



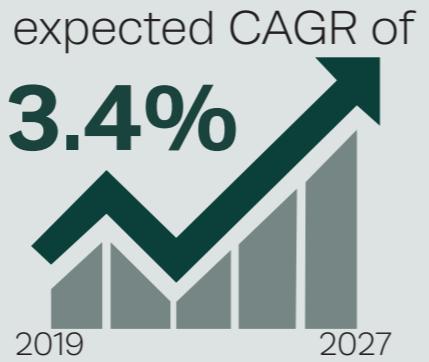
travel toothpaste

making oral care sustainable

market research

The Toothpaste Market

global market worth of
\$17.75 billion
in 2019



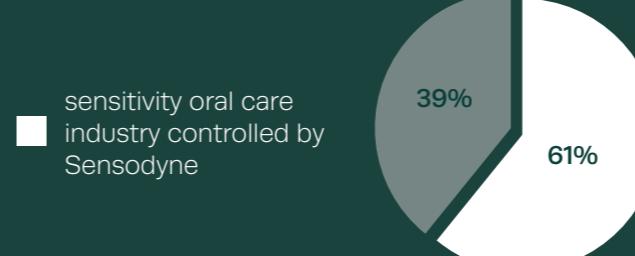
Sensodyne



controls ~10%
of global market

The World's No. 1 Sensitivity Toothpaste

4.6 million
users in 2020



Market Trends



more customers standing
against to animal testing



vegan toothpaste



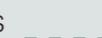
increased attention to
good dental hygiene



sensitive toothpaste



increased dental problems
in children



more toothpastes
for children



users are becoming
aware of sustainability



0-waste toothpaste

MARKET RESEARCH

1

TRAVEL TOILETRIES

2

BRAND ANALYSIS

3

CONSUMER RESEARCH

4

PRODUCT TEARDOWN

5

JOURNEY MAP

6

FLOW MAPPER

7

MATERIAL &
SYSTEM ANALYSIS

8

INSIGHTS &
SPECIFICATION

9

Key Insights

- As the needs of the consumers are changing, toothpaste tubes must also adapt so that they are able to accommodate the new compositions
- A greater impact can be made by modifying children's toothpaste tubes as they are beginning up the greater part of the market
- More users are paying attention to the environment impacts of the products that they purchase

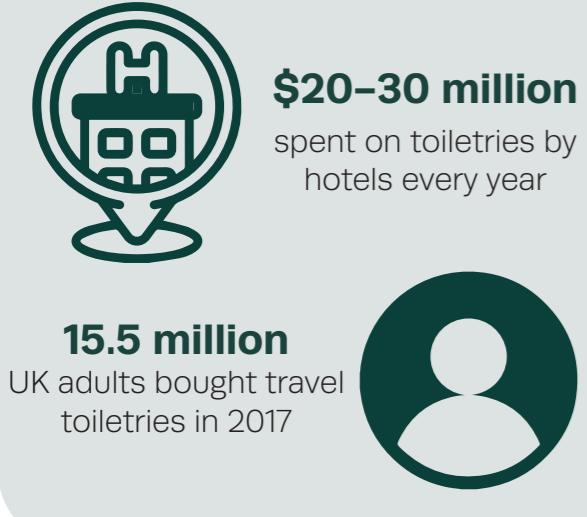
travel toiletries

As **international travel** begins to pick up again after the Covid-19 pandemic, so does the sale of travel toiletries, and specifically, **travel toothpastes** – a specific set of products designed to comply with rules of flying with liquids. Researching these particular toiletries will help to focus any redesigns on improving the sustainability of travel toothpastes and the industry as a whole.

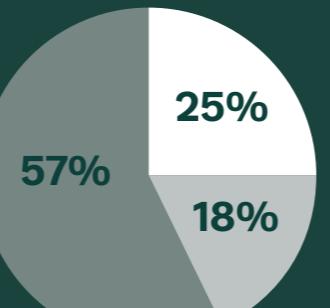
Flight Regulations



Primary Consumers



Environmental Impact



- vacationers who do not recycle their toiletries
- vacationers who do not have facility to recycle
- vacationers who recycle toiletries

Standard



5.1ml per 1g of packaging

Travel



2.7ml per 1g of packaging



981 tonnes

of travel toiletries thrown away every year

equivalent of:

2.7 Boeing 747s

MARKET RESEARCH

TRAVEL TOILETRIES

BRAND ANALYSIS

CONSUMER RESEARCH

PRODUCT TEARDOWN

JOURNEY MAP

FLOW MAPPER

MATERIAL &
SYSTEM ANALYSIS

INSIGHTS &
SPECIFICATION

Key Insights

- Focussing on consumer bought products will have a greater impact on the environment, but can later be implemented by hotels, which purchase in bulk
- Existing packaging for travel toiletries is more detrimental to the environment than packaging for standard toiletries
- A significant proportion of vacationers throw their toiletries into general waste as opposed to bringing them back home to recycle

