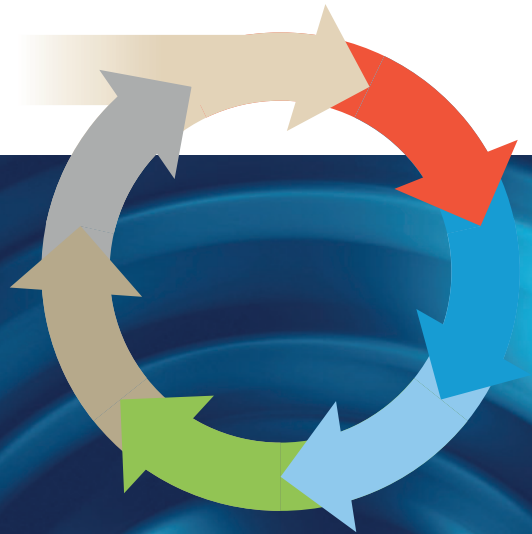


Circular Sweden

– Towards a circular economy



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Summary

Circular Sweden is a business network of ten progressive companies that, together with the Swedish Recycling Industry Association, want to accelerate the development of circular products and material flows. As part of this mission, we have selected four product and material streams with significant climate impact - plastic, textile, construction products and electronics - with the aim is to identify challenges and measures to overcome these, as well as increase recycling and the use of recycled materials in these four categories. For example, every year Sweden uses 1.3 million tons of plastic raw material, 141,100 tons of new textiles, 3.3 million tons of steel, 3 million tons of cement, and nearly 80,000 tons of electronic products.

Our focus within the network on large circular product- and material flows. The jointly agreed objective is to make Sweden a world leader in circular and material flows by 2030, as well as

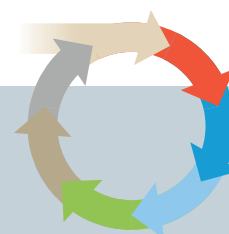
the driving force of this development internationally. By 2040, the goal is a society without any major need for finite raw materials.

This report shows how we within Circular Sweden work together for increased circularity and what goals we have set in our respective operations. With insight from our sustainability officers, we highlight examples of how the work has developed over time, what challenges we encounter and what conditions our companies depend on to continue developing more circular products, processes, services and business models.

At Circular Sweden we take the circular transition very seriously and strive to be forerunners in resource efficiency and climate care. However, achieving profitability in circular business models also requires support from policymakers. These are our six most important policy proposals:

The 6 most important policy proposals

1. Enhancing design for longevity and recycling
2. Reduced VAT & tax on reuse and repairs
3. Minimum levels of recycled material in new products
4. Strengthened systems for information exchange in the value chain
5. Introducing freedom of choice so that companies can refine their waste
6. Enhanced compliance oversight for product and waste legislation



We want these issues to be pursued in Sweden as well as at EU level. If the proposals become policy it will result in a faster and easier transition towards a more sustainable and circular future. By decoupling economic profitability from resource extraction and environmental impact, we can create profits both environmentally, socially, and economically. It's not about making great sacrifices but rather about finding new, smarter, and more efficient ways of using our resources to the greatest possible benefit for society.

The report is primarily aimed at decision-makers in Sweden but may also be of interest to anyone who wants to get an insight into how

Swedish companies tackle the challenge of converting to a circular economy.

Throughout the report you will get to know our member companies through interviews with their sustainability officers, delving into each company's circularity goals and activities. At the end, we present the six most important policy proposals for decision makers with justifications as to why they are needed.

Happy reading!





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There should be a statutory obligation between companies to provide information about chemical content”

Åsa Domeji, Sustainability Manager

Åsa Domeji has held the position of Sustainability Manager at Axfood since 2008 and was awarded “Sustainability Manager of the Year” 2022 by the industry magazine Aktuell Hållbarhet.

Åsa describes how one of her first efforts was to standardize waste sorting in all operations. Instead of each store having separate agreements, the country was divided into six regions where joint procurement is done for retrieval of source-separated waste fractions in each region, where all stores sort out the same fractions and submit reports in a shared IT system.

