



GROUPE SEB

A Circular Economy Business Model Case

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NOTE: This project deliverable has not yet been officially approved for release by the European Commission.



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Executive Summary

This report presents the case study of Group SEB's business model for the re-use of plastics for small household electrical goods. It was chosen due to the success the company has had in increasing the percentage of recycled content within certain product categories through "Circular Sourcing" and the overall ambition it has to increase the recycled content of its products.

Insights for business guidelines

This case study highlights the following key insights relevant to companies in similar industries or sharing a similar context:

- System-level collaboration (and, where required, co-investment) is essential to develop effective and at-scale infrastructure for end-of-life collection of products, and the creation of recycling value chains producing high-value material streams for re-use.
- Increasing recycled content for certain plastics such as Polypropylene requires a full and coordinated approach to product design, which can be complex and requires not only changes to internal processes but also close collaboration with suppliers. This is especially important at the initial stages until a breakthrough is achieved and new processes enter 'business as usual'. At the beginning, such initiatives need to be managed like a project and require dedicated attention and responsibility – for example a Project Lead that can work across functions and silos.
- The higher cost of virgin materials is often a key driver for efforts to substitute them with recycled materials. However, the risk of this price advantage being eroded due to price fluctuations and volatility means that the business case for doing so requires a long-term and holistic perspective. For example: creating brand value which can drive customer loyalty and indirect benefits through higher sales; and investing in the use of recycled material as a long-term hedge against rising virgin material prices. This is particularly important in cases where customers do not explicitly value or understand the use of recycled materials, or don't see this as a significant differentiator when making buying decisions.
- Transitioning Circular Sourcing from a 'breakthrough project' into 'business as usual' requires development of key resource and activities, as well as cultural and behavioural change. This includes design guides and decisions-support tools for product designers; integration into end-to-end product development processes; and embedding into procurement and sourcing processes and supplier relationship management.

Insights for policy recommendations

This case study demonstrates the success of a PRO-led (Producers Responsibility Organisation) system with the active participation and leadership of members. Having been initiated to comply with EU WEEE regulations, the system-level infrastructure and value chain put in place by the Eco-systèmes PRO in France was critical to the success of Groupe SEB's Circular Sourcing model.



Going forward, EU policy will need to examine and address the following areas:

- **Scaling across geographies.** The sourcing and processing of WEEE-based materials such as plastic into valuable commodities for re-use in high-end products requires scale and flexibility. For example, the ability to meet demand by manufacturers located in one geography with sources of WEEE from multiple geographies needs the ability for waste/materials management companies to collect and flexibly direct material streams. The geographical fragmentation of PRO schemes as well as compliance with waste regulations can be a barrier to this. EU policy could play a role in eliminating barriers and allowing companies and value chains to consolidate and operate seamlessly across geographies.
- **Addressing pricing risk.** The risk of recycled material prices losing their advantage in relation to virgin material prices can be a strong barrier to investment in the necessary R&D and infrastructure needed to scale up the development and use of recycled materials. Even when breakthroughs are achieved, there is a risk that manufacturers could 'flip back' to using the cheaper (virgin) option and suppliers may be left with stranded assets. There may be a potential role for EU policy to address this by creating an even playing field between recycled and virgin materials, and establishing appropriate incentives.



1 Introduction

1.1 Background and context

R2 π – Transition from Linear to Circular is a European Union Horizon 2020 project focused on enabling organisations and their value chains to transition towards a more viable, sustainable and competitive economic model in order to support the European Union’s strategy on sustainability and competitiveness.

R2 π examines the shift from the broad concept of a Circular Economy (CE) to one of Circular Economy Business Models (CEBM) by tackling market opportunities and failures (businesses, consumers) as well as policy opportunities and failures (assumptions, unintended consequences). Its innovation lies in having a strong business-model focus (including designing transition guidelines) as well as in the role of policy development (including designing policy packages).

The ultimate objective of the R2 π project is to accelerate widespread implementation of a circular economy based on successful business models and effective policies:

- to ensure sustained economic development,
- to minimize environmental impact and
- to maximize social welfare.

The mission of the project is therefore to identify and develop sustainable business models and guidelines that will facilitate the circular economy, and to propose policy packages that will support the implementation of these sustainable models.

A core part of this project is to work with organisations who are on the journey towards developing circular economy business models, as well as those who have the ambition to do so but haven’t yet begun. The project has conducted case studies of 18 selected organisations.

The 18 chosen cases covered all five priority areas highlighted in the EU Action Plan on the Circular Economy: plastics, food waste, biomass/bio-based, important raw materials, and construction & demolition. Additionally, the cases were selected to ensure learning in each of the seven business model patterns defined by the R2Pi project: re-make, re-condition, circular sourcing, co-product recovery, access, performance and resource recovery, and these will be discussed in more detail in this report. To gather wide-ranging lessons from differing company sizes and maturities, the following were selected: 7 large corporations, 8 small, medium enterprises, 1 public entity, 1 entire value chain with both public and private organisations and 1 ongoing social project.

This report presents the case study of Group SEB’s business model for the re-use of plastics for small household electrical goods. It was chosen due to the success the company has had in increasing the percentage of recycled content within certain product categories through “Circular Sourcing” and overall ambition to increase the recycled content of its products.

The next section provides a more detailed overview of the case organisation’s business.

1.2 Business overview

Groupe SEB is a leading global manufacturer of small domestic appliances headquartered in France. The company reported EUR 6.5 billion revenue in 2017, and has 33,600 employees across 150 countries. Western Europe is the most important geography in terms of sales (43%), followed by the China (20%), EMEA region, and the Americas.

The company has a large portfolio of brands including Tefal, Rowenta, Krups and Seb, as well as multiple local and regional brands (see Figure 1 below). These are focused on different categories of household domestic goods and electrical appliances covering: cooking; food preparation; linen care; and personal care.

FIGURE 1 GROUPE SEB BRANDS

Global brands



Regional brands



1.2.1 Sustainability and eco-design

Groupe SEB has a strong programme for sustainability within its products, organisation, and supply chain. This includes a number of ambitious environmental targets for 2020 covering three areas:

- **Eco-design:** Providing energy efficient products, use of recycled materials, high recyclability rates and 10 year reparability guarantee.
- **Eco-manufacturing:** Worldwide environmental management systems aiming to reduce waste and emissions
- **Eco-logistics:** Reduction of emissions related to transportation of products and raw materials.

With regards to eco-design commitments, Group SEB has taken three areas of action, described below.

Use of recycled plastics

The company has a commitment to increased recycled contents within its products by 20%, by 2020. Actions in this area have included developing strategic partnerships to source recycled plastic, and creating an internal closed loop for re-using materials wasted within its production process. An important and ongoing development is the integration and promotion of circular sourcing within

internal processes – including marketing, design, procurement and manufacturing. This aspect in particular is the focus of this case study.

Product performance

Group SEB has committed to a 20% reduction in energy consumption of its electrical products by 2050 (from a 2013 base). This has been supported by R&D commitments to stay ahead of EU legislation in this area.

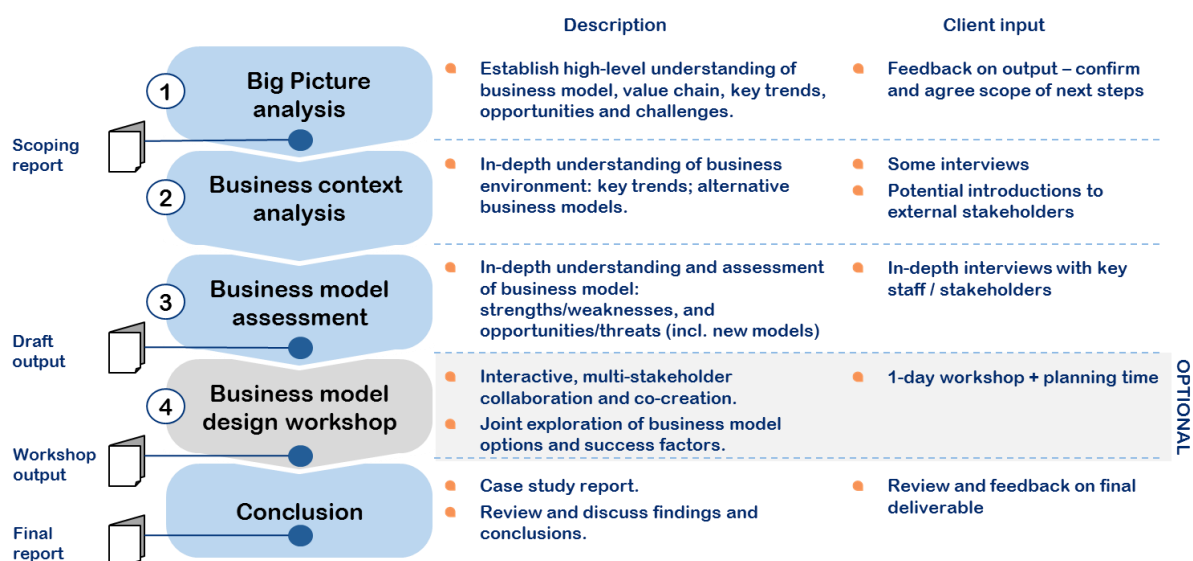
Product reparability

In 2015, Group SEB announced that all new product ranges would be sold with a 10-year 'reparability guarantee', demonstrating a proactive stance on the issue of product obsolescence. This commitment has been accompanied by investment in a global network of repair centres as well as supply of spare parts.



1.3 The case study analysis process

The case study process was structured in three main steps, plus an optional workshop, and concludes with this document as the final report (see diagram below).



1.4 Report outline

The first chapter introduction has provided a high level overview of the case and case study process. Chapter 2 presents the big picture surrounding the business, showing the context in which it operates and the key external factors. Chapter 3 is an analysis of the business at the building block level of the business model, including the circularity of the business, the financials and the strengths and weaknesses. Chapter 4 draws conclusions about the current state of the business and its future potential.

Glossary of terms

ABS	Acrylonitrile butadiene styrene, a thermoplastic polymer
EEE	Electrical and Electronic Equipment
EMEA	Europe, Middle East and Africa region
PP	Polypropylene, a thermoplastic polymer
PRO	Producers Responsibility Organisation (PRO)
WEEE	Waste Electrical and Electronic Equipment



2 Group SEB's business context analysis

2.1 Scope of the business context analysis

The objective of the context analysis is to identify the main external factors that are to be considered in order to explain the success (or failure) of Circular Economy Business Models (CEBM), as well as their potential role in accelerating the transition towards a Circular Economy.

The business context research included a combination of interviews with relevant key stakeholders of the case organisation as well as complementary desk research where required. The objective was to identify relevant factors (geographic or sector-specific) within which the business model operates today, as well as key trends that may influence how it evolves in the future.

2.2 Contextual factor analysis

2.2.1 Demographic trends

Globally, changes in consumer lifestyle, increasing urbanisation and disposable incomes have led to a rise in domestic appliance purchases. This is particularly the case in the emerging economies of Asia, as well as in EMEA and South America. In these regions, a large proportion of household appliances are often a first-time purchase by consumers who previously didn't own a particular type of product. In contrast, appliance sales in mature European and US markets are typically a replacement sale.

2.2.2 Rules and regulations

The small domestic appliance market is subject to a number of rules and regulation. Groupe SEB in particular adheres to both EU and French legislation. On the EU level this includes the **WEEE directive 2002/96/CE**. In effect since February 2003, the European legislation prescribes the installation of collection points for consumer electric and electronic product disposal free of charge. The aim of the directive is to increase recycling initiatives, reduce waste destined for landfill and reduce illegally exported waste to countries outside the EU.

There are also a number of relevant French regulations, including the following:

- **Article R543-172-2:** from 2016, national minimum collection rates of WEEE products should reach 45% of total weight and increase to a minimum of 65% from 2019.
- **Article R543-176:** All equipment encompassed in the above article must be designed and produced with the end-of-life in mind (re-use, re-make, repair, and recycle).
- **Hamon Law:** From 2016, all producers must facilitate the reparability of products, from February 2018 product warranties increase to a minimum of 2 years.

Currently there is no regulation enforcing the use of recycled plastics in products of any category.

France has also put in place a producer responsibility scheme. This initiative requires all manufacturers to finance the collection, management and processing of their products at the end-of-life through an "eco-participation". This is a financial contribution related to the number of products put out on the market.

In general terms, there is a tightening of legislation around all food related products, increasing the challenge of including recycled plastics in products that are in direct contact with food.

Electric and electronic equipment are the fastest growing waste source in the European Union (3-5% per year). These contain dangerous substances and can have significant environmental impacts if not handled and disposed of correctly. Hence, it is likely that further regulatory action will be taken to both reduce waste and improve product management at end-of-life.

2.2.3 Economy and environment

Market demand for domestic appliances

There continues to be growing demand for small domestic appliances globally. Between January and June 2017, the global market demand (excluding North-America) increased by 8.4% representing €21.5 billion. Europe continues to be the largest market for small domestic appliances and saw record sales worth €9.5 billion in 2017. Within the European market, consumption is highest in Switzerland followed closely by Sweden, Germany and the UK. Most consumption in Europe is driven by the replacement of old devices.

Market dynamics of recycled plastic

Production of recycled plastic materials is growing and there is an increasing number of players entering the market. Many waste management/treatment companies are now integrating recycled material creation and supply within their core products and services. The quality of recycled plastic materials for use by manufacturers is also reported to be improving.

2.2.4 Competition

Groupe SEB operates in a highly competitive market for domestic goods and electrical appliances, competing with major brands such as Philips. Many of Groupe SEB's principle competitors have a strong positioning in terms of environmental protection and carbon footprint management.

2.2.5 Technology trends

Traditionally, new technological developments in small domestic electrical appliances tend to be relatively incremental, focusing on functionality, performance, ease of use, and product design (look and feel).

A strong emerging trend is that of 'internet of things' (IoT) and 'smart homes' where appliances and home environments are connected online. Also, integration of appliances with software applications on electronic devices is opening up new possibilities for consumer control of appliance functionality, remote monitoring and activation, etc. This will potentially influence the mix of materials found in WEEE from domestic appliances over time (e.g. a greater presence of ICT-related components).

2.2.6 Customer needs

Customer needs regarding household appliances are mainly driven by factors such as: convenience; health; functionality; price and energy efficiency.

Other than energy efficiency, the average consumer remains relatively uneducated with regards to eco-efficiency and eco-design of domestic appliances. A study done by Groupe SEB showed that differences in recycled content were not understood, nor did it make a difference to consumers during the purchasing phase, making this an optional offering rather than a customer requirement. The use of recycled materials is perceived as a minor benefit and does not tip the scale in a purchasing decision. Product differentiation is not felt unless recycled materials are combined with other eco-friendly product features. Additionally, some customers are not willing to pay more for products that contain recycled materials due to misconceptions around these being of lower quality or performance.