[1] <https://www.gov.uk/hand-luggage-restrictions>

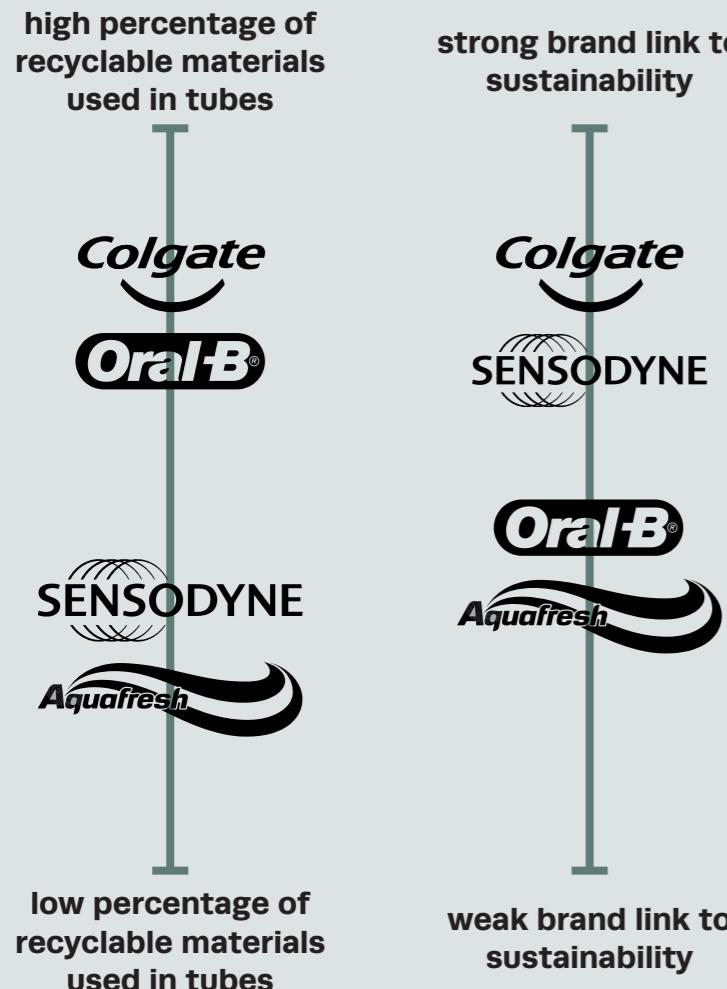
[2] <https://thealcazar.com/how-much-do-hotels-spend-on-toiletries>

[3] <https://www.directivegroup.co.uk/en/news/brand-news/2018/plastic-waste--980-tonnes-of-travel-sized-products-are-dumped-ev.html>

brand analysis

Brand Comparison

4 of the top toothpaste brands were ranked based on how recyclable the materials used are and on how closely tied their brand image is with sustainability.



The brands' link to sustainability was ranked based on how well-publicised their eco-push is and how much they are doing to achieve their sustainability goals.

Travel toothpaste is sold by a variety of different brands (e.g Colgate, Sensodyne etc.), all of which have different goals related to sustainability. Carrying out research into each's brand's **sustainability goals and accomplishments** will help to understand where Sensodyne stands in relation to them and how to push them to the forefront of **sustainable oral care companies**.

Sensodyne's Sustainability



net zero impact on climate by 2030



How can we reduce the amount of greenhouse gas emissions?



net positive impact on nature by 2030



How can we use and impact water quality?



How can we minimise material wastage?



How can we impact natural ecosystems?

One of the first pharmaceutical companies to set environmental targets in

2010

Since 2010, reduction of:

carbon emissions
34%

waste to landfill
78%

water usage
31%

Key Insights

- Sensodyne has the lowest level of recyclable materials in their products of the 4 top brands
- Sensodyne has a deep desire to make their products more sustainable and reduce the negative impact it has on the environment
- They will be willing to include products which have a less detrimental impact on the environment into their brand