Packaging is a key issue in circularity and Axfood has, among other things, been driving the development of the sorting and recycling company, Swedish Plastic Recycling, and wishes that more products were covered by the deposit-refund system. They run their own logistics chain to collect plastic wrapping and develop reusable return packaging in a joint industry project together with Axfoundation. Chemical ingredients in packaging is often a challenge and Åsa argues that it is difficult to get information from the suppliers. There should be a

duty to exchange information between companies in the value chain, she believes.

Another important issue is reducing food waste, where Axfood works on several levels. Surplus is donated to charities, sales are arranged for goods with short due date and the company has built several stores for the Matmissionen food bank, pro bono. Åsa believes that the next major step is to cooperate more with the food industry, something she calls “Food waste 2.0”. That is where the big wins can be made, because the loss in stores is only a few percent. By utilizing residual industry flows and ensuring that more food is produced, the losses can be reduced. Åsa mentions some successful examples, such as allowing thinner carrots in the bags and making fishcakes from the “trash fish” bream. Axfood notices that their customers care about circularity issues and often have high expectations on the stores.

Åsa does not believe that customers will have a hard time adapting to new habits such as reusable packaging because of the single-use plastics directive. Or that they would protest against

new types of freezer packaging with minimal color printing. The fact that customers are positive facilitates our circularity work, says Åsa.



Targets and activities

Axfood has three circular targets:

1

Reduced and recyclable plastic

- All packaging must be recyclable by 2025.
- A 25% reduction in plastic usage by 2025.
- Only recycled or renewable packaging material after 2030.
- Remove and reduce the use of disposable items in sales and own operations.
- Work to include more packaging in deposit-refund systems.

2

Halve food waste by 2025

- Improved ordering routines.
- Smart wastage-clearance sales in stores.
- Donate food to charitable causes.
- Adapted packaging for reduced food waste.

3

Sorting at source with many fractions

- Sorting at source with more fractions in many stores and warehouses.
- Shrink and stretch films from shops are returned using own vehicles.

Coca-Cola Europacific Partners



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We should have the right of first refusal on recycled PET material so that bottles can become bottles again!”

Lisa Wahlström,
Country Lead Public Affairs,
Communication, Sustainability

Since 2021, all PET packaging that Coca-Cola Europacific Partners (CCEP) sells in Sweden is made from 100% recycled material. Packaging issues have long been the focus of sustainability work, but have intensified in recent years, says Lisa Wahlström, Head of Sustainability for the past 6 years. It is perhaps not a surprise, as packaging makes up for more than half of the company's climate impact.

After Sweden, markets such as Norway, Iceland and the Netherlands have also converted to 100% recycled PET in its local production, which significantly contributes to achieving the Science Based Target Initiative goal of net zero by 2040. The company works, among other things, with initiatives to remove unnecessary materials, reduce the proportion of fossil material in secondary packaging, and recyclable bottle caps. CCEP also invests in new recycling technology for depolymerization, which is important in order to continue using 100% recycled material without adding anything new.

In the short term, the most important thing is to reduce the amount of new fossil-based materials, and to increase the collection of used packaging to keep the materials in the loop. Sweden has the best collection system in the world, says Lisa, but it can still be improved.

Especially young people don't always understand the importance of returning their drink packaging, and especially when we consume something “on the go”, collection often suffers. In the long run, we need to develop new systems for how we consume drinks, e.g. through refillable solutions. Finally, building systems that change consumer behavior takes longer, and it is important to ensure optimization so that the solutions really become sustainable from a climate and resource perspective.

One important prerequisite for the continued circularity work is to ensure access to recycled material. Today, PET bottles are often used for completely different products when they are recycled. Lisa thinks that the beverage manufacturers should have a right of first refusal on the material they put on the market, so that bottles can become new bottles

rather than clothing or other products. There is also a need for technical specifications that allow the use of 100% recycled material: Returpack have, for example, set requirements for a certain lightness which opposes the high percentage of recycled content. And legislation is needed that advocates rather than hinders innovation. For example, the new packaging regulation should be more flexible in terms of how systems for reusable packaging should be designed, to enable local solutions.