Willingness to engage with green messaging and to buy greener products differs from country to country. Some markets are very receptive, for example where energy prices are high and products with eco-efficiency claims are seen to provide value. This however mainly focuses on the energy consumption of products rather than their material content, which as described above is still considered secondary.



3 Business model assessment

The business model assessment has been conducted through a combination of publicly available information, interviews with employees and stakeholders of the case organisation and internal documents provided by the organisation.

The objectives were to gain a deeper understanding of the circular business model and to map out the value chain and interactions in more detail in order to enable an analysis of the strengths and weaknesses as well as to consider the replicability and transferability of such a model to other entities and sectors.

3.1 Business model overview

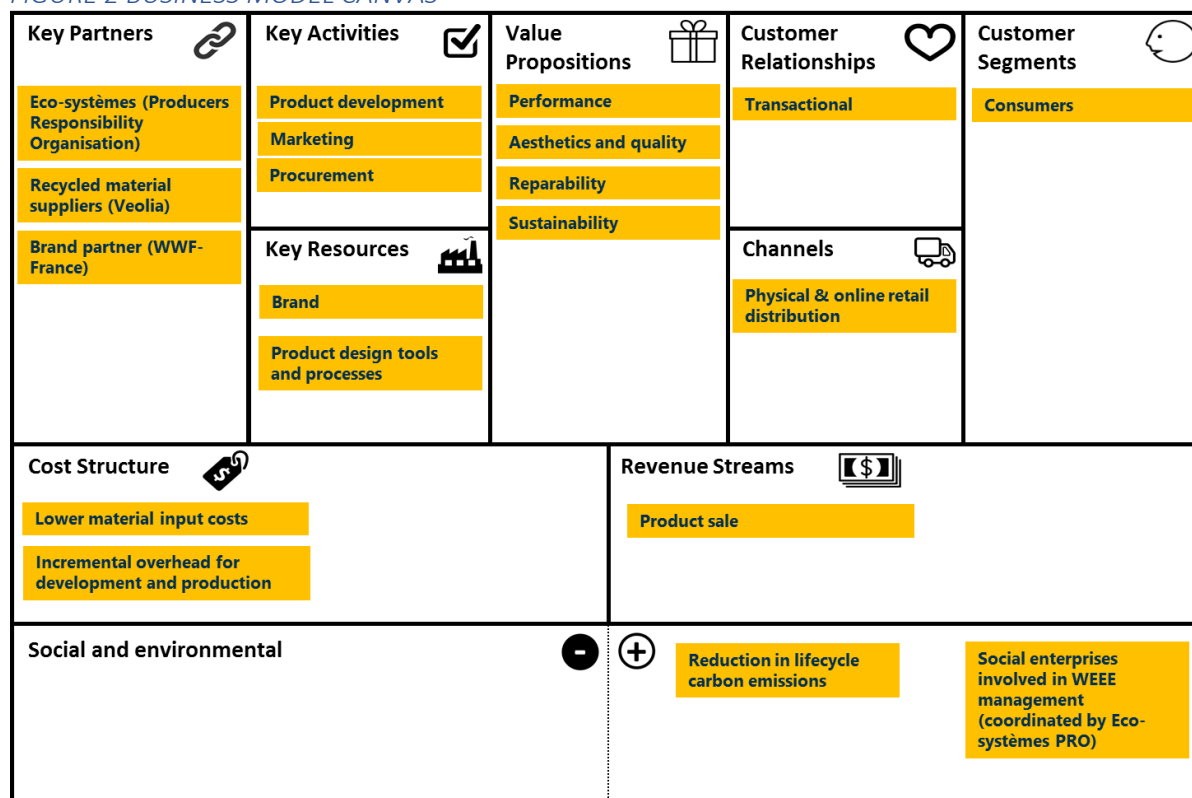
In order to understand the mechanics, barriers and enablers of Circular Sourcing, the case study focused mainly on the breakthrough achieved by Groupe SEB, working with key partners, to incorporate recycled polypropylene (PP) plastics from WEEE sources into a new product: a steam generator for linen care sold by the Rowenta brand. Groupe SEB has since invested significant effort in expanding the Circular Sourcing model across other product ranges.

This business model overview and case study therefore focuses on the Circular Sourcing business model pattern for Groupe SEB, illustrated through the example of the Rowenta steam generator.

This section describes the building blocks of Groupe SEB's Circular Sourcing business model. These are summarised using the Business Model Canvas framework (Figure 2 below). Each building block of the canvas for Groupe SEB's model is explained in the sections below, including the key elements therein.

It should be noted that the traditional nine-block canvas for circular business models has been adapted to include an additional building block – Social and Environmental. This is designed to capture key social or environmental benefits or costs which arise from the application of the circular business model. Discussion of non-financial outcomes is covered in Section 3.14.

FIGURE 2 BUSINESS MODEL CANVAS


 Strategyzer.com

Adapted by R2Pi

Source: R2Pi Project analysis

3.2 Customer segments

Groupe SEB operates in the Small Household Appliances market which includes small domestic appliances and cookware (these account for 70% and 30% of the company's revenue respectively).

The Small Household Equipment market covers a very broad range of products, from basic utility items high-end and specialised equipment:

- *Basic household products.* These products are generally low-cost/low price items (manufactured in countries with low production costs), and undergo regular range renewal.
- *Mid-range products.* These apply innovation to create market differentiation and momentum – for example by providing new functions, new consumer benefits, advanced technical performance etc. Groupe SEB views this as representing the largest part by value of its market.
- *High-end products.* Products for high-end segments are positioned according to the key criteria of quality, performance and aesthetics. According to the company, they are “aimed at demanding and/or expert consumers who are looking for both status and performance”.

Geographically, the global market of Small Domestic Equipment is relatively fragmented into numerous national/regional markets.

The Rowenta brand, for which the Circular Sourcing model was initially applied, is a core brand targeting consumer segments who value product performance, good design, and user-friendliness. Rowenta's product in question – the ‘Steam Station’ for linen care – is designed to enable users to iron clothes more effectively and quickly at home, compared with using a traditional iron.

3.3 Value proposition

The initial product for which Groupe SEB applied a Circular Sourcing model was the Rowenta 'Silence Steam' high-pressure steam generator for linen care. Rowenta developed a specific product line incorporating recycled propylene (PP) plastic derived from recycled WEEE sources. The product in question is shown in Figure 3 below.

FIGURE 3 ROWENTA 'SILENCE STEAM' HIGH-PRESSURE STEAM GENERATOR FOR LINEN CARE, MODEL NO. DG8985F0



Source: Rowenta

The core value proposition of the Silence Steam product is performance, usability, and quality. Product reparability is also an important part of the value proposition given that it is a relatively expensive product (sold at a retail price of over EUR 350). As discussed in the introduction, Groupe SEB launched a commitment to reparability beyond product warranty for 10 years across its brands and product ranges. This is prominently messaged and displayed on product packaging and online with a special logo (see Figure 4).

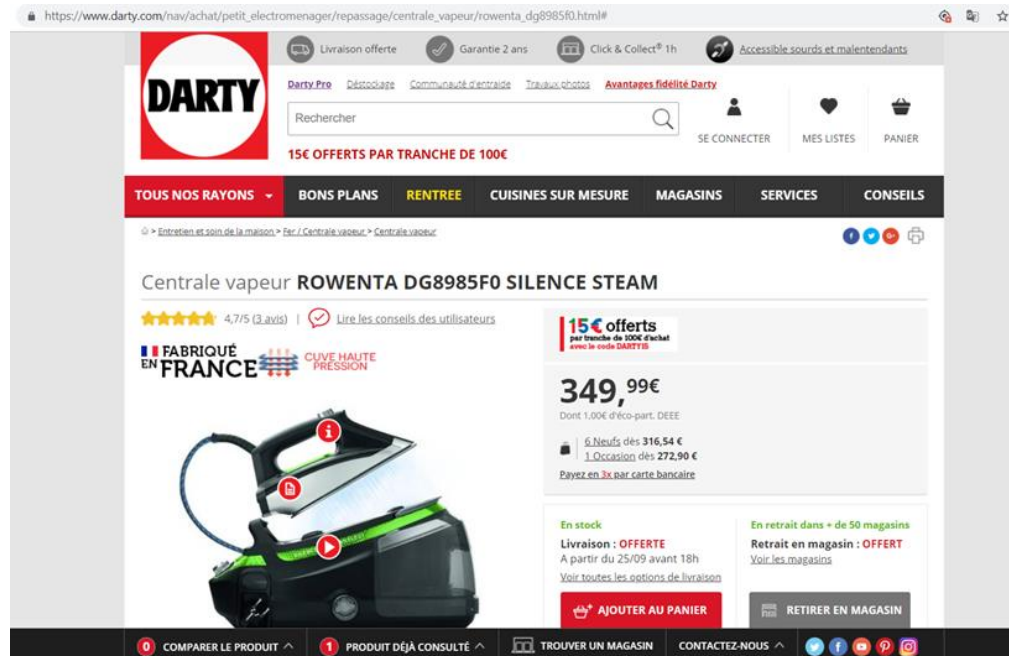
FIGURE 4 GROUPE SEB PRODUCT REPARABILITY LOGO



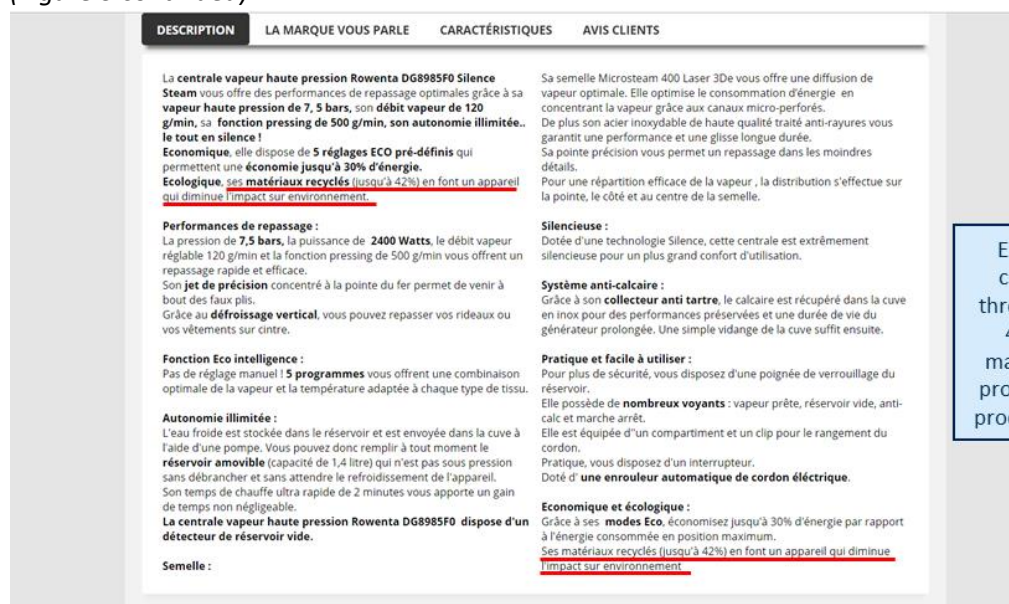
The recycled material content of the steam station (42% in this case) is prominently mentioned in product descriptions, as illustrated in the online product site of French retailer Darty (see Figure 5) as well as highlighted with an 'Eco Intelligence' logo (Figure 6). Recycled content is combined with energy efficiency, providing an overall indication of sustainability credentials. As such, this indicates that, for this product, Groupe SEB sees sustainability as an aspect of the value proposition for target consumers.

The company acknowledges that consumers will mainly focus on product performance and quality, however sustainability credentials are seen as a 'plus' and can differentiate the product – they are also consisted with the brand's image of innovation and "respect".

FIGURE 5 RETAILER (DARTY) ONLINE PRODUCT DESCRIPTION OF ROWENTA 'SILENCE STEAM' MODEL NO. DG8985F0



(Figure 5 continued)



Source: Darty.com

FIGURE 6 ECO INTELLIGENCE LABEL



Source: Darty.com

As shown in Figure 7 below, the Rowenta steam station model incorporating recycled material has the highest price point of the product category. Eco-credentials, including explicitly showing high use of recycled content, are therefore not considered to take away from a product's brand positioning. This is an important indication of changing consumer views (and manufacturers' perceptions of consumer attitudes), as discussed below.

FIGURE 7 ROWENTA PRODUCT LINE-UP FOR LINEN CARE STEAM GENERATORS

 The image shows a screenshot of the Rowenta website's product line-up for linen care steam generators. The header includes the Rowenta logo and navigation icons. Below the header, there are three columns of products. The first column is labeled 'Fers vapeur', the second 'Fer de voyage', and the third 'Défroisseurs vapeur'. The products are listed in a grid. The first row shows 'COMPACT STEAM', 'SILENCE STEAM', and 'PERFECT STEAM CONTROL'. The second row shows 'SILENCE STEAM', 'SILENCE STEAM', and 'PERFECT STEAM'. The third row shows 'SILENCE STEAM', 'SILENCE STEAM', and 'PERFECT STEAM'. The prices are listed below each product. The 'SILENCE STEAM' product in the second row is highlighted with a red border.

Fers vapeur	Fer de voyage	Défroisseurs vapeur	TOUS LES PRODUITS
<p>COMPACT STEAM</p> <p>Un concentré de performance et de précision</p> <p>220,99 €¹</p> <p><input type="checkbox"/> Comparer</p>	<p>SILENCE STEAM</p> <p>Extrêmement silencieuse, extrêmement puissante</p> <p>280,99 €¹</p> <p><input type="checkbox"/> Comparer</p>	<p>PERFECT STEAM CONTROL</p> <p>Un contrôle parfait pour de parfaits résultats</p> <p>250,99 €¹</p> <p><input type="checkbox"/> Comparer</p>	
	<p>SILENCE STEAM</p> <p>Extrêmement silencieuse, extrêmement puissante</p> <p>350,99 €¹</p> <p><input type="checkbox"/> Comparer</p>	<p>SILENCE STEAM</p> <p>Extrêmement silencieuse, extrêmement puissante</p> <p>280,99 €¹</p> <p><input type="checkbox"/> Comparer</p>	<p>PERFECT STEAM</p> <p>100 % performante, 100 % pratique</p> <p>264,99 €¹</p> <p><input type="checkbox"/> Comparer</p>

Source: www.rowenta.fr (23 September 2018)

3.4 Channels

Groupe SEB's products are sold globally in supermarkets and department stores as well as specialist stores and via brand websites.