MARKET RESEARCH

1

TRAVEL TOILETRIES

2

BRAND ANALYSIS

3

CONSUMER RESEARCH

4

PRODUCT TEARDOWN

5

JOURNEY MAP

6

FLOW MAPPER

7

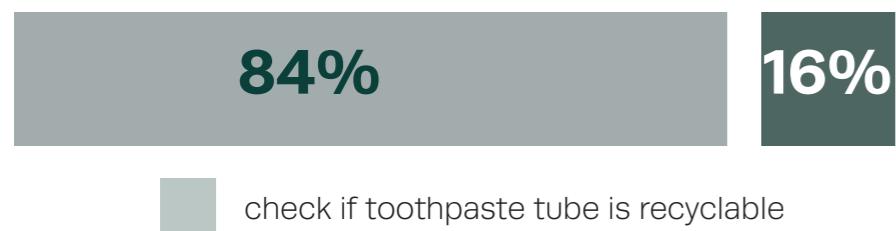
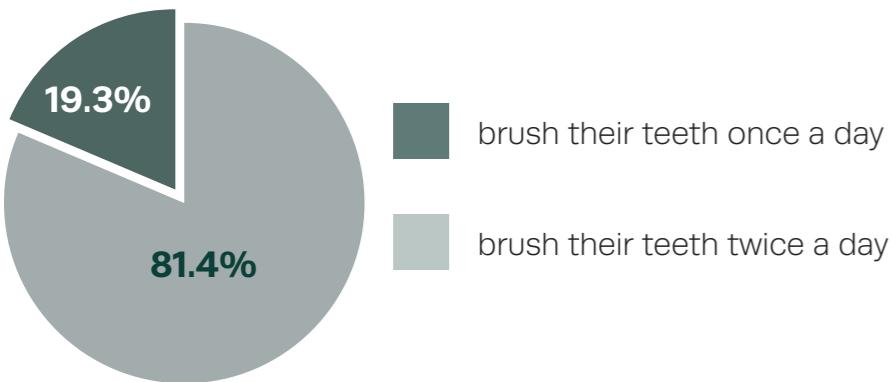
MATERIAL & SYSTEM ANALYSIS

8

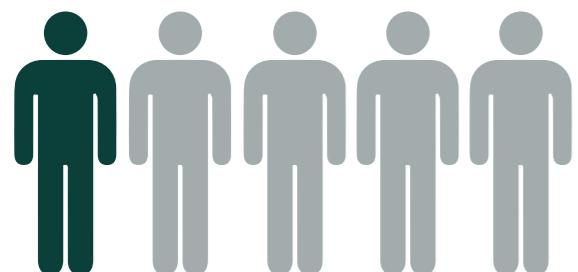
INSIGHTS & SPECIFICATION

9

consumer research



100% throw away travel toothpastes as soon as they are finished, regardless of whether or not there are recycling facilities available



1 in 5 people put their travel toothpastes into recycling. The rest use general waste as they are unsure about whether or not it can be recycled

Key Insights

- Travel toothpastes last approximately 2 weeks
- People do not know if they can recycle them
- Countries do not have good recycling facilities

As earlier identified, **children's toothpaste** occupies a greater proportion of the market, and therefore I am focussing on redesigning Sensodyne toothpaste for **6-12 year olds**. A total of **50** parents (the primary buyers of the toothpaste) completed a **survey**, informing me of their own toothpaste usage, and their responses were collated below.

JACKSON

AGE
12



Manchester

motivations:



Manchester

ignorant



knowledgeable

unconcerned



concerned



"We can't just let rubbish pile up on landfills, we've got to try our best to stop stuff ending up there"

RACHEL

AGE
41



London

motivations:



London

ignorant



knowledgeable

unconcerned



concerned

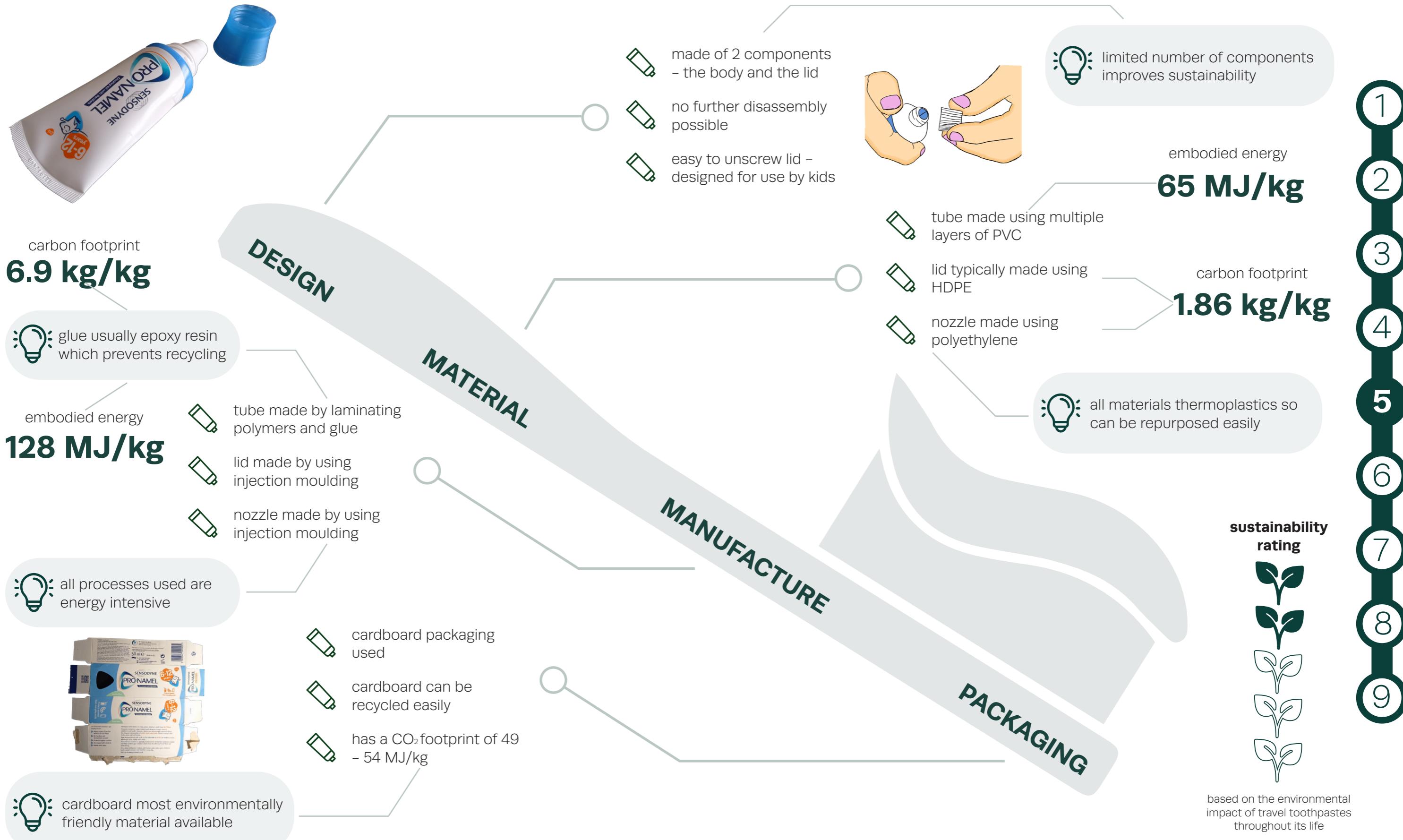


"I want my children to live in a better world, and I want them to contribute to an eco-friendly one"