The long-term goal is that all Coca-Cola's packaging types should circulate in closed systems. Lisa believes this is a prerequisite for the survival of the brand and for achieving internal climate goals. But of course, CCEP's work goes beyond merely packaging. For example, the beverage's carbonic acid is produced from residual products from agriculture, and they are currently investigating the possibility of manufacturing sugar from air. Innovation is an important tool on the journey towards the circular transition, says Lisa.



Targets and activities

1 Eliminate of unnecessary material

- Design packaging for recycling.
- Continually optimize packaging through "lightweighting".
- Challenge the relevance of each packaging (including secondary packaging, transport packaging and more).

2 Achieving zero - reduce fossil-based materials

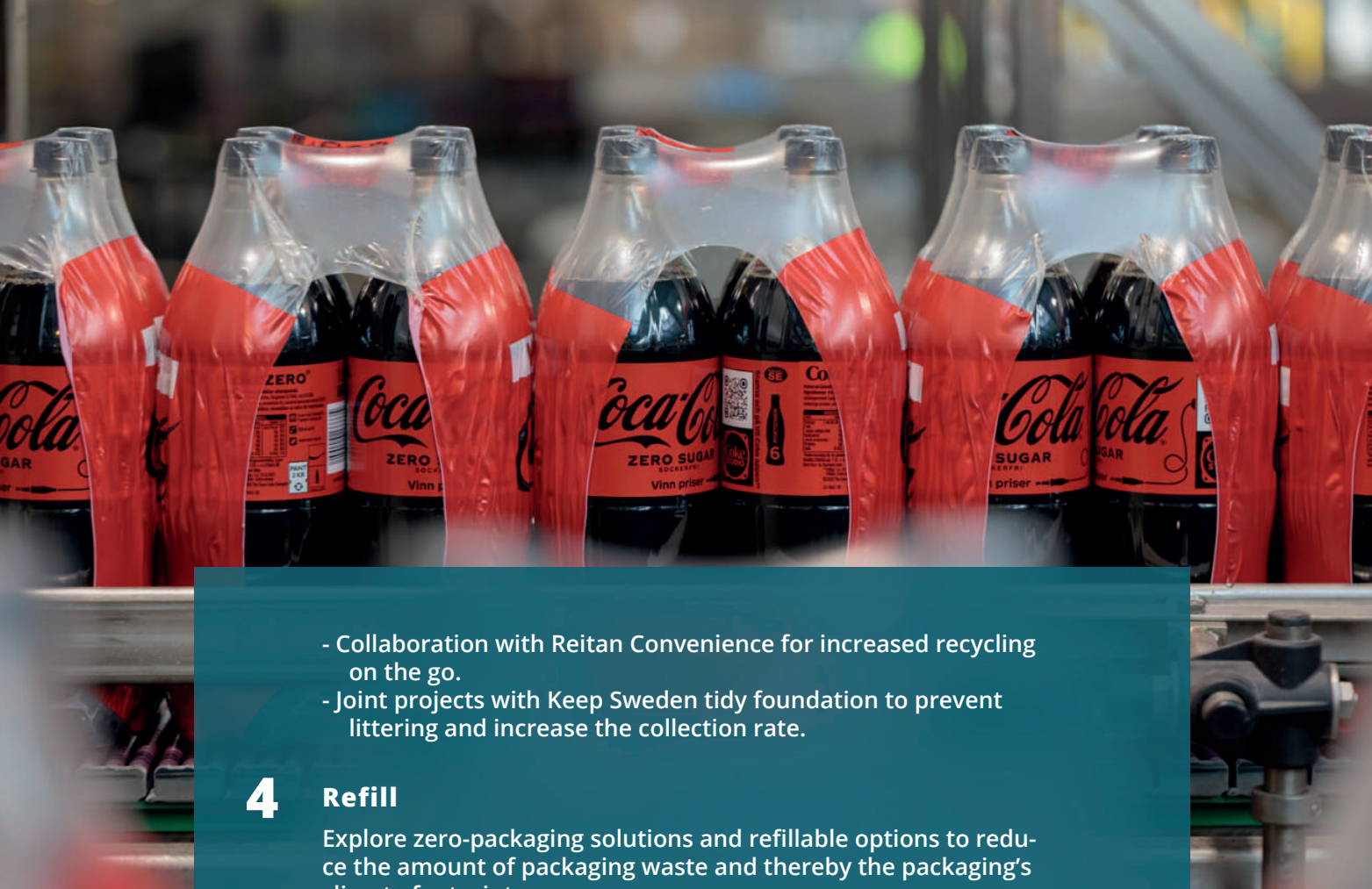
At least 50% of the material in CCEP's PET bottles in all markets must be manufactured from recycled plastic (rPET) by 2023 at the latest. By 2030, all new fossil-based plastics must be replaced with 100% recycled or renewable material.