The market for small household appliances is geographically fragmented, with complex and multi-faceted retail distribution networks that vary depending on regional consumer buying habits, the maturity of markets, product ranges and the development of local distribution systems.

Brands such as Rowenta often sell through selective physical distribution networks, with online retail channels providing a broad reach to consumers.

3.5 Customer relationships

The relationship between Groupe SEB and end-consumers is mainly transactional. However the company and its brands are looking to extend customer touch points over product lifetimes through the 10-year product reparability guarantee.

3.6 Revenue streams

Revenues for domestic appliances such as the Rowenta Silence Steam are based on transactional product sales. The 10-year reparability guarantee opens the possibility of further revenues during the product lifetime, although Groupe SEB indicates it aims to sell parts at cost. Such revenues would of course be unpredictable.

3.7 Key resources

3.7.1 Brand

One of Groupe SEB's key resources is the company's brands. There is an important emphasis on branding and brand identity in decisions to incorporate recycled plastics into a product line, especially if these are to be communicated externally.

Each of Groupe SEB's brands has a set of values or image that defines and guides the development of new product offerings and features. Some brands have an image that is already clearly oriented towards being greener and having an ecological standing. For example, the Rowenta brand is considered to have a value – "Respect" – that is aligned to environmental messaging. In Groupe SEB's other brands, Tefal also has a positioning relating to health and environment.

The Circular Sourcing model was initially implemented and taken up by Marketing with Rowenta products as this was seen to support the brand positioning. The recycled material content of products has been communicated explicitly for Rowenta products in question, both online and on packaging (as discussed above).

3.7.2 Product design tool and processes

Groupe SEB have developed a tool and process guidance enabling product designers to assess a product's recyclability as well as ability to utilise recycled materials that have been internally approved. This is still a relatively basic tool, however it has enabled designers to more thoroughly consider the use of recycled plastics as part of the product development process.

Furthermore, Groupe SEB has been developing a database of pre-approved materials including recycled plastics for use in products. This is incorporated into the product design tool allowing product designers to make decisions on material types to be used. The number of reference materials for recycled plastic within the database is still relatively small, but this is considered a key resource enabling the ongoing development of products with recycled plastic content, and the company intends to extend it further.

In order to support designing recycled materials (especially plastic) within products, Groupe SEB has developed a 'Decision Tree' tool, as well as a broader eco-design guide encompassing multiple aspects of sustainable product design (including recycled content).

FIGURE 8 ECO-DESIGN GUIDE FOR PRODUCT DESIGNERS



Source: Groupe SEB

3.8 Key activities

At a systems level, Groupe SEB has worked with key partners including Eco-systèmes and Veolia to develop a national scheme for enabling the collection and management of WEEE materials in order to provide the volume and quality of recycled polypropylene and other plastic feedstock necessary for re-incorporating into new products. This is described further within the Key Partners section.

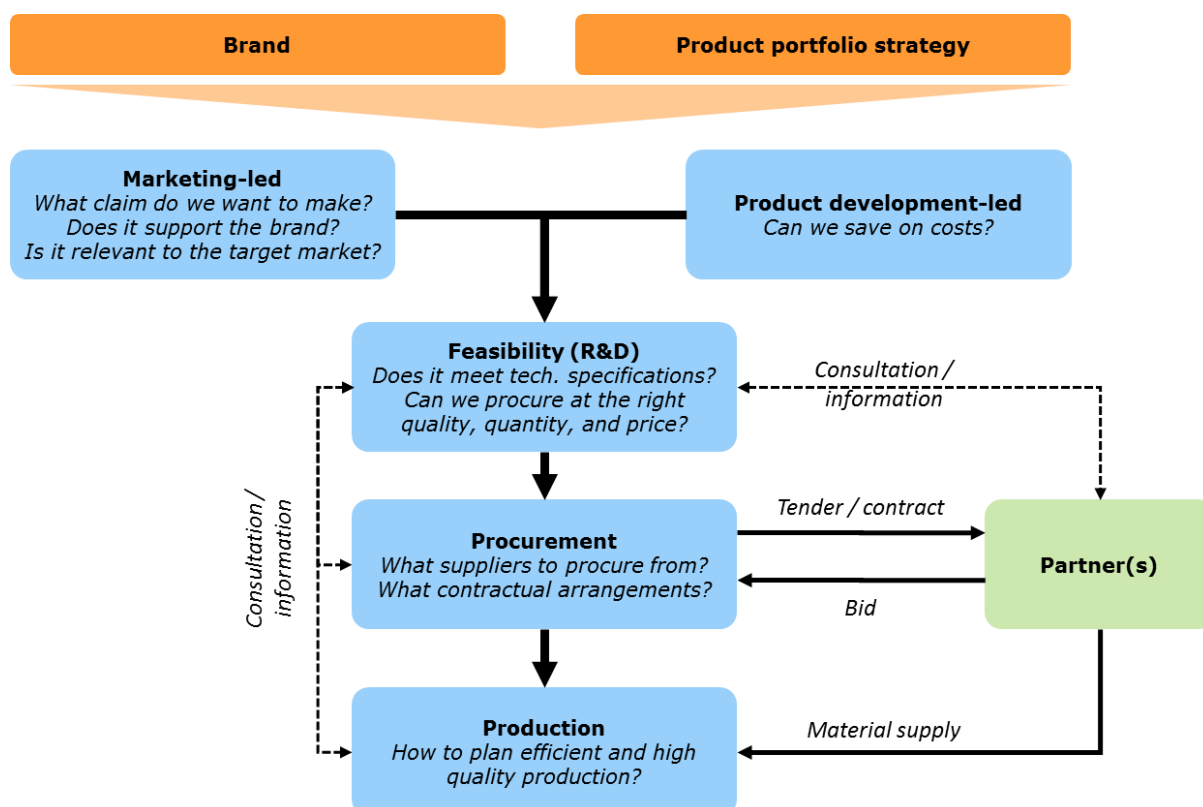
Within Groupe SEB itself, a number of functions have to work with each other to implement the circular sourcing model of recycled plastics, so that the feedstock made available at the system level can effectively be used. These key functions are: Product Development, Marketing, Procurement, and Production. The nature of interactions between these functions changes over the course of developing a product with recycled plastic content, but broadly follows this pattern:

- **Design Phase:** The initial idea for incorporating recycled plastic into a product may come from:
 - *Product Development*, if there is a cost advantage to be explored; or
 - *Marketing*, if there is a desire to make a claim that reinforces product positioning and branding.
- **Feasibility Phase:** When a new initiative is undertaken to explore using recycled plastics for a new product or product components, and when this has not been done before and no pre-approved recycled material is available – key functions need to work closely together (as well as with supply chain partners) to ensure feasibility across multiple dimensions:
 - *Product Development*, assessing technical feasibility.
 - *Marketing*, ensuring the recycled plastic components meet quality and aesthetic requirements.
 - *Procurement*, assessing the practicalities and feasibility of sourcing materials at the required volume, timeframe, cost and quality needed.
 - *Production*, together with Quality Control conducts prototype and trial production runs to ensure the product meets quality specifications and production feasibility.
- **Scaling up and mainstreaming Phase:** Once the recycled plastic content has been approved:
 - *Procurement* takes the lead in ongoing sourcing decisions for the recycled material. Once the material and supplier(s) have passed approval, Procurement can theoretically make opportunistic cost-based decision to source and use recycled plastics for production (although this requires coordination with Production sites as it can require changes to manufacturing set-up).
 - *Production* implements manufacturing plans for the given product that uses recycled plastic content.

This dynamic between functions within Groupe SEB is illustrated in Figure 9 below.

It is important to note that, in the context of the initial Rowenta project, the development of a Circular Sourcing model required the creation of a Project Lead with a strong mandate and responsibilities to work across functions and silos. The initiative had to effectively be run as a project with dedicated budget and resources until breakthroughs were achieved. Following this, the key activities, key resources, and broader model could then transition into ‘steady state’ business-as-usual.

FIGURE 9 DECISION PROCESS FOR USE OF RECYCLED PLASTIC IN NEW PRODUCT DEVELOPMENT



Source: R2Pi analysis, company interviews

From a historical perspective, in the case of Groupe SEB's first product to incorporate recycled plastic materials – the Rowenta Silent Steam generator for linen care – the initiative originated with the Product Development (PD) team. The main impetus for the PD team to look at recycled plastics came from a desire to cut costs. Utilising the cost advantage of recycled products (where it exists) will continue to be a factor that these teams assess in future product design and development.

With respect to the Rowenta product, the Marketing team supported and built on the Product Development team's work as they identified an opportunity to establish a marketing claim that would reinforce the product and brand positioning. Importantly, once a marketing claim is made for a given product model, this must continue to use the specified level of recycled material (over 40% recycled material, in the case of the Rowenta steam generator).

Therefore, while the use of recycled materials may be looked at opportunistically from a cost-saving perspective by Product Development (during new product design) or Procurement (once the recycled material and suppliers have been pre-approved); backing by Marketing and establishing a claim means that the defined level of recycled materials must continue to be used for the given product model.

The sections below describe the key activities of functions involved in Group SEB's Circular Sourcing model for recycled plastics.

As illustrated in Box 1, R&D and product development cycles can be relatively long. It is therefore important that design decisions enabling circular sourcing be taken in a timely manner, otherwise these will not be incorporated into the product design specifications.

BOX 1 CHARACTERISTICS OF R&D AND NEW PRODUCT DEVELOPMENT

- R&D cycles (e.g. for new product categories) range from 3-5 years.
- New product development cycles range from 12-24 months in duration.
- Approximately three new products are developed per year.
- R&D is focused on new Product Development. Incremental improvements to existing products is conducted by product development teams.

Source: Company interviews

3.8.1 Product development

Product Development teams can initiate consideration of recycled plastic use if this provides cost or other benefits. Feasibility assessment will be required, as described above, during which Marketing teams will need to agree to the use of recycled plastic (e.g. ensuring that it meets aesthetic and other quality criteria). If using recycled plastics has clear cost advantages and improves product margins, this will support gaining Marketing approval.

Product development teams hold a key lever to promoting the use of recycled plastics within products. They can design products in ways that increases the possibility for recycled plastics to be used, such as:

- Product colour of external parts: Darker colours lend themselves to more easily use recycled plastic as this can be sourced from a broader spectrum of mixed colour plastic sources (however this requires collaboration with Marketing).
- Design of internal parts and technical design to facilitate the use of recycled plastics – e.g. adjusting mechanical or thermal parameters as well as product design to enable recycled plastics with different properties to be used.
- Designing products with circularity in mind, such as disassembly and material recovery, in order to facilitate closing the loop. This aspect already fits well with Groupe SEB's commitment to provide 10 year reparability guarantees on its products (ensuring products are designed to be disassembled and repaired), as well as internal eco-design targets for designing for recyclability.

In the event that Marketing initiates the decision to consider recycled plastic use for a new product, Product Design will play a key role in assessing the feasibility of doing so, working in tandem with other teams as described above.

3.8.2 Marketing

The Marketing department sets out all requirements for new products including their specifications, performance requirements, and any external claims the brand wishes to make enabling the product to differentiate itself from those of competitors.

Brand positioning is an important background factor which can encourage marketing teams to consider making a claim on recycled plastic content for a new product. As described in Section 3.7.1 above, when brand positioning and values align with environmental considerations, this can be an important enabler. Brand positioning and values will have previously been established through

customer insights revealing what consumers care about with respect to a given brand and product category.

It is at the stage of product specifications development by the Marketing team that using recycled plastics may be first considered. *If this isn't factored into decision making at this stage, it is unlikely to be taken up later in the process unless clear cost saving benefits are identified.*

Marketing is involved at the feasibility stage of considering the use of recycled plastics, assessing product prototypes and material samples for properties such as aesthetics, texture, colour etc. If approved, full prototypes are made and compared with prototypes made with virgin materials. If the prototype passes final approval by Marketing, the product can then be produced.

Marketing therefore is both a potential initiator as well as being a key decision-maker when considering the use of recycled plastics within products. Furthermore, Marketing holds a key influencing role within the organisation. A Product Committee (composed of an Innovation Director, Marketing Director and R&D Director) is responsible for making brand-level commitments. If this commitment includes using a certain percentage of recycled plastic within branded products, it will become a core objective across all product development activities across the brand.

3.8.3 Procurement

The procurement function at Groupe SEB plays an important role in new product development and the adoption of recycled plastics. When a decision has been made to consider the use of recycled plastics within a product, procurement teams are tasked with finding the materials that meet required specifications. Once a recycled material is identified, procurement will then search for suppliers.

The procurement team assesses market trends, availability, pricing and suppliers of materials on an ongoing basis, as well as keeping abreast of innovations. Product development teams will therefore consult procurement colleagues when assessing the feasibility of using a recycled material.

Furthermore, if procurement becomes aware of recycled materials that meet the required product specifications, these teams have the technical and market knowledge to recommend adoption without necessarily going through the same approval process indicated above. Procurement can therefore act as a further driver of recycled plastics adoption within products (in addition to Marketing and Product development, discussed above). Key procurement responsibilities with respect to new product development – from design to production – are summarised in Box 2 below.

Once a particular specification of recycled materials has been approved, these are added to a database that can be referred to by Groupe SEB in the future. Using pre-approved materials reduces the process time required to incorporate these into future products, making this comparable to pre-approved virgin materials. In all cases, Procurement will need to assess market prices and availability before making new orders of materials.

BOX 2 KEY PROCUREMENT RESPONSIBILITIES RELATING NEW PRODUCT DEVELOPMENT AND USE OF RECYCLED PLASTICS

Design Phase

- Working closely with internal technical teams to test materials and ensure their suitability for use in specific products.

Feasibility Phase

- Identifying and assessing new materials (both recycled and virgin).
- Searching for and identifying suppliers of recycled materials.
- Working with suppliers to assess ability to provide recycled plastics at the required quality, consistency, and volume.

Scaling up and mainstreaming Phase

- Tendering out contracts of material supply, and contract management.
- Deciding on whether parts can be manufactured in-house or need to be sub-contracted, and coordinating the tooling and moulding equipment used by sub-contractors for manufacturing of parts for Groupe SEB products.