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

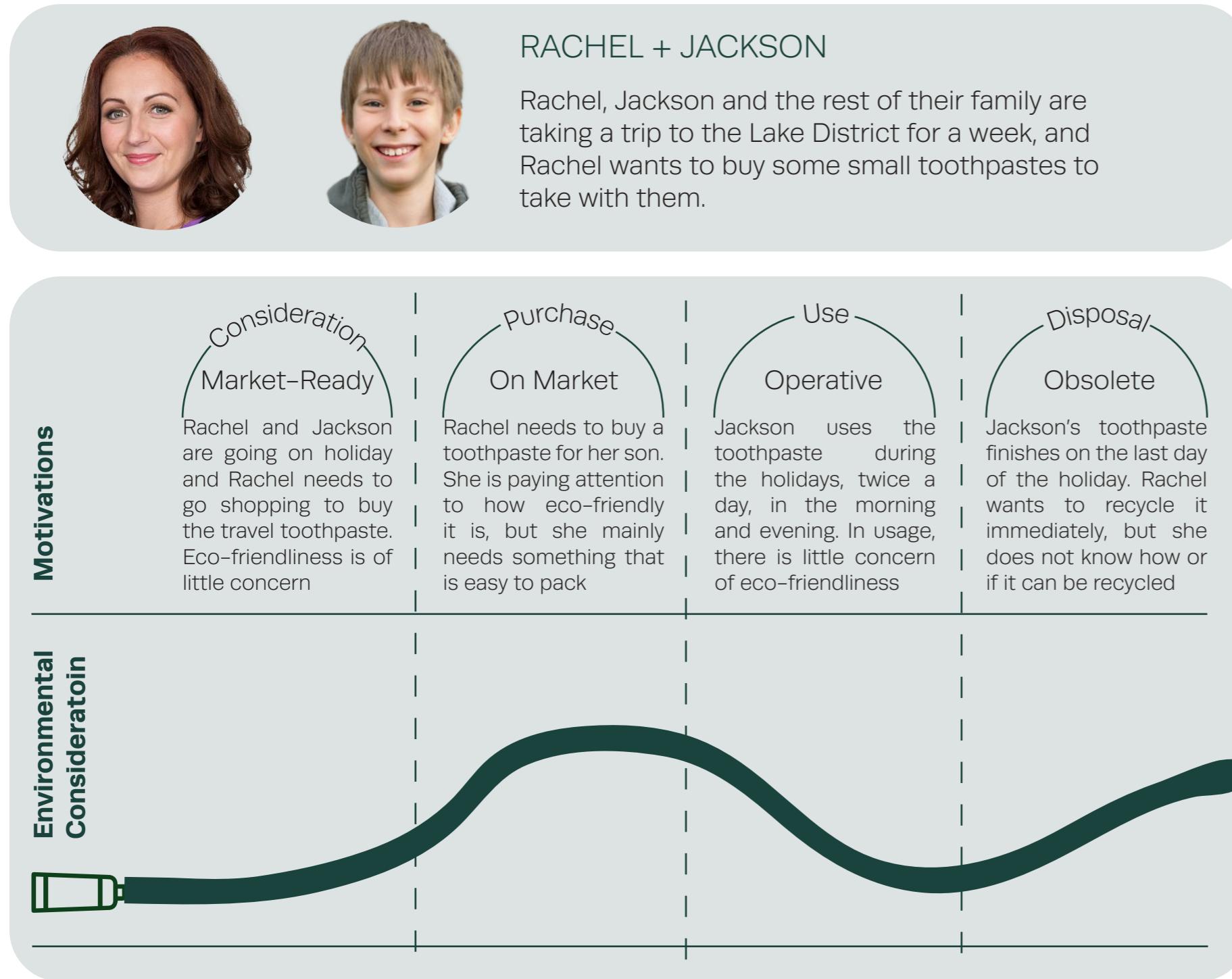
product teardown

A **Sensodyne ProNamel** toothpaste for 6 to 12 years old was purchased from Superdrug, costing £1.99. I carried out a **disassembly** of the product, and carried out an **Eco Audit** overview to help with analysis of how the product was **made** and the subsequent **environmental impact** it has.