- During 2020 and 2021, the locally produced Swedish, Norwegian, Icelandic and Dutch PET portfolios changed to rPET.
- Ongoing activities to increase the proportion of recycled material in secondary packaging, such as shrink film for multipack PET. Today, all 4 X 1.5L PET packages are made from 100% recycled plastic.

3 Sell one, collect one

Support well-designed collection systems to ensure 100% of the packaging is collected.

- Use the reach of the brands to encourage everyone to recycle.
- Collaborate with partners and customers to improve accessibility and raise awareness of the importance of collection and recycling. Several pilot projects are currently underway, for example:



- Collaboration with Reitan Convenience for increased recycling on the go.
- Joint projects with Keep Sweden tidy foundation to prevent littering and increase the collection rate.

4 Refill

Explore zero-packaging solutions and refillable options to reduce the amount of packaging waste and thereby the packaging's climate footprint.

- Develop the most durable beverage containers for each market and different occasions of consumption where zero-packaging is launched.
Examples:
 - Carry out pilots together with customers in the Swedish market.
 - Ongoing pilot together with MAX Burgers for new beverage solutions.
 - Support for Burger King to replace disposable cups with multi-use cups in Swedish restaurants.
- Refillable beverage concept at Reitan Convenience and OKQ8 where consumers can use their own beverage containers has been launched.

5 Invest and innovate for the future

To accelerate the development towards a circular economy for packaging, CCEP and The Coca-Cola Company have established an innovation center for packaging, while investing in new technology at partner companies, such as:

- CuRe Technology, who uses depolymerization to recycle low-quality PET to high-quality PET, which can be used in manufacturing of new PET bottles.
- Zero-packaging technologies from Innovative Tap Solutions and Lavish.



”

Electrolux strives for to develop products, services and business models that fit in the circular economy”

Annika Kühner, Sustainability expert

Annika Kühner works as the Sustainability Expert in the Electrolux Nordic sales organization and enjoyed a 37-year tenure at the company. She says that Electrolux was an early adopter of sustainability, including figures in its annual report way back in 1994.

Since then, Electrolux has explored many paths related to circularity. Among other things they ran a refurbishing plant in Motala for 5–6 years and worked a lot with developing and testing transport packaging. Collection and recycling needs to be handled locally, Annika says, because of the challenging transport economy over longer distances. Recycling is another important part that came into focus when producer responsibility, in shape of the WEEE directive, was introduced in the 90s. The Producer responsibility organization El-Kretsen oversees collection, and 90% of the collected material is recycled. Working with resource efficiency is crucial both to reduce the climate impact and to live up to the customers' increasingly high sustainability demands. The largest part of the products' climate impact, around 85%, occurs during use, and energy efficiency is therefore an important part of sustainability work.

But the circularity goal that has the highest priority for Electrolux is to extend the lifespan of

their products. One way to contribute to increased longevity is to give financial incentives for repairs, for example through reduced VAT. Recycled products should perhaps be exempt from both VAT and chemical tax, to avoid double taxation. Measures are needed to help make circular business models more profitable, which is a prerequisite for them to be durable over time. Recycling models bind capital and space (in the form of warehouses) and bring challenging transport economics. But things are going in the right direction. For example, when the WEEE directive was introduced, all products were associated with additional costs. Today, only refrigeration products do not carry their costs for collection and recycling. In addition to financial incentives and new business models, there is also a need for better supervision of existing rules, harmonized legislation and a more resource-focused waste legislation, if circularity is to increase.