Source: Company interviews

3.9 Key Partners

Partnerships have been essential in enabling Groupe SEB to implement a Circular Sourcing model. Two key partnerships are discussed below:

- **Eco-systèmes:** This is the national producers responsibility organisation (PRO) in France which Groupe SEB played an import role in establishing (together with other companies). This organisation governs and manages the WEEE collection and processing system nationally.
- **Veolia:** A major France-based international company providing waste management services, Veolia has become a key supplier of Group SEB for high-quality recycled polypropylene plastic. Veolia closely collaborated with Groupe SEB in developing the right commodity material for the Rowenta Silence Steam product, and has also subsequently worked with the company on recycled plastic for other product lines.

Furthermore, Groupe SEB's Rowenta brand has partnered with WWF-France to provide enhanced branding and communication to consumers with respect to recycled plastic content and the importance of sustainability in buying decisions, as well as product use and disposal.

3.9.1 Eco-systèmes

The 2003 European WEEE Directive introduced the concept of Extended Producer Responsibility (EPR) whereby electrical and electronic equipment (EEE) manufacturers – including makers of household appliances such as Groupe SEB – are accountable for end-of-life management of these appliances sold on the market. The regulation also sets targets for the collection of used equipment as well as recycling and recovery.

In order to comply with this regulation, Groupe SEB played an important role in establishing Eco-systèmes as the first Producers Responsibility Organisation (PRO) in France managing household WEEE. This was part of an industry-wide coordinated effort with other brands and retailers such as Whirlpool, FNAC, etc. Groupe SEB continues to play an integral leadership role within Eco-systèmes as part of the organisation's Administrative Council and takes part in key decision-making processes.

Eco-systèmes itself is now part of a larger group, called ESR, established in January 2018 through the merger with Récyllum, an organisation which similarly handles business and industrial WEEE. The ESR group (including Eco-systèmes) is a not-for-profit 'eco-organisation' ("Eco-organisme").

Through its parent organisation ESR, Eco-systèmes is accredited by the French authorities to establish and manage across France a system for WEEE collection, decontamination and recycling. It does so in conjunction with key players in the WEEE value chain including manufacturers, retailers, waste collectors, and waste management and recycling companies such as Veolia. Eco-systèmes also plays a broader advisory and social role (illustrated in Figure 10 below). Further details of this system and its funding are provided in Section 3.11 (Value Network).

Eco-systèmes is therefore a key partner of Groupe SEB at the systems-level. It also played an important role in introducing Groupe SEB to recycled material suppliers when the company initiated projects to source recycled plastic for its products, such as the Rowenta steam generator.

FIGURE 10 ECO-SYSTÈMES ACTIVITIES IN MANAGING WEEE



Source: Eco-systèmes

BOX 3 ROLE OF ESR/ECO-SYSTÈMES

Being a member of a PRO such as ESR/Eco-systèmes allows producers to transfer their WEEE responsibilities under the European WEEE directive to this organisation.

FIGURE 11 RESPONSIBILITIES OF EEE MANUFACTURERS AND ESR/ECO-SYSTÈMES



Source: Eco-systèmes

ESR/Eco-systèmes assists its members in eco-design, providing tools and services for better measuring the environmental impact of the end-of-life of appliances, evaluating and improving equipment recyclability, as well as integrating recycled materials in new products.

ESR also sets and manages the eco-contribution payments that fund the overall system. This includes a method of modulating these payments through 'malus' penalties and 'bonus' deductions based on whether manufacturers meet certain recycling criteria, as a way of incentivising good practice.

3.9.2 Material recycling and compounding partners

When Groupe SEB initiated using recycled plastic for its Rowenta steam generator, it looked to partner with a 'compounder' – a company specialised in manufacturing recycled plastic compounds – and the company Veolia in order develop and source the required materials.

Because this was the first major undertaking of this kind, the process required significant amounts of collaboration, problem-solving, and iteration. Box 4 below summarises the high-level process that took place, from initial specification to final procurement.

Following the initial phases of collaboration between Veolia and Groupe SEB, Veolia acquired the compounder company and integrated it within its business. Veolia has also significantly grown its capabilities in sourcing and processing plastics to generate recycled plastic materials with different properties. This is an area of strong interest for the company, who sees a substantial market opportunity for supplying recycled plastics to Groupe SEB and other EEE manufacturers. Veolia has reported that it is seeing year-on-year growth in sales of recycled plastic materials, and is continually improving quality.

Groupe SEB has also expanded collaboration with other suppliers of recycled plastic, and is continually developing its supply chain in this area.

BOX 4 SUMMARY OF PROCESS FOR SOURCING NEW RECYCLED PLASTIC MATERIAL

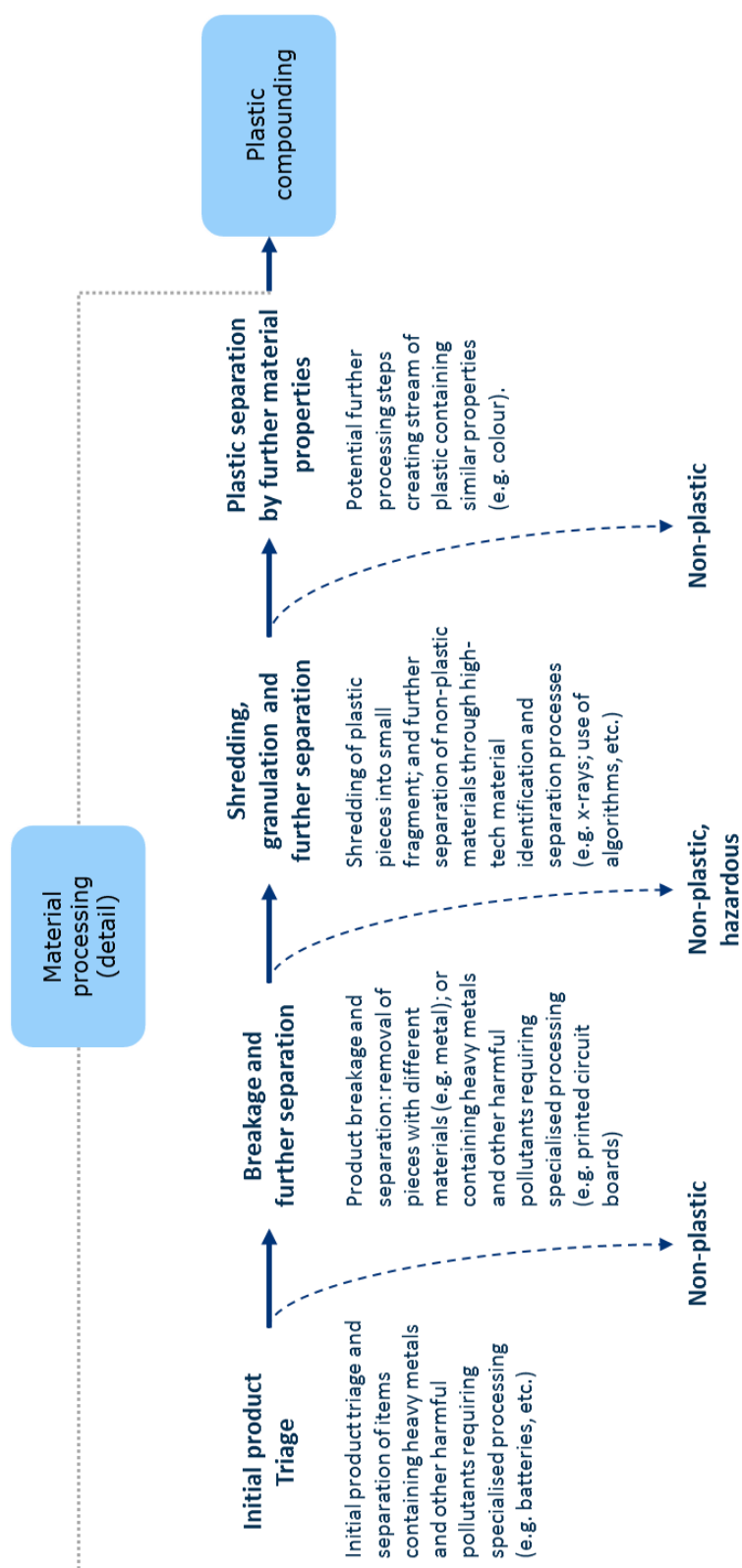
The steps below summarise the process which Groupe SEB and its material supplier go through in assessing new sources of recycled plastic for a product, for example with the Rowenta Silence Steam generator. As described below, this process can take significant time and iteration given the importance of ensuring quality of the final product. The process becomes more efficient once the material has been fully defined, tested, and approved for further use in products, at which point it enters mainstream procurement processes.

1. Group SEB submits specifications to the supplier regarding material properties and quality. When recycled sources of plastic have not yet been defined, the starting point for these specifications is typically based on the known properties and characteristics of virgin materials.
2. Technical teams from Groupe SEB and the supplier have in-depth exchanges regarding material properties and quality. This can include reviewing and potentially revising specifications and tolerances (e.g. tensile strength, flexibility, resistance and tolerance to heat, colour, etc.). During this process, the teams may jointly identify areas of ‘over-specification’ or where design constraints can be relaxed without impacting quality and consumer experience. This step will also include development of product samples using the trial material.
3. If the new material meets required criteria, an initial industrial-scale test is undertaken, using between 500 kilograms to 1 tonne of material.
4. If the industrial testing is successful, Groupe SEB will start full commercial production and procure the recycled plastic material from suppliers in batches (these will come in the specified colour and have certificates of quality).

Source: Company interviews

Figure 12 below is a high-level illustration of the key material processing steps provided by Veolia (and similar WEEE materials management companies), resulting in a stream of recovered plastic which is suitable for compounding into recycled plastic pellets to be used by manufacturers.

FIGURE 12 OVERVIEW OF MATERIAL PROCESSING STEPS



Source: R2Pi Analysis, company interviews

3.9.3 WWF-France brand partnership

In addition to collaboration with value chain partners, Groupe SEB's Rowenta brand has partnered with WWF-France as part of its commitment to increase the use of recycled content within its products. Rowenta's ambition is to achieve a rate of at least 20% recycled material use by 2020 across new products, accessories, and packaging under the brand.

The purpose of the partnership is to raise awareness of the importance of sustainable consumption and the benefits of the eco-design approach taken by Rowenta brand. By doing so, the aim is to increase consumer interest and willingness to buy products that incorporate recycled content, and also to mobilise action for disposing WEEE in a way that contributes to greater rates of collection and recycling. This not only benefits Groupe SEB and its brands, but also the industry as a whole.

FIGURE 13 GROUPE SEB'S ROWENTA BRAND COLLABORATION WITH WWF-FRANCE



3.10 Cost structure

In addition to the overheads of key activities discussed above, the main cost of circular sourcing with regards to recycled plastics relates to the materials purchased.

At time of research, recycled materials were approximately 15%-30% cheaper to purchase than virgin materials. However the dynamic between the two is variable as prices of recycled plastics can fluctuate depending on supply, and virgin materials prices are linked to fluctuations in the price of oil.

Production processes using recycled plastic pellets can be marginally more expensive due to some inefficiency in operational when plants have to switch from using virgin material to recycled material. This is because manufacturing plants are currently set up for using virgin plastic pellets and some change-over time is needed when recycled plastic pellets are inserted into the production flow.

3.11 The Value Network

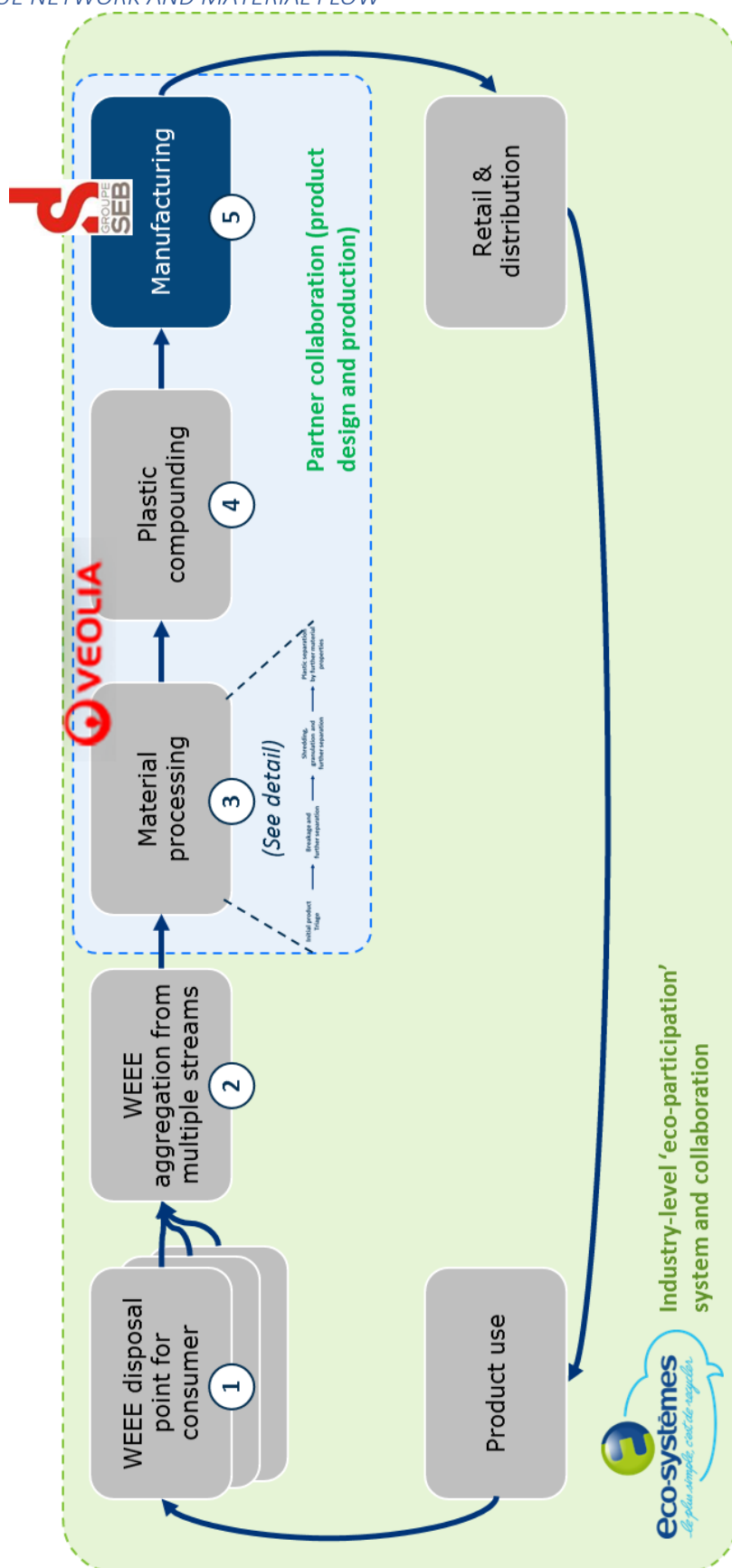
As described above, Groupe SEB co-established and is a member of Eco-systèmes, a PRO (Producers Responsibility Organisation) which manages a national level scheme for WEEE collection and recycling in France. In other countries, Groupe SEB participates as a member of other similar national schemes where these exist. In France, Eco-systèmes has collaborated with industry players to establish an overall value chain for plastic recycling. At the operational level, Groupe SEB collaborated initially with Veolia to establish a commercial supply chain for sourcing recycled plastic meeting required quality and technical properties, at commercial-scale volumes. This has helped to kick-start and expand commercialisation of recycled polypropylene plastic as a substitute for virgin materials, with both Groupe SEB and Veolia expanding their respective sourcing and sales options.

