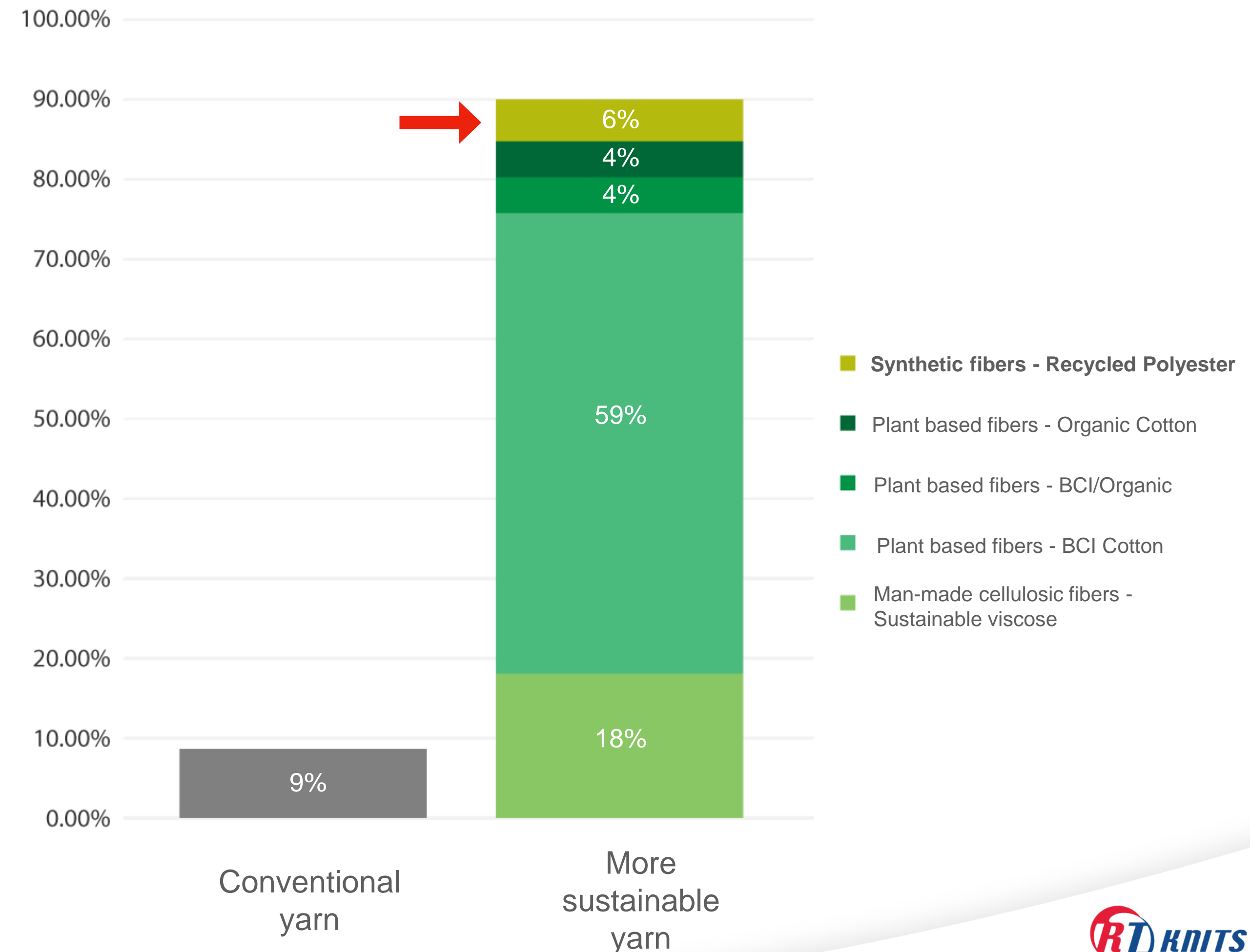
- All recyclable plastic wastes generated across the factory are collected and sent to a local recycler.
- **45,000 kgs of plastic wastes** generated across the factory **have been down-cycled to other useful products between 2019 - 2021**