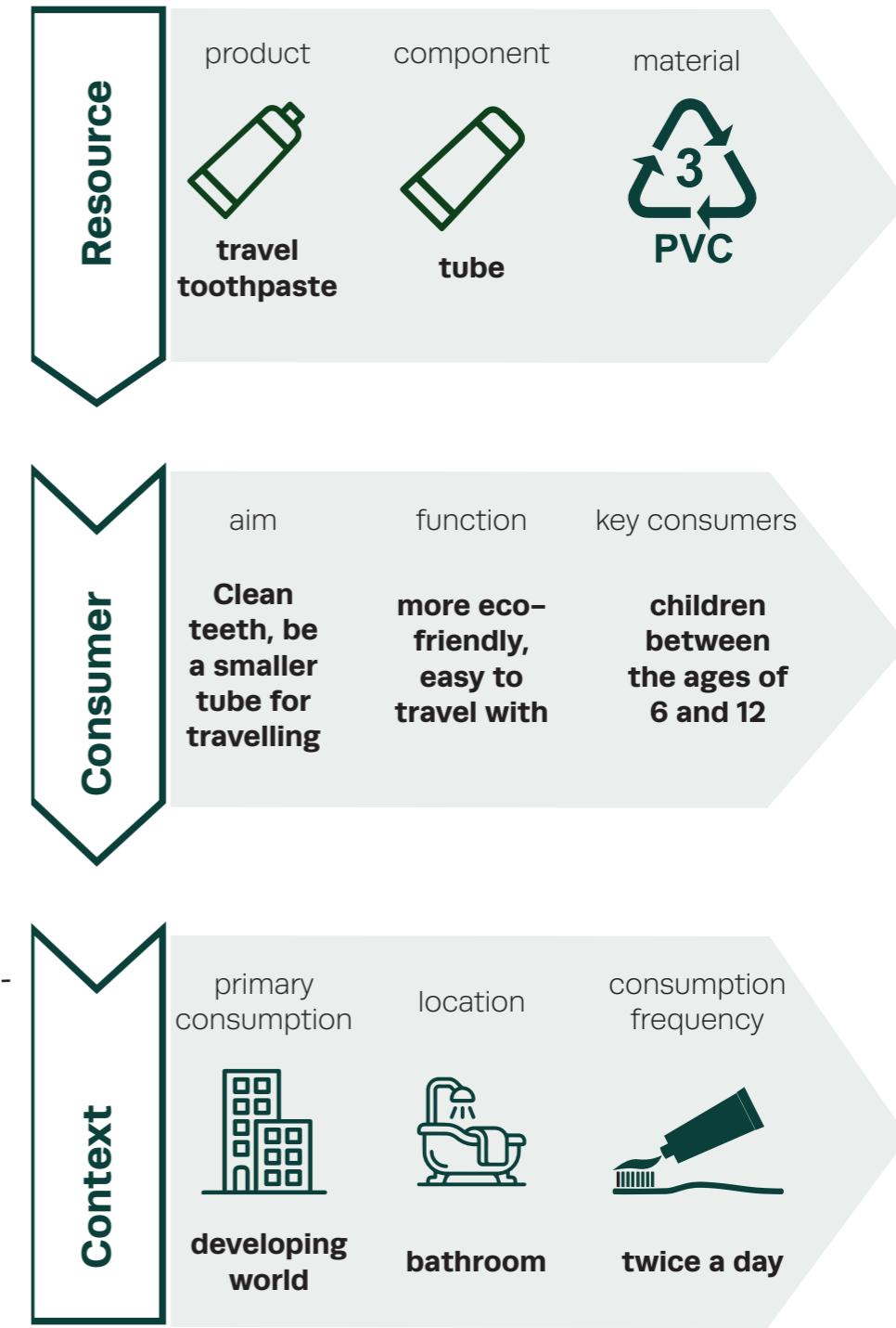


journey map

Following research done into consumers through the use of **surveys** and **personas**, a journey map of the consumer's journey was created, primarily mapping their **thought processes** and **environmental considerations** as they go through the states of **consideration, purchase, usage** and finally **disposal**.



resource specification



Key Insights

- Purely eco-friendly projects come at a higher cost which reduces their accessibility
- The ratio of toothpaste to packaging of travel toothpastes make them more detrimental to the environment than standard toothpastes
- Recycling facilities need to be made much convenient and accessible all over the world

flow mapper

stakeholders

primary:



children between the ages of 6 and 12 are the primary stakeholders

secondary:



parents, factory workers & shop workers at certain retail stores are secondary stakeholders

tertiary:



governments and airlines are tertiary stakeholders due to their own regulations

material circularity

recycled material content

aiming for 100% recycled content by 2025

biological material content

little recycled content in existing tubes
PVC layered with epoxy prevents recycling

product lifetime

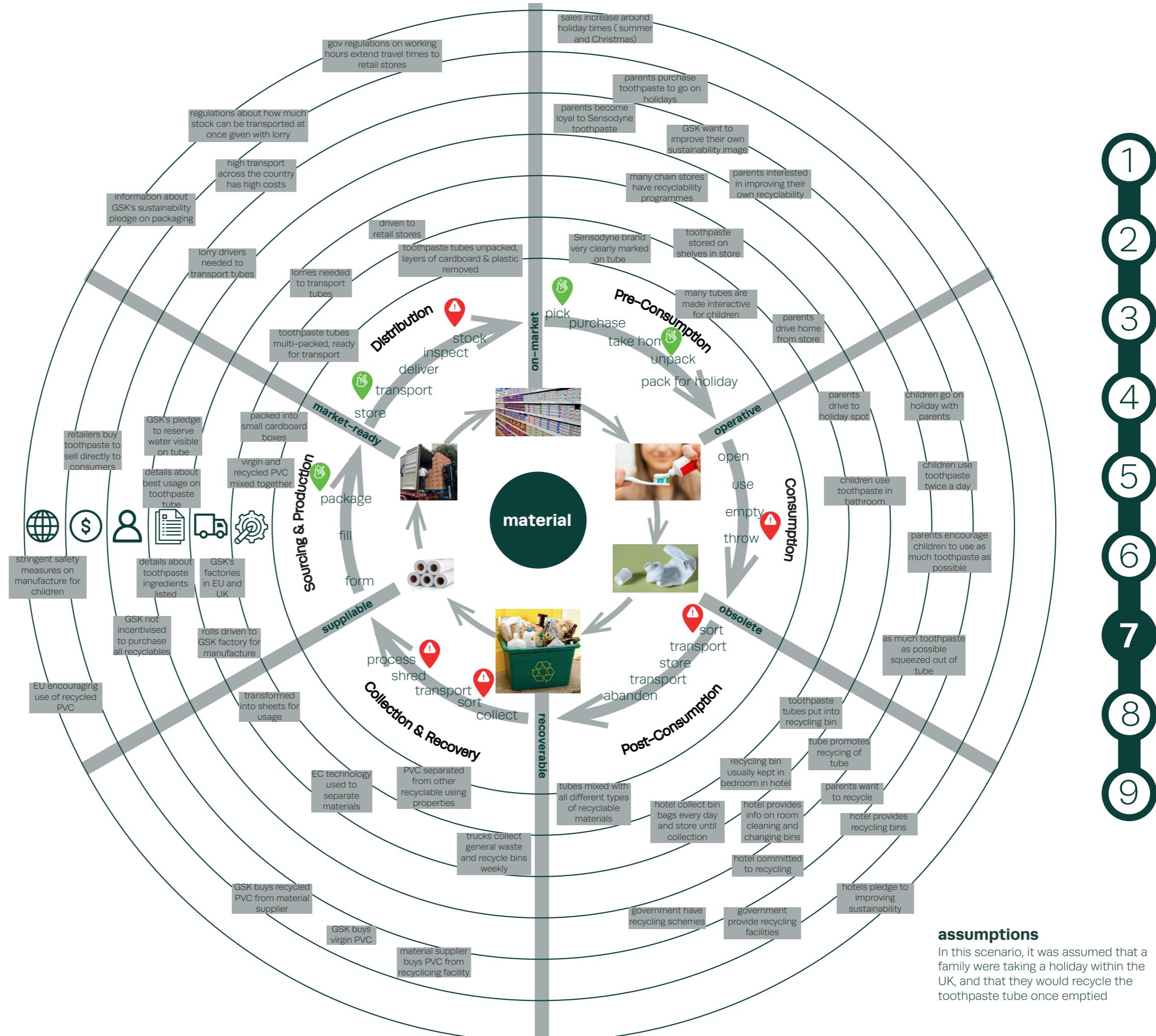
average product lifetime of 2 weeks
becomes obsolete once toothpaste is over