Figure 14 below illustrates the overall value network for Groupe SEB with respect to sourcing recycled plastics. The key steps include:

1. **WEEE disposal point for consumer.** As the first step of the process, Eco-systèmes collaborates with retailers and municipalities to establish take-back and collection points for electrical appliances.
2. **WEEE aggregation from multiple streams.** Industry players such as waste management companies collect and aggregate WEEE, and subsequently transport this to WEEE material processing operations.
3. **Material processing.** WEEE material processing is undertaken by organisations such as Veolia. Under a model where a company such as Groupe SEB generates a ‘commercial pull’ for procuring a specified volume and type of recycled plastic, the material processing steps are geared towards generating an output of recycled plastic that can be effectively transformed, in the subsequent step, into a high-value recycled commodity material.
4. **Plastic compounding.** This is a specialised manufacturing operation that takes waste plastic flakes and granules from WEEE (as well as potentially other sources), and chemically transforms them into plastic compounds specified by the buyer. These are delivered as plastic pellets ready for manufacturing.
5. **Manufacturing.** Groupe SEB purchases and takes delivery of recycled plastic pellets from the supplier at the production plant. These are used for manufacturing plastic parts and components for the given product model.

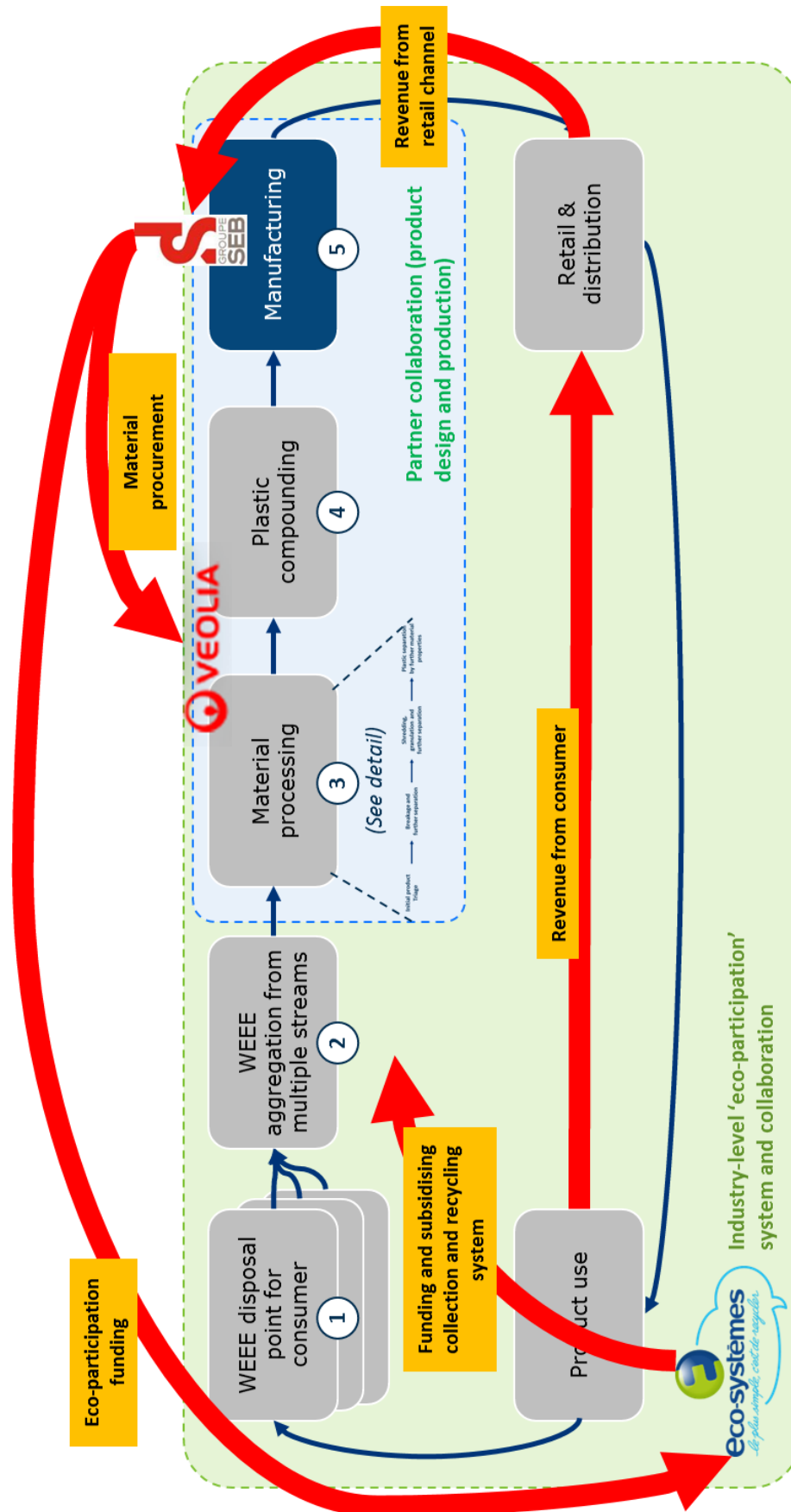
Figure 15 below overlays key financial value flows onto the material flow diagram. The process of managing the ‘eco-participation’ funding by Eco-systèmes is illustrated in Figure 16. Within this scheme, electrical goods manufacturers such as Groupe SEB pay Eco-systèmes a prorated fee based on their market share of goods sold in France. This fee is pulled through from payments the brands will in turn collect from retail channels. The fee is itself incorporated into the price of goods sold by retailers. In this manner, the eco-participation fee is generated by each product sold on the market, and ultimately goes to fund the system that manages WEEE collection and recycling.

FIGURE 14 VALUE NETWORK AND MATERIAL FLOW



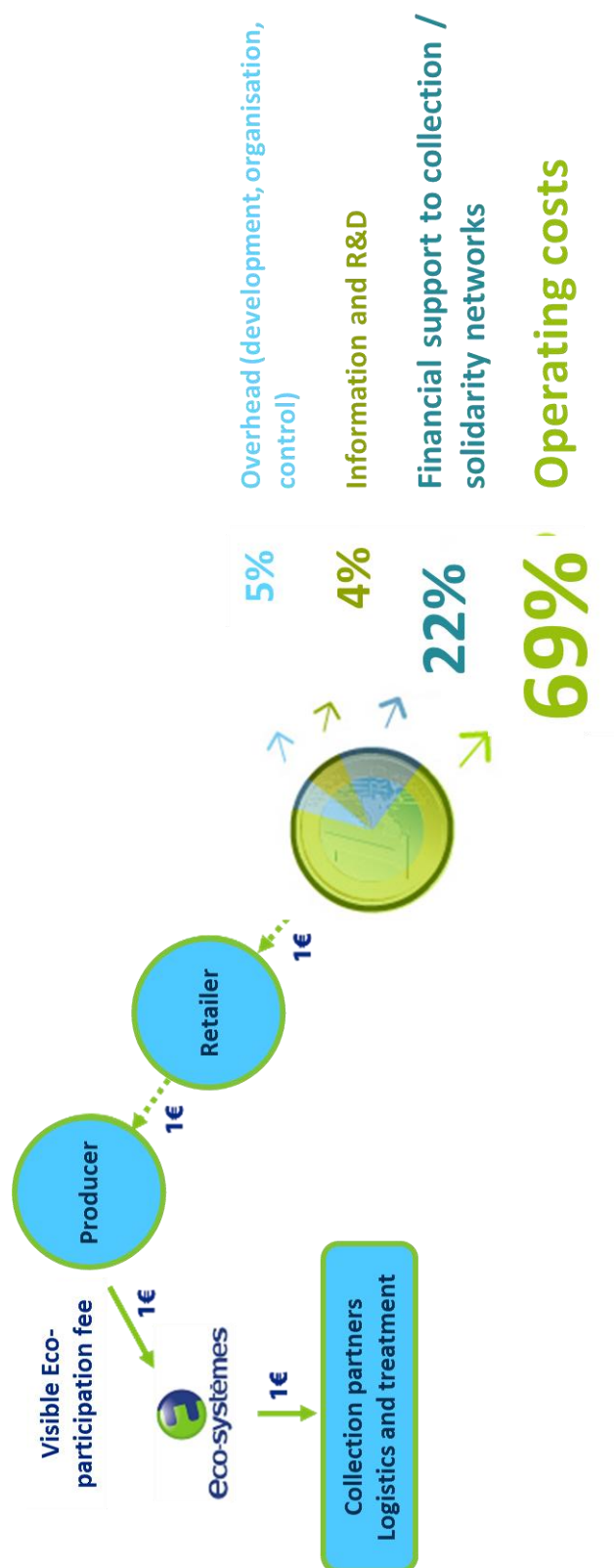
Source: R2Pi analysis, company interviews

FIGURE 15 VALUE FLOW



Source: R2Pi analysis, company interviews

FIGURE 16 ECO-PARTICIPATION FUNDING SYSTEM FOR ECO-SYSTÈMES

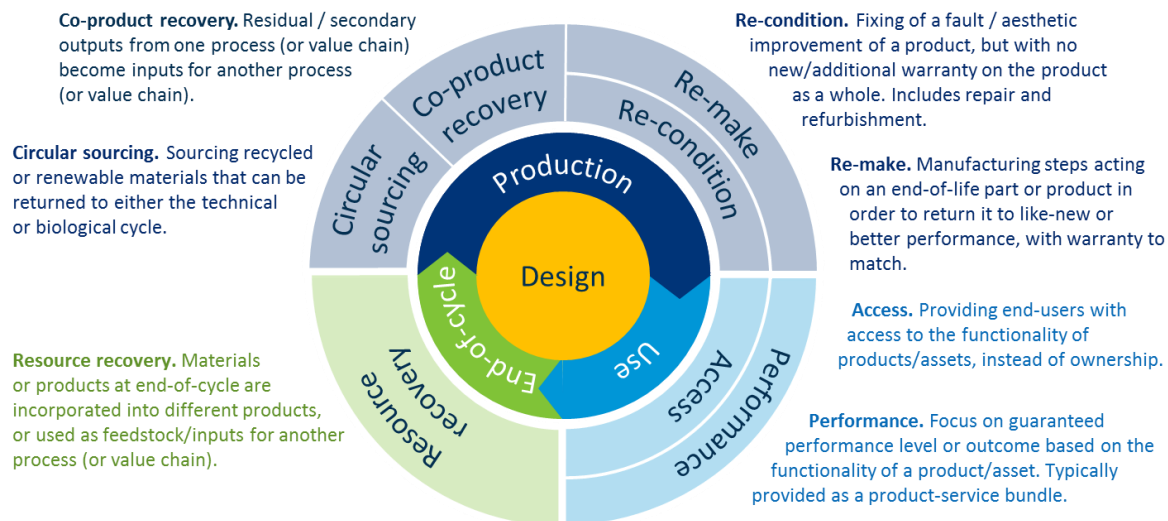


Source: Eco-systèmes

3.12 Business model circularity assessment

The R2Pi project has established seven key patterns of circular business model, described in Figure 17 below.

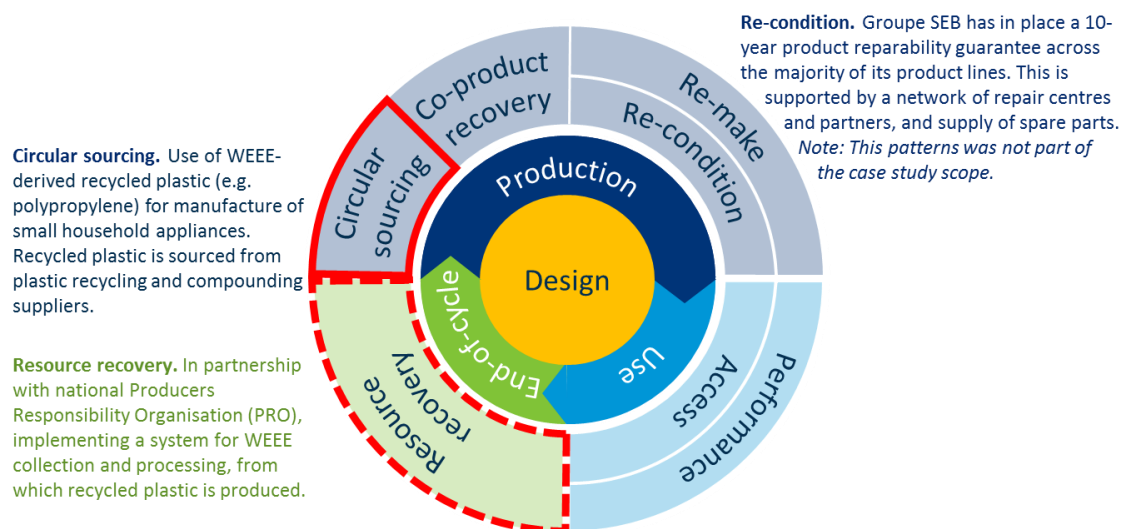
FIGURE 17 THE SEVEN CIRCULAR BUSINESS MODEL PATTERNS



Source: R2Pi Project

This case study has demonstrated how Groupe SEB has begun to successfully develop a strong model for Circular Sourcing of recycled plastics for certain products. As described in the value network diagram above, Groupe SEB contributes to a programme for plastic collection and sorting which is managed by the organisation Eco-systèmes. This provides the raw material for Groupe SEB partners Veolia to in turn source and process the plastic into the raw material used by Groupe SEB for production. At the level of Groupe SEB's business model, the Circular Sourcing pattern is applied to products utilising recycled materials. Groupe SEB contributes to establishing a Resource Recovery model at the system level, organised and governed by the PRO, Eco-systèmes.