# Initiatives at RT Knits

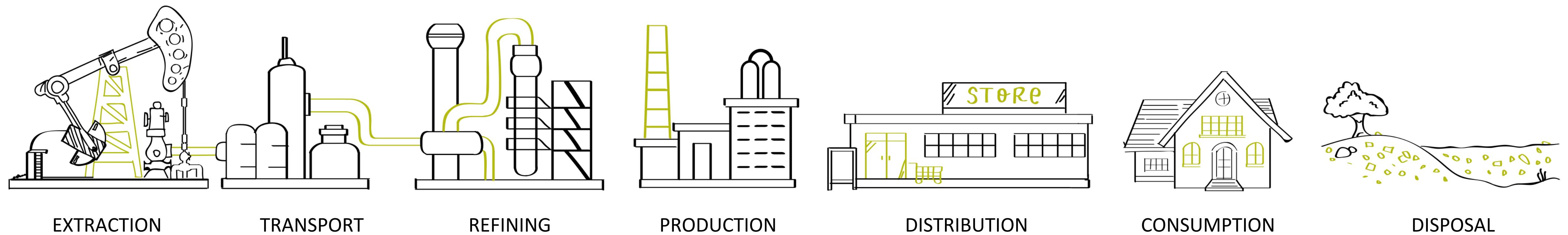
## Moving to more sustainable plastic based fibers

- Polyester (PET) is the most widely used fiber in the apparel industry: **52%** of the total volume of fibers produced globally!
- At RT Knits, we are gradually switching to recycled polyester as a more sustainable option to virgin polyester (**Accounts for 6% of our overall yarn consumed**)
- Each kg of recycled polyester represents a reduction in GHG emissions by more than 70% as compared to virgin polyester



But what can we do to achieve a plastic free industry globally.....

# Life cycle of a plastic packaging



To become plastic free, we need to tackle the impacts at each stage of a plastic's life cycle