material recycling rate

lids can be recycled – but usually isn't
tube cannot be recycled due to epoxy in it

component reuse rate

product very rarely properly recycled/reused



1

2

3

4

5

6

7

8

9

assumptions

In this scenario, it was assumed that a family were taking a holiday within the UK, and that they would recycle the toothpaste tube once emptied

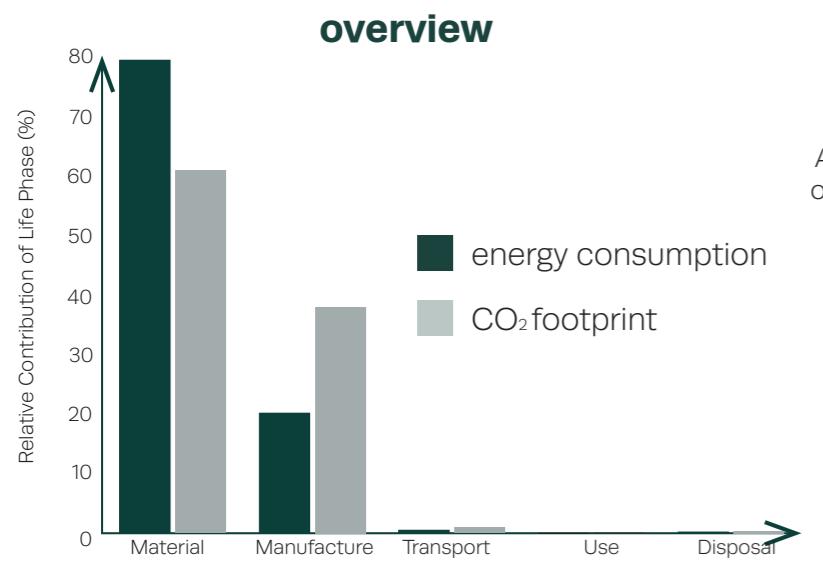
material & system analysis

The **Eco Audit** tool on CES Edupack was used to carry out an analysis of the materials used throughout the process, while an analysis of **existing recycling systems** in place in chain retail stores was also carried out.

material analysis

assumptions

- tubes transported from Cumbria to London
- glue taking up 4% of tube's mass
- nozzle taking up approximately 30% of tube's mass