FIGURE 18 CIRCULAR BUSINESS MODEL PATTERNS APPLICABLE TO GROUPE SEB



Source: R2Pi

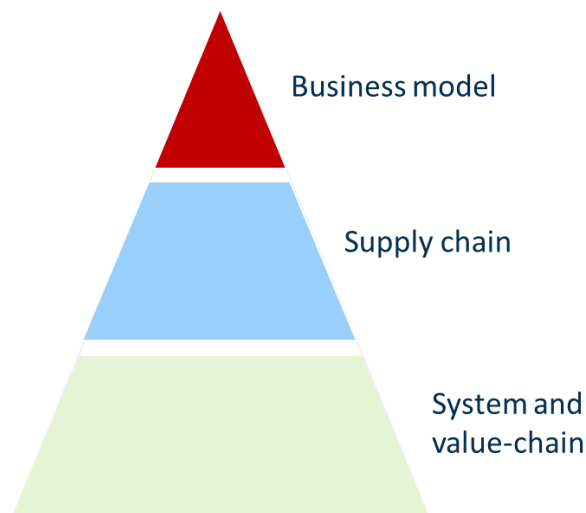
This case study highlights the fact that, while Groupe SEB has implemented key circular economy elements within its business model that enable it to implement the ‘Circular Sourcing’ business model pattern, it would be impossible to do so without key partners and the broader value network.

In analysing the enablers and barriers to circular economy for circular sourcing of plastics, the value network can be examined at three levels:

- The **business model** of the given company (Groupe SEB)
- The direct **supply chain** of the company – Tier 1 and 2 suppliers which the company has a direct relationship through purchasing or collaboration to provide the necessary recycled plastic feedstock for production. Veolia and suppliers of recycled plastic granules fall in this category.
- The broader **system and value chain** including upstream actors, downstream channels and customers, and other actors. The Eco-système organisation is part of this category.

These areas can be illustrated as a pyramid, with each level supporting and enabling the level above, as shown in Figure 19 below.

FIGURE 19 KEY LEVELS OF THE VALUE NETWORK FOR WEEE-DERIVED PLASTICS RECYCLING



Source: R2Pi analysis

These levels are referred to in the sections below.

3.13 Financial outcomes assessment

3.13.1 Groupe SEB business model

In terms of costs, Circular Sourcing has allowed Groupe SEB to take advantage of significantly lower cost recycled plastic and other materials. On average, recycled material inputs are 20% cheaper than virgin. The company has nevertheless had to implement new operational set-ups at manufacturing plant sites in order to accommodate the specific requirements of using recycled plastic granules. However overall, the cost advantage of using recycled plastics and other materials, reaching over 40% of material content of products such as the Rowenta steam station, has been significant.

As indicated in Section 3.3 (Value Proposition), Groupe SEB has successfully used recycled content in high-end products, and has positioned this as an innovative differentiator using the 'Eco Intelligence' label. Based on successes to date, the company has been rolling out circular sourcing across other product ranges. Lower input costs and brand differentiation is therefore enabling Groupe SEB to increase profit margins on products using recycled materials.

3.13.2 System-level outcomes

At the system level, the funding of Eco-systèmes' activities is enabling it to carry out coordination and advisory activities, as well as to run commercial tendering of recycling contracts.

With regards to Veolia, in this case example it has successfully secured supply contracts with Groupe SEB, and it is also developing a commercial strategy to expand its offering of high-quality recycled plastic to Groupe SEB and other manufacturing customers. The level of investment and effort being undertaken is indicative of the commercial potential Veolia sees in this market.

While there is strong potential for material suppliers, and the PRO-led system is financially self-sustaining, there are two aspects which will require further investment and may present financial risk. Of these is the need to invest in technology to improve the sorting of WEEE-derived plastics by colour and to maximise the yield of high-quality recycled plastic. The second is uncertainty over the whether recycled plastic will continue to have a significant cost advantage over virgin materials. If this cost advantage gets eroded due to either rising recycled plastic prices or falling virgin material prices, manufacturing customers may buy less recycled material. This could put at risk investment in plant and skills that that suppliers have put in place. These aspects are explored in more detail under the SWOT and barriers and enablers analysis below.

3.14 Non-financial outcomes assessment

In addition to the financial outcomes discussed above, Groupe SEB's development and expansion of a Circular Sourcing model has provided direct environmental benefits. Indirectly, it is also contributing to the positive social impact that Eco-systèmes is having. More broadly, the growth of Circular Sourcing for plastics is improving innovation and capabilities across the system.

3.14.1 Product carbon footprint reduction and resource efficiency

For the Rowenta Silence Steam product, Groupe SEB was able to use recycled Polypropylene, as well as other recycled materials such as steel and aluminium, to achieve recycled content reaching over 40%.

Compared to using virgin plastic, Groupe SEB has calculated that using recycled plastic has enabled substantial reduction in the product carbon footprint. Furthermore, the use of plastic from WEEE has enabled the effective cycling of materials, turning these from what would have been waste into a high value commodity.

Circular Sourcing has therefore enabled both a carbon impact reduction, as well as improved resource efficiency and waste elimination.

3.14.2 Social impact

Groupe SEB's key partner, the PRO Eco-systèmes, estimates that 7,000 people are employed by the WEEE recycling industrial system it oversees. These jobs are supported by the creation and continuous improvement of the national WEEE system, including investment and growth of new recycling and manufacturing plants, such as the one created by Veolia following collaboration with Groupe SEB.

Prior to the establishment of Eco-systèmes, a number of social enterprises existed which took back and re-sold used EEE. When the WEEE PRO-led system was put in place, Eco-systèmes signed national agreements with two charities, Emmaüs and Envie, to support re-employment activities relating to refurbishment and repair of equipment in sufficiently good state to be re-sold. This has enabled the professionalisation of activities previously done on an informal basis, providing opportunities to unemployed individuals to build skills and experience.

For example, when a large appliance is exchanged and taken back on delivery of a new purchase, one out of four of these used pieces is taken to a network of 30 workshops operated by the charity Envie. These workshops provide training to individuals who will go on to work in jobs relating to equipment repair. The charity reports that 60% of its staff go on to gain a professional qualification and further employment.

Eco-systèmes reports that, between 2010 and 2016, the PRO has enabled EUR 37 million worth of activities conducted by its social enterprise and charity partners.

3.14.3 Technology, skills and capability development

The collaboration between Groupe SEB and Veolia has enabled the development of new skills, know-how, and technology across both organisations.

As discussed above, Veolia has purchased and integrated the plastics compounding company involved in the original project, and is developing its capabilities to offer recycled plastic commodities at larger scale, and to provide a wider offering to customers.

Groupe SEB has developed tools and invested in manufacturing plant capabilities which enable it to more easily explore and trial new recycled plastic sources.

At the system-wide level, Eco-systèmes is enabling France to develop a competitive, advance recycling industry. This creates the potential for export of services and technology, creating further jobs and scaling up the benefits described above.

3.15 SWOT analysis

This section contains an analysis of the Strengths, Weaknesses, Opportunities and Threats (SWOT) associated with the Circular Sourcing model. It is important to note that this is primarily an assessment of the attributes of the business model itself and only secondarily of the specific attributes of the individual company. As is customary in SWOT analyses, the Strengths and Weaknesses are internal to the case organisation's business model. Whereas the Opportunities and Threats are external to the case organisation's business model, coming from the context in which they operate (illustrated in Figure 20).

The strengths, weaknesses, opportunities and threats covered in this section have been discussed in detail within the business model assessment sections above. The purpose is to distil and highlight those key areas that result in enablers or barriers for the development of circular business models. Section 4 discusses these barriers and enablers, drawing lessons and conclusions.

FIGURE 20 SWOT ANALYSIS FRAMEWORK

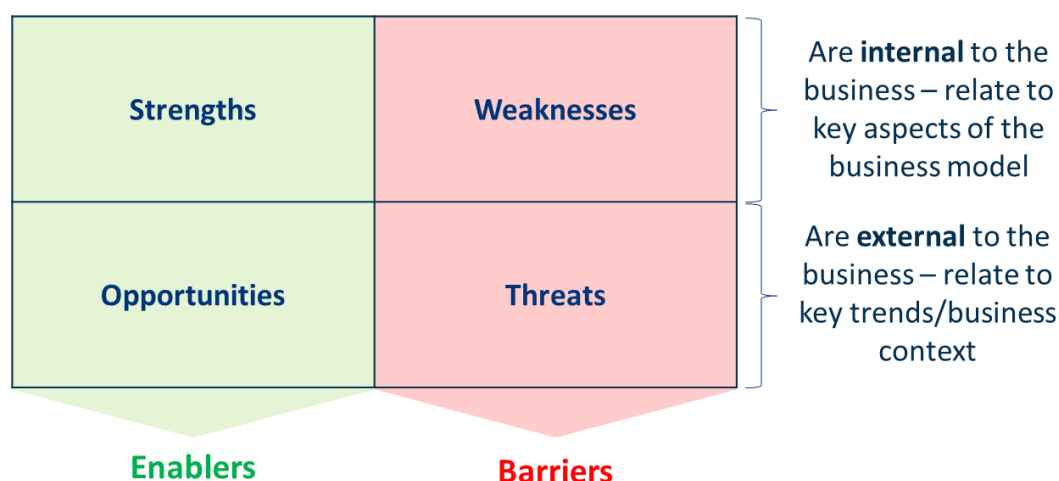


Figure 21 below summarises the key SWOT areas assessed for Groupe SEB's Circular Sourcing business model. As discussed in Section 3.12, this case study highlights the importance of elements within the company's supply chain and broader system which play a key role in enabling this model.

FIGURE 21 SWOT ANALYSIS

<p style="text-align: center;">Strengths</p> <p><i>Business model level</i></p> <ul style="list-style-type: none"> • Product development – Process for considering recycled materials within products (<i>key activity</i>) • Marketing – Marketing claims incorporated into value proposition and overall brand (<i>key activity</i>) • Established set of approved recycled materials (<i>key resource</i>) • Partnerships with material suppliers and system-level PRO (<i>key partners</i>) • Product reparability commitment (<i>value proposition</i>) <p><i>Supply chain level</i></p> <ul style="list-style-type: none"> • Growing material supplier capabilities and offering <p><i>Systems-level</i></p> <ul style="list-style-type: none"> • System-level coordination by Eco-systèmes PRO 	<p style="text-align: center;">Weaknesses</p> <p><i>Business model level</i></p> <ul style="list-style-type: none"> • Product design mind set • Product design constraints <p><i>Systems-level</i></p> <ul style="list-style-type: none"> • Material segregation • Reliability of non-EU material streams (especially Asia)
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Growth of the recycled plastics industry • Changing consumer attitudes • Regulatory pressure to increase plastics recycling 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Market prices of recycled plastic compared with virgin plastic • Regulations impacting use of recycled plastics for products in contact with food • Consumer preferences with respect to ‘eco-products’

Source: R2Pi project analysis

The strengths, weaknesses, opportunities and threats identified above are described in the sections below. These are identified according to their relevance at the business model, supply chain, and broader system level.

3.15.1 Strengths

This section describes key strengths identified in Groupe SEB's business model (described in Section 3), as well as aspects in the broader supply chain and system which support 'circular sourcing'. These are summarised and described below.

Business model level

- Product development – Process for considering recycled materials within products (*key activity*)
- Marketing – Marketing claims incorporated into value proposition and overall brand (*key activity*)
- Established set of approved recycled materials (*key resource*)
- Partnerships with material suppliers and system-level PRO (*key partners*)
- Product reparability commitment (*value proposition*)

Supply chain level

- Growing material supplier capabilities and offering

Systems-level

- System-level coordination by Eco-systèmes PRO

Product development – Process for considering recycled materials within products

As is common in large and mature manufacturing companies, Groupe SEB has a stage-gated process governing all product innovation and development (broad elements of this are described in Section 3.8).

Following initial exploratory projects, the company has established an approach for considering the use of recycled plastics as part of the new product development process. This involves two main functions who take part in this process: Marketing and Product Development teams.

Strong points of Groupe SEB's current model are that it can draw upon a base of knowledge and suppliers of recycled plastic materials it has developed over the past years. In particular, the company has a set of approved recycled materials and suppliers which are incorporated within design tools and decision-making processes. Key questions addressed at the early stages of the product development process include:

- Does the product lend itself to the use of recycled plastic? (e.g. can the exterior be designed in black or dark colours?)
- Does Groupe SEB already have approved recycled plastics that have the necessary characteristics for use in the product?
- Can the product be designed to feasibly accommodate material properties of approved recycled materials (e.g. colour, thermal properties, mechanical properties).
- Can the approved recycled plastics be sourced at the required volume and price for planned production runs?

During the course of the development process, Marketing can reinforce the consideration of recycled materials if it determines that a claim could be made which adds value to the product

proposition or to the brand. If this is the case, effort will be made to maximise feasible use of recycled materials in the product specifications.

Even if recycled material use in the product design doesn't meet thresholds for external messaging and marketing, these will be considered whenever they present a clear benefit, in particular a cost advantage over the use of virgin materials.

Marketing – Marketing claims incorporated into value proposition and overall brand

As discussed above and in Section 3.8.2, Marketing can play a key role in driving the use of recycled material at the design stage of a new product.

The key questions which Marketing will pose during the early stages of product development are:

- Could the use of recycled materials be beneficial to the brand or the product value proposition?
- Can a sufficient proportion of recycled materials be used within the product to justify a marketing claim?

As discussed above, even if Marketing decides not to create a marketing claim around the use of recycled materials, the product design specs can incorporate this if it is driven by the Product Development team. From a circular economy perspective, the benefit of establishing a marketing claim is that the company is subsequently committed to maintaining the publically communicated level of recycled materials used for the given product model.

Outside of marketing claims, the level at which recycled materials are considered and incorporated into design specs will be determined by factors such as costs and corporate targets and policies.

Established set of approved recycled materials

When the company has established and approved sources of recycled plastics, the technical specifications and other relevant information are available as a key resource to Product Design teams. Groupe SEB teams can reference these approved materials when developing new products, and can rapidly determine whether they could be suitable or not. Technical feasibility may still need to be done if they are to be used for the first time in products (e.g. to adjust for properties such as mechanical impact resistance), but designers will already have a material to work with. The product development process can then more swiftly proceed to procurement and commercial discussions with suppliers on price and volume.

If a set of approved materials and technical references doesn't exist, the company needs to invest additional effort in identifying and testing the feasibility of recycled materials, typically in collaboration with suppliers and involving internal quality testing and assurance functions. This makes the product design process more complicated and time consuming.