# Our sustainable packaging framework

## Three guiding principles

1

Prioritise packaging materials with minimal environmental impacts

2

Minimise packaging materials used versus products

3

Optimise packing density

# Our sustainable packaging framework

## Guiding principle 1

1

Prioritise  
packaging  
materials with  
minimal  
environmental  
impacts

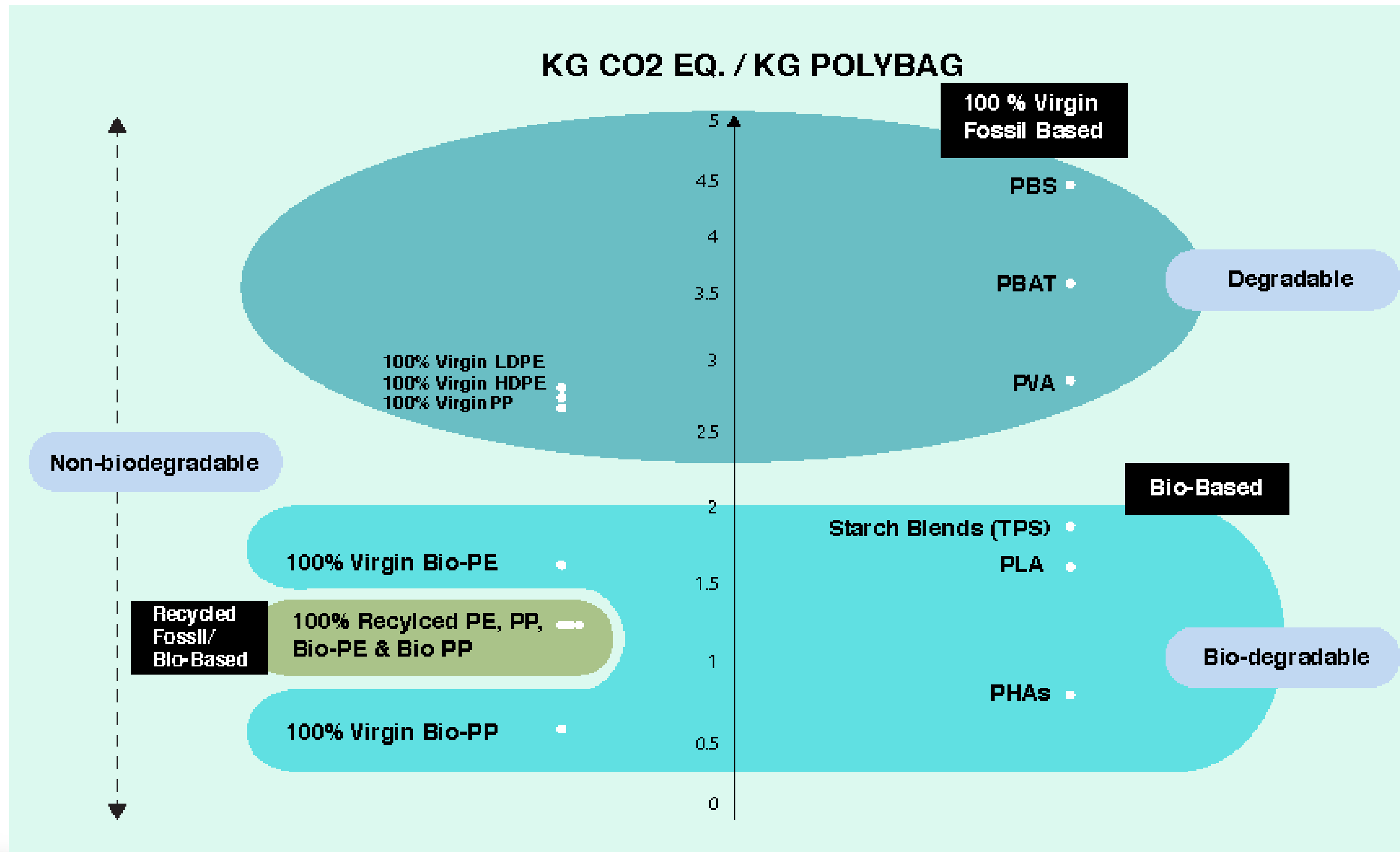
- Prioritise polymers which have minimum carbon footprint at each stage - from extraction, to processing and end of life.
- Choose polymers which are easy to recycle at the end of life.
- Ideally, move from fossil based plastics to plant based ones.

### What have we done?

- In-depth study of different packaging materials used in the industry while also evaluating their environmental impacts at the following stages: raw material extraction, production, consumer and end-of-life.
- We were able to conclude valuable insights which enable us to choose packaging materials with less impacts

# Our sustainable packaging framework

Guiding principle 1: Prioritise packaging materials with minimal environmental impacts



# Our sustainable packaging framework

## Guiding principle 2

2

Minimise  
packaging  
materials used  
versus products

- Develop a packaging design that doesn't use a large amount of packaging material compared to the actual weight of the product it protects
- Embrace simplicity: Avoid unnecessary packaging just for aesthetics or marketing
- Replace with stronger but lighter materials to retain functionality of packaging

### What have we done?

- Currently carrying out studies on different parameters to minimize the packaging materials used as opposed to the products.
  - E.g, Optimum thickness of a polybag which can be used for different customers and which can reduce amount of polymer materials used.

# CASE STUDY

## Minimising plastic used for each garment

2

Minimise  
packaging  
materials used  
versus products

### Comparing weight of polybag versus weight of garment it protects

Min	2.84 g
Max	20.21 g
Average	8.8 g



Plastic weight can represent up to **14%** of the garment weight!

**But 35 microns is more than enough!**

If we can also minimise garment folding size, we can optimise polybag dimension



**All garments can be perfectly protected with a polybag of only 4g!**

**POTENTIAL PLASTIC YEARLY SAVING GLOBALLY: 720,000 TONS**

*Based on 150 billion garments produced globally on an annual basis*

# Our sustainable packaging framework

## Guiding principle 3

3

Optimise  
packing density

- Optimal space utilisation when transporting packed goods that will have a direct impact on logistics emissions reduction

### What have we done?

Research on how to increase the number of garments to be filled in a carton box by improving the garment folding and packing methodology. This optimisation methodology will allow us to reduce the carbon footprint of logistics per product transported.

Thank You