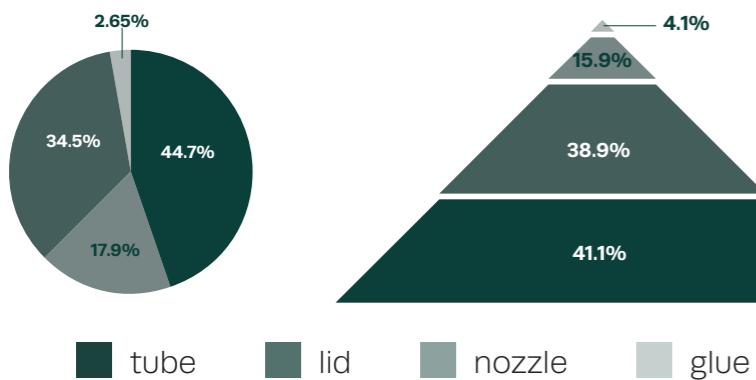


transport

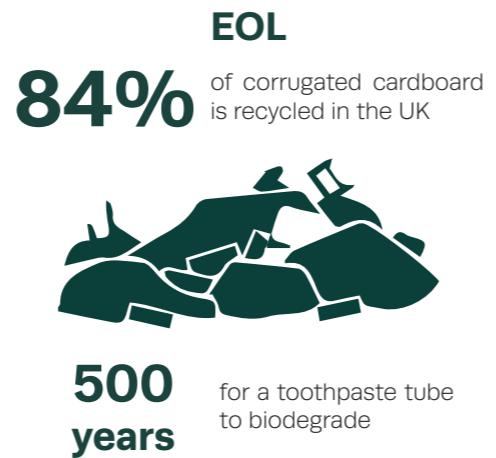
While the Eco Audit was carried out with transport assumed as from Cumbria to London, GSK transports to all over the UK as well as abroad, increasing its environmental impact



embodied energy



CO₂ footprint



The embodied energy and CO₂ footprint of each separate component of the toothpaste was assessed using the Eco Audit tool. The glue used is typically epoxy resin. The cardboard packaging is the most eco-friendly part of the product, while the tube itself has a detrimental effect.

Key Insights

- The bulk of the environmental impact caused by the travel toothpaste itself is by the material and the manufacturing processes that are used
- While several recycling schemes exist, they are not used well, meaning that the design of the dispenser needs to change so it can be recycled normally

Recycle @ Boots

Boots offers a product-oriented, revalorization disposal system through which users can recycle products which cannot be recycled through governmental recycling plans (e.g small toiletries etc.).



insights & specification

A number of **insights** have been collected through the research process, and they, combined with the **risks** and **opportunities** identified during the **system analysis** (flow mapper), will form the basis of the **specification points** in the design specification.

risks & opportunities

process	scope	why	relevant elements
 pick from shelves	the consumer picks up the toothpaste from the shelf in store	user will look for eco products – good opportunity for innovation	<ul style="list-style-type: none"> Sensodyne on shelf in store Consumer loyal to Sensodyne Consumer buys toothpaste
 choose material	raw materials chosen for manufacturing toothpaste tube	change materials to make eco tubes – good opportunity for innovation	<ul style="list-style-type: none"> use eco materials instead of plastic encourage circular economy GSK R&D and factories
 packaging	toothpaste tubes multi-packed for transport	reduce use of plastic for packaging – good opportunity for innovation	<ul style="list-style-type: none"> lorries/lorry drivers for transport regulations about stock transport/ working hours for drivers
 sort into bins	user unclear which bin to throw the tube	make whole tube recyclable and clarify that – good opportunity for innovation	<ul style="list-style-type: none"> hotel provides recycling bins parents not sure if tubes can be recycled government has recycling schemes
 disposal	elements have to be separated to be recycled properly	make elements easily separable to aid recycling – good opportunity for innovation	<ul style="list-style-type: none"> elements have to be shredded recycling facilities EC technology used to separate materials

■ infrastructure ■ actor ■ resources ■ principles

design specification

system challenges

Many areas do not have adequate recycling facilities/they are not well-known
Recycling facilities initialised by chain stores are not well-publicised
The current system is a linear economy – reusing/recycling most components is difficult

system specification

Products should be reusable so that they do not need to be recycled so often
Material circularity needs to be implemented to encourage reuse of materials instead of disposal

social challenges

Parents are unsure whether or not toothpaste tubes can be recycled
Recycling facilities initialised by chain stores are not well-utilised
Consumers do not wish to pay for more expensive, eco-friendly products

social specification

Information regarding recycling or reusing the product needs to be more clearly displayed
Eco-friendly products need to be as cheap/cheaper than existing, unsustainable products

market challenges

Ingredients in toothpaste is changing to keep up with market trends (e.g vegan etc.)
Children do not like to use simple toothpastes, they prefer the tubes to be interactive
Sensodyne is currently trailing behind leading toothpaste brands in terms of sustainability
Due to the small size of travel toiletries, they are having a disproportionately large, negative impact on the environment
Flight regulations on size and volume reduce the efficiency of travel toothpaste

market specification

A new toothpaste dispenser must not cause any reaction with the toothpaste inside
The new product must be interactive or otherwise enticing for children to use – to ensure that they switch away from the existing models
It must maximise the efficiency whilst minimising the negative environmental impact and stay in keeping with regulations

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9