As described in Section 4, one way in which the process of new material identification and selection can be facilitated is by suppliers developing their offering of standardised recycled plastic commodities which can either be used 'off the shelf', or have well-defined and understood properties which can be feasibly modified (e.g. through blends and additives).

Partnerships with material suppliers and system-level PRO

The key partnerships Groupe SEB has with material suppliers such as Veolia, and with Eco-systèmes as a system-level Product Responsibility Organisation, are key strengths of its 'extended business model'.

Close and collaborative relationships with suppliers are important in developing recycled plastic commodities as the sector is still relatively immature. When co-developing a new material, this typically involves a learning process where both the manufacturer (Groupe SEB) and the supplier iteratively establish an understanding of what is required and what is feasible. Following the material development phase, commercial considerations will become increasingly relevant. However ongoing collaboration to ensure material availability and quality is important.

The partnership with Eco-systèmes has helped to underpin Groupe SEB's circular sourcing model, while also acting as a resource for the industry in France as a whole. The PRO has played a key role in match-making between manufacturers and suppliers, for example it provided the original introduction between Groupe SEB and Veolia when the Rowenta brand was considering recycled plastic for the steam generator. By working in collaboration with Eco-systèmes, Groupe SEB is also able to influence and catalyse changes at the system level to accelerate the development of recycled plastic material streams which are relevant for its products.

Product reparability commitment

Groupe SEB recently introduced a commitment across its brands and products guaranteeing their reparability and availability of spare parts over a period of 10 years. While this aspect of the business model wasn't a focus of the case study, it nevertheless is part of the value proposition of products using recycled plastic content. The 10 year reparability commitment strengthens the circular sourcing business model in a number of ways.

Firstly, it reinforces the message of quality behind Group SEB's products. In the past, there had been some reluctance in using recycled plastics due to fear that it could be perceived as reducing product quality or the image of products and brands. The reparability commitment helps to remove this as an issue.

Secondly, product reparability may help to maintain a longer term relationship with consumers if they are more likely return to Groupe SEB with a product needing repair, rather than buying a new product. This can be used to reinforce and incentivise product take-back when it is deemed to have reached end-of-life, helping to close the loop for WEEE devices.

Material supplier capabilities

Suppliers such as Veolia are growing their capabilities and product offering with respect to supplying recycled polypropylene and other plastics. More broadly, major waste management companies and recyclers are strategically positioning themselves as 'resource managers' rather than as waste managers. This shift in mind set from waste to resource is a growing strength within the value chain for Groupe SEB.

System-level coordination by Eco-systèmes PRO

The Eco-Systèmes PRO in France and the system it has put in place is a key system-level strength underpinning Groupe SEB's ability to implement circular sourcing models. The organisation has several functions including: providing technical advice; match-making and facilitation of collaboration; managing the WEEE contribution payments and financial incentives; and directing investment and capability development across the national WEEE collection and processing infrastructure.

3.15.2 Weaknesses

This section describes areas of improvement and development where further action would support Groupe SEB's circular sourcing business model as well as key areas in the broader supply chain and system that are important drivers for material recovery, recycling, and circular sourcing. These are summarised and described below.

It is important to note that Groupe SEB has been at the forefront of using recycled plastic and materials within its products in France. While it has high ambitions to achieve further increases, it is acknowledged that the company – as well as the broader industry – is still at the beginning of a journey. Areas of development needed to further establish the circular sourcing model include:

Business model level

- Product design mind set
- Product design constraints

Systems-level

- Material segregation
- Reliability of non-EU material streams (especially Asia)

Product design mind set

Groupe SEB has undertaken significant strides in growing the use of recycled plastic within its product range. Nevertheless, there still tends to be a bias towards using virgin plastic as default by product designers and developers. Reasons for this include:

- When no approved recycled material alternatives exist
- Lack of time and resources to consider new material alternatives
- Mind set that virgin plastic offers the best quality and consumer experience (look and feel)
- Lack of awareness of benefits to using recycled plastic
- Lack of consistent and strong enough internal incentives and communication to encourage designers to consider recycled plastic (e.g. internal or external targets for using recycled materials).

At present, the strongest driver for considering recycled plastic use is economic, when recycled plastic provides a significant cost advantage to virgin material. If this advantage isn't strong enough or designers aren't made aware of it, they will use virgin plastic as default within product specifications. Once product specifications are fixed – which happens relatively early at 'stage 1' (out of 4) of the product development process – these generally can't be changed at later stages.

When no suitable pre-approved recycled materials exist; no suitable options are available in the market; and there is no large enough cost advantage to exploring alternative recycled materials; the increased risk and complexity of new material development are powerful disincentives. In the original Rowenta steam generator project and other similar projects that started ‘from scratch’ within Groupe SEB, the new recycled material development and testing process took a year or more to conclude. This can become a disadvantage when bringing new products to market.

Some incentives for recycled plastic use exist within Groupe SEB, such as communication of lifecycle product carbon footprint reduction eco-design levers, as well as targets and benchmarks for using recycled materials. However, as most of the relevant products are energy consuming, the focus of product design and marketing regarding carbon reduction and ‘eco-design’ tends to be on energy efficiency.

Further development of WEEE-derived plastic recovery and re-processing is needed to provide consistent sources that meet manufacturer needs for quality and technical requirements. As described in Section 4, system and sector-level development is needed for companies such as Groupe SEB to significantly adopt recycled plastic.

While system-level developments gradually progress, companies such as Group SEB will need to implement strong incentives and behaviour changes internally to continually push opportunities for using recycled plastic as an alternative to virgin.

Product design constraints

Technical properties of recycled plastics are an important consideration for new material development, in particular with respect to polypropylene plastic which is a key focus of Groupe SEB’s efforts. For example, thermal properties are important for products that are exposed to significant heat sources (such as the Rowenta steam generator), and mechanical properties influencing shock resistance are important for products subject to impact during use or potential falls (e.g. irons, vacuum cleaners).

Many of these technical issues are broadly deemed to be solvable. However an important factor acting as a constraint to the uptake of recycled polypropylene is colour.

Poor segregation by colour in the upstream supply chain results in mixed-colour plastic as input into the compounding manufacturing step (prior to creation of plastic granules for production). This results in a grey-coloured mix which is unsuitable for use in products with exteriors that are designed to be light colour or transparent. For these reasons, recycled polypropylene is dyed black or with dark colours.

Until material segregation by colour is better implemented in the waste plastic processing supply chain (or technical alternatives are developed), companies such as Groupe SEB will exclude recycled plastic use from exterior pieces of products within their portfolio which are white or light coloured.

Companies therefore need to potentially consider expanding product lines that use black or dark colour schemes while making them attractive to consumers. Nevertheless, the need to offer colour choice and to provide attractive look and feel in comparison with competitor products acts as an important challenge for the industry.

Material segregation

As highlighted above for polypropylene, poor material segregation by colour in the plastic re-processing supply chain, combined with current practices offering colour choice and lighter/transparent colour schemes across product portfolios, create an important constraint requiring recycled plastic to be used in products with black or dark coloured exteriors, or for internal components.

Material segregation into distinct streams by type of polypropylene from WEEE sources is also very challenging given that disposals include products from different time periods and sources. These may or may not have indications of material type, or will have been manufactured using different practices (in original manufacturing, polypropylene plastics will have been mixed with compounds and additives to give it specific properties).

If waste plastic processing techniques are able to segregate inflows into streams with particular properties, this will improve the effectiveness of downstream material compounding. If, on the contrary, segregation isn't as effective, it means that compounders and plastic processors have less flexibility in using the materials as they are unlikely to economically meet specific customer requirements. This may result in 'downcycling' where plastics of mixed grades and properties are re-constituted into plastics that are less valuable or harder to use as substitutes for virgin material.

In contrast to PET plastic recycling which is very mature in France (and the material itself is easier to work with and re-constitute back into products), the development of high-grade recycled polypropylene streams for re-use in electrical and electronic appliances is still in its early stages. This translates into current challenges such as:

- Maintaining consistent quality and material characteristics
- Consistent material availability at commercial volumes
- Process inefficiencies that increase costs

Reliability of non-EU material streams (especially Asia)

Groupe SEB's development of products using recycled polypropylene has focused mainly on developing sources for production plants in France. A challenge highlighted by the company has been the difficulty of identifying suitable recycled polypropylene sources for sub-contracted production in Asia.

In order to meet internal commitments and for external marketing and communication, Groupe SEB requires recycled plastic sources to be verifiable. This is currently not consistently possible for manufacturing products and parts originating from Asia.

To address this, Groupe SEB will need to work with industry peers as well as local partners and networks in a similar way to that achieved in France. This is explored further in Section 4.

3.15.3 Opportunities

Three areas of opportunity can be identified with respect to Groupe SEB's circular sourcing model:

- Growth of the recycled plastics industry
- Changing consumer attitudes
- Regulatory pressure to increase plastics recycling

Growth of the recycled plastics industry

Following the breakthrough projects between Groupe SEB and Veolia in the past years to develop high quality recycled plastic sources for products such as Rowenta's steam generator, knowledge and capabilities have grown on both sides. Veolia has reportedly been developing its offering of recycled plastic products and improving its capabilities to develop and manufacture recycled plastic commodities.

One of the developments following the initial work between Veolia and Groupe SEB was the purchase and integration by Veolia of the third party compounder company involved in the project. This has enabled Veolia to offer end-to-end capabilities from waste plastic collection and processing, through to plastic re-processing and compounding into recycled plastic pellets for sale and supply to Groupe SEB or other customers. Veolia has the ambition to further develop these capabilities and the ability to source, process, manufacture and sell recycled plastic commodities at the European level as well as internationally.

In addition to its strategic relationship with Veolia, Groupe SEB also sees opportunities to diversify sources of recycled polypropylene commodities as well as other plastics used within its products, such as ABS.

More broadly, there is a growing trend for companies traditionally focused on waste collection and management to strategically position themselves as organisations providing 'resource management' services. This lends itself to commercial strategies illustrated by Veolia, integrating downstream plastics manufacturing and chemistry capabilities to transform waste inputs into value added commodities. Importantly at this stage of the industry's development, the ability to 'problem solve' and collaboratively develop alternative materials with manufacturing customers is very important for companies such as Veolia.

Changing consumer attitudes

In the past, using recycled plastic within products was seen as risking consumer perceptions of lower quality, and at best not adding to the value proposition.

As seen with the Rowenta steam generator, Groupe SEB now prominently highlights the fact that its product uses nearly fifty percent recycled materials, and it is also sold as a high-end product. This is illustrative of the trend whereby customers in France do not see recycled content as a potential negative aspect, but are also attracted by 'eco-credentials'. This is also reportedly the case with Group SEB end-customers in other markets including Italy and Spain. This is however likely to still vary by geography and customer segment.

If target consumer segments become increasingly sensitised to environmental issues and relevant themes such as plastics pollution and carbon footprints, this will present an important opportunity for Group SEB brands to distinguish themselves in the market.

Regulatory pressure to increase plastics recycling

As discussed in Section 2.2.2, European and French national regulations and policies are targeting the development of effective WEEE collection and materials recycling. The development of Eco-systèmes as the major national coordinator of household WEEE collection and processing in France has provided important support for companies such as Group SEB wishing to develop their supply chain for recycled plastics.

The development of this system in France, as well as in other countries in Europe and internationally is an important opportunity for Groupe SEB. Germany, for instance, has a similar national system for WEEE management funded by the industry. Where such systems are still developing and maturing in other countries, Groupe SEB and players such as Veolia have the opportunity to take part and influence their direction.

3.15.4 Threats and uncertainties

Key factors external to Groupe SEB which are threats or uncertainties for the circular sourcing model are:

- Market prices of recycled plastic compared with virgin plastic
- Regulations impacting use of recycled plastics for products in contact with food
- Consumer preferences with respect to 'eco-products'

Market prices of recycled plastic compared with virgin plastic

The lower price of recycled plastics compared to virgin materials provided the original impetus for initiatives within Groupe SEB to explore the feasibility of using recycled plastic derived from WEEE sources. Recycled plastic is still lower cost, however there are a number of factors that players across the value chain believe can put this at risk:

- Increased demand for recycled plastic, while positive, can drive up prices if supply doesn't expand accordingly.
- Greater investment and operational costs incurred by recycled plastic suppliers to tackle the challenges indicated above (e.g. material segregation and increasing material quality) and to provide recycled plastics at the required quality and volume demanded by customers may put upward pressure on prices.
- Volatile oil prices, on which virgin plastic prices are based, may come down and challenge the price differential enjoyed so far by recycled plastics.

The commodity price risk to the recycled plastics market is an issue that preoccupies suppliers and can create a barrier to investment and system-wide improvement. The industry as a whole therefore needs to identify ways of making the system of WEEE-derived plastics management more efficient and effective, and find ways to manage the consequence of commodity price risks. Potential approaches to this are discussed in Section 4.

Regulations impacting use of recycled plastics for products in contact with food

An uncertainty for manufacturers such as Groupe SEB, who include within their portfolio products used for food processing and cooking, is EU regulations regarding the restriction of certain plastic additives. These regulations tend to change over time, and plastics which previously met health and safety standard can find themselves excluded from these. As WEEE collection includes products manufactured over long time spans, this creates challenges with respect to identifying and segregating

out non-compliant plastics, as well as creating uncertainty over volumes of material that qualify and are available for use. Investment in necessary technology and infrastructure will be needed across the system to remain in step with regulatory requirements.

Consumer preferences with respect to 'eco-products'

While awareness and attitudes with respect to environmental issues is improving, it is unclear to what extent this translates into buying behaviour. Consumers are still principally concerned with product performance and quality at a given price point, as well as product aesthetics.

As described above, Marketing can be a strong internal driver for pushing adoption of recycled plastics, which can support a marketing claim that gets externally communicated and enhances the brand. However if economic drivers (such as higher recycled material prices relative to virgin) are unfavourable, it is unclear to what extent the business will be incentivised to maximise recycled plastics use from a marketing perspective if customers do not sufficiently value this.



4 Discussion & Conclusions

In this section, we draw from the business model and SWOT assessment to identify key enablers and barriers for transitioning towards circular business models, with a focus on Groupe SEB's circular sourcing model.

As described in the previous section, the circular sourcing model illustrated by Groupe SEB highlights the importance of the supply chain and system-level actors and factors that influence success at the level of the organisation's business model. Many of these factors are outside of Group SEB's direct operational control or commercial influence because they require the development of capabilities, infrastructure, and pricing signals across the business ecosystem.

A useful approach to identify enablers and barriers at a system level, is understanding the key risks faced by actors within Group SEB and its value chain. Key enablers will be measures that effectively reduce and mitigate the impact of these risks, whereas barriers are those that maintain or exacerbate these risks.

Internal risks faced within Groupe SEB include:

- Product development delay and other negative impacts caused by considering recycled material sources rather than choosing 'business as usual' virgin materials.
- Future impact on cost of goods sold and profits if recycled plastic becomes more costly than virgin materials.
- Dependency on single supplier sources of recycled materials.
- Recycled material supply constraints or disruptions (also leading to higher prices) – created either by increased demand; variability in WEEE material collections and composition; or regulations restricting use of certain plastics.
- Lock into recycled content commitments for certain product models when ongoing fulfilment is subject to potential supply and commercial pressures, with a potential impact on brand and reputation.

Risks faced in the supply chain and broader system:

- Recycled plastics becoming significantly more expensive than virgin materials, potentially leading to assets dedicated to plastic recycling becoming 'stranded' as manufacturing demand switches to virgin sources.
- WEEE-derived recycled material supply constraints or disruptions (similar to those faced by the manufacturer), preventing effective and economic utilisation of assets or fulfilment of supply contracts.

As highlighted above, value chains focused on recycled material supply are subject to greater complexity as well risks and uncertainties compared to virgin materials, where the main risk is commodity price fluctuation.

If the system as a whole is to transition further towards using recycled materials, certain practices and mechanisms are needed to manage these risks and uncertainties. These are included in the discussion below of key enablers and barriers to circular sourcing.

4.1 Key enablers

Key internal and external enablers for circular sourcing of plastics relevant to Groupe SEB and others within the sector are measures which reduce and mitigate risks highlighted above, and make the system as a whole work more effectively. These are summarised below.

Business model level (internal enablers)

- Recycled content targets and policies
- Product design policies
- Procurement and sourcing decisions

Supply chain level

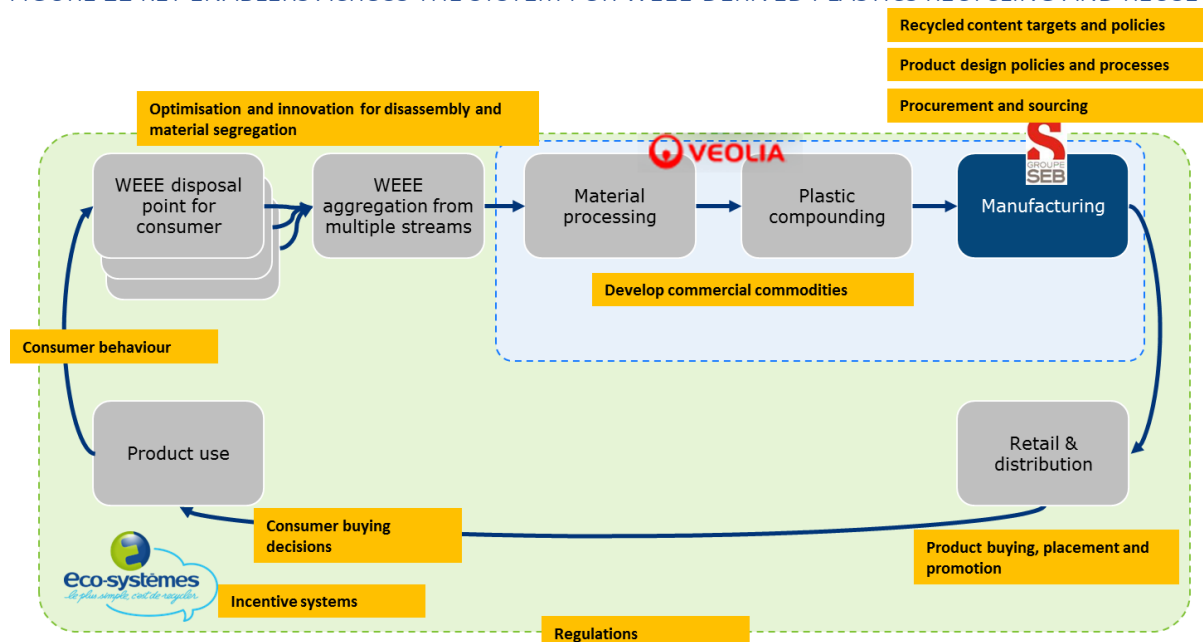
- Development of commercial commodities relevant to market needs

Systems-level

- Optimisation and innovation for disassembly and material segregation
- Consumer behaviour at end-of-life product disposal
- Consumer buying decisions
- Channel buying and promotion decisions
- WEEE material management incentive systems
- Regulations

These enablers are mapped onto the system-level illustration of plastic material flows examined in the Groupe SEB case study, shown in Figure 22. Each enabler is described in more detail below.

FIGURE 22 KEY ENABLERS ACROSS THE SYSTEM FOR WEEE-DERIVED PLASTICS RECYCLING AND REUSE



Source: R2Pi, company interviews

4.1.1 Recycled content targets and policies

An key internal enabler for circular sourcing is establishing policies and targets for recycled content use in products, and as well as product design policies and guidelines. For example, defining minimum recycled content targets which product development teams need to aim for across all new products designs. Product design teams would need to explain when targets cannot be met (for example inability to find alternative materials in the required timeframe). Regular product design governance reviews across teams can also be put in place to track progress and review challenges and successes, identifying measures for continuous improvement.

Companies can also establish a strategic roadmap for recycled content use over a multi-year timeframe, with input from relevant functions such as Product Development, Procurement, and Marketing. This roadmap can also be communicated to suppliers and externally to the industry in order to provide a long-term demand signal and encourage investment by players in the value chain.

Implementing recycled content strategies while the wider industry is not yet mature will require manufacturers to potentially establish 'dual sourcing' and design approaches. That is, having both a 'virgin material track' and a 'recycled material track'. This may require additional time and effort, however it could enable flexibility for manufacturers and allow them to hedge the risks of material price and availability.

4.1.2 Product design policies and processes

As discussed above, a current problem with recycled plastic is that it isn't suitable for use in exteriors of products that are white or light coloured. In order to address this, manufacturers may need to broaden product lines that are black or dark coloured. This will require engagement with Marketing and customer insights teams to determine how this can be balanced with the perceived need to provide consumers with a choice of colours.

A parallel design principle that should also be adopted by manufacturers is to make product exteriors easy to disassemble by recycling companies. Regulatory requirements and design practices for product reparability and recyclability should in principle enable this.

4.1.3 Procurement and sourcing decisions

Procurement teams within Groupe SEB are continuously reviewing market availability and pricing of both virgin and recycled plastic content. A further key internal enabler for circular sourcing is to therefore proactively engage with suppliers (and potentially also peers) to encourage the development of recycled material alternatives. This complements the above enabler (recycled content targets) which provides the demand signal, whereas this measure facilitates action and collaboration. It also ties in with supplier action on recycled commodity development, discussed below.

4.1.4 Development of commercial commodities relevant to market needs

In this case example, Veolia (and a compounder which was subsequently acquired and integrated), collaborated with Groupe SEB to develop a suitable recycled plastic material. This was a long and iterative process, including trial and error. While successful, a greater range of plastic materials needs to be developed and product volumes scaled up in order to enable wider industry uptake.

Companies such as Veolia will need to establish standards for recycled plastic compounds which can be produced and marketed at scale, with consistent characteristics and quality. This will require collaboration with manufacturers to identify what common material requirements are most in demand, and target investment in material production.

Manufacturers typically have specific requirements in terms of blends and additives. However it may be feasible to develop 'base commodities' (for example of recycled polypropylene) which can be accepted for a broad range of uses and further tailored as required.

4.1.5 Optimisation and innovation for disassembly and material segregation

An external enabler to the problem of recycled plastic colour is to establish upstream processes for product disassembly and material segregation by colour. This can provide greater downstream potential for use of recycled plastic for products with white or light colour exteriors.

This will require process and technology innovation, as well as industry-level coordination with manufacturers (e.g. implementing product design principles discussed above).

4.1.6 Consumer behaviour at end-of-life product disposal

Collection of WEEE needs to be maximised in order to provide as much volume of qualifying material as possible for processing and recycling. PRO organisations such as Eco-systèmes play an important role in establishing collection points and processes so that consumers can easily dispose of materials (e.g. in collaboration with retailers, municipalities etc.). Consumer awareness and education is also very important so that products are correctly disposed of. Public policy and awareness campaigns can play an important role in enabling this. Groupe SEB's Rowenta brand has demonstrated an approach to influencing consumer awareness through its partnership with WWF-France.

4.1.7 Channel buying and promotion decisions

Consumers are principally interested in product functionality, design, performance, and price. Recycled content is currently not a significant buying criterion. Retailers can play an important enabling role in raising customer awareness as well as creating demand pull for eco-products. Examples of actions that retailers can play include:

- Choice editing: Favouring eco-products and brands/manufacturers that have commitments to increase recycled content and design for recyclability
- Promotion: Highlighting in-store and online the sustainability benefits of products, and 'nudging' customers towards these.

4.1.8 Regulations

Extended producer responsibility (EPR) regulations have been an important enabler for WEEE management in France as well as other countries. However these are not consistently applied across Europe, and multiple systems also create fragmentation and sub-scale solutions. Harmonisation of EPR and implementation of the EU WEEE Directive, as well as creating mechanisms for cross-border flows of waste for recycling and processing will be an important systemic enabler for manufacturers seeking to implement circular sourcing models.

4.2 Key barriers

Factors that perpetuate or exacerbate the system-wide risks identified above will be key barriers for the development of circular sourcing models by Groupe SEB and other manufacturers. These include the following (described further below):

Business model level (internal barrier)

- Weak internal incentives driving design and development decisions

Supply chain level

- Technical barriers

Systems-level

- Material price risk

4.2.1 Weak internal incentives driving design and development decisions

For manufacturers, sourcing virgin polypropylene is the default and 'safe' option in the short term. Identifying and considering recycled sources takes time, effort, and creates risk and uncertainty in the product development process.

Internal incentives within manufacturers therefore need to be very strong to counter these issues. As described under 'enablers' above, this could take the form of internal targets and policies around the use of recycled materials. If incentives are weak, this will be a barrier for the uptake of circular sourcing models.

The Eco-systèmes PRO has introduced a system of modulated fees payable by manufacturers. Fees are increased (malus) or decreased (bonus) for products based on whether they meet eco-design criteria such as design for recyclability. Currently, these bonus/malus modulations are deemed to be too small to sufficiently incentivise design behaviour. However this could be turned into an enabler if they become more influential.

4.2.2 Technical barriers

An important technical barriers for use of WEEE-derived polypropylene at scale is the ability to effectively segregate plastic by colour. Until this becomes feasible, the use of recycled polypropylene will be restricted to internal (non-visible) components or product ranges that are dark or black in colour.

4.2.3 Material price risk

Uncertainty over whether recycled polypropylene will maintain a cost advantage over virgin plastic (whether due to increased demand or changing oil price) creates risk across the system. For recyclers and material suppliers, it creates a barrier to investment in new technology or capacity expansion. For manufacturers, it adds to the risk and effort already present compared with using virgin materials as the default choice. Similar issues are faced by other types of plastic, where virgin and recycled commodity prices are a key determinant of buying decisions.

4.3 Replicability in other sectors

The focus of this case study has been on the circular sourcing model for polypropylene used for manufacturing small household appliances. Many of the key principles with regards to enablers and barriers are applicable to the sourcing of other materials used in this sector, such as ABS plastic.

One important aspect to consider is that, while this is starting to become successful in certain countries such as France, other countries in the EU do not have the same system-wide structure or consistent application of the WEEE directive. The opportunity therefore exists to replicate lessons and successes more widely.

4.4 Insights for business guidelines

The core focus of this case study is on the development and implementation of a Circular Sourcing business model pattern for the use of recycled plastic (Polypropylene) in small household appliances. The business model assessment and SWOT analysis in Chapter 3, and the assessment above of key enablers and barriers for the circular business model, provide a real-world example that organisations in similar sectors or in a similar context can draw insights and lessons from.

In particular, the following key insights are important to note:

- System-level collaboration (and, where required, co-investment) is essential to develop effective and at-scale infrastructure for end-of-life collection of products, and the creation of recycling value chains producing high-value material streams for re-use.
- Increasing recycled content for certain plastics such as Polypropylene requires a full and coordinated approach to product design, which can be complex and requires not only changes to internal processes but also close collaboration with suppliers. This is especially important at the initial stages until a breakthrough is achieved and new processes enter 'business as usual'. At the beginning, such initiatives need to be managed like a project and require dedicated attention and responsibility – for example a Project Lead that can work across functions and silos.
- The higher cost of virgin materials is often a key driver for efforts to substitute them with recycled materials. However, the risk of this price advantage being eroded due to price fluctuations and volatility means that the business case for doing so requires a long-term and holistic perspective. For example: creating brand value which can drive customer loyalty and indirect benefits through higher sales; and investing in the use of recycled material as a

long-term hedge against rising virgin material prices. This is particularly important in cases where customers do not explicitly value or understand the use of recycled materials, or don't see this as a significant differentiator when making buying decisions.

- Transitioning Circular Sourcing from a 'breakthrough project' into 'business as usual' requires development of key resources and activities, as well as cultural and behavioural change. This includes design guides and decisions-support tools for product designers; integration into end-to-end product development processes; and embedding into procurement and sourcing processes and supplier relationship management.

4.5 Insights for policy recommendations

This case study demonstrates the success of a PRO-led (Producers Responsibility Organisation) system with the active participation and leadership of members. Having been initiated to comply with EU WEEE regulations, the system-level infrastructure and value chain put in place by the Eco-systèmes PRO in France was critical to the success of Groupe SEB's Circular Sourcing model.

Going forward, EU policy will need to examine and address the following areas:

- **Scaling across geographies.** The sourcing and processing of WEEE-based materials such as plastic into valuable commodities for re-use in high-end products requires scale and flexibility. For example, the ability to meet demand by manufacturers located in one geography with sources of WEEE from multiple geographies needs the ability for waste/materials management companies to collect and flexibly direct material streams. The geographical fragmentation of PRO schemes as well as compliance with waste regulations can be a barrier to this. EU policy could play a role in eliminating barriers and allowing companies and value chains to consolidate and operate seamlessly across geographies.
- **Addressing pricing risk.** The risk of recycled material prices losing their advantage in relation to virgin material prices can be a strong barrier to investment in the necessary R&D and infrastructure needed to scale up the development and use of recycled materials. Even when breakthroughs are achieved, there is a risk that manufacturers could 'flip back' to using the cheaper (virgin) option and suppliers may be left with stranded assets. There may be a potential role for EU policy to address this by creating an even playing field between recycled and virgin materials, and establishing appropriate incentives.

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