Targets and activities

Electrolux has formulated nine pledges that cover all business areas, with the aim of achieving carbon dioxide neutrality by 2030. One of these promises has a particular focus on circularity: Electrolux promises to offer circular solutions and business models. Electrolux has set four circularity targets:

- 1 Increase the lifespan of products, for example by offering service at a fixed price**
- 2 Increase the use of recycled materials both in packaging and in products, with an ambition to reach a share of 50% recycled plastic in products by 2030**
- 3 Develop and launch solutions for reduced quantity of EPS in packaging**
- 4 Develop business models for products as a service**

Below examples of activities and results to offer more circular and resource-efficient products:

- 7,900 tons of recycled plastic were used in 2022's production.
- New fully integrated refrigerators contain 70% plastic from recycled refrigerators in the inner casing.
- New vacuum cleaner series uses a large proportion of 60-75% recycled plastic. The products are not painted, which increases recyclability.
- In 2022, a microplastic filter was launched as an accessory for washing machines that captures up to 90 % of textile fibers.





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We need to help and push the consumers a little more; behavioral change is key!”

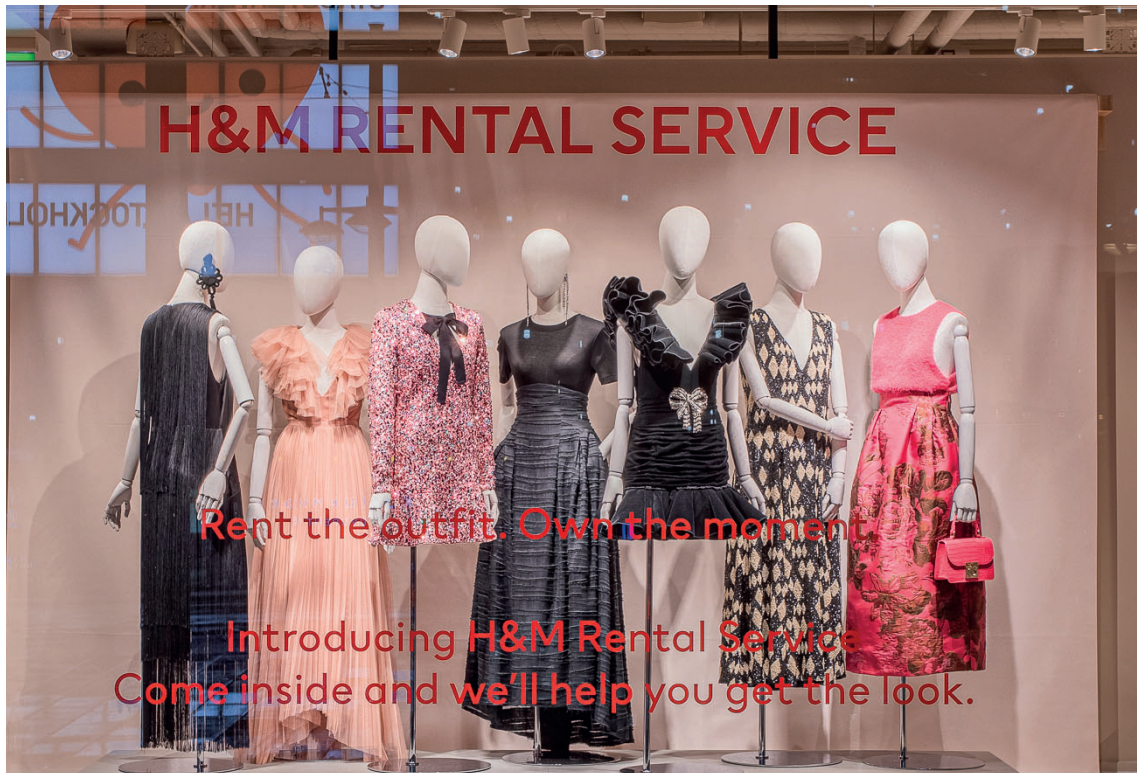
Marcus Hartmann,
Public Affairs & Sustainability
Manager - Region North

H&M has operated an in-store clothes collection since 2013, which was the beginning of their circularity journey. Their Sustainability Manager in Sweden, Marcus Hartmann, believes that society at large has gone from circular to linear and that we are now trying to get back to the circular again.

H&M wants to be part of that movement and lead the transition. An overall goal is to double the financial turnover while halving the climate footprint. From initial collection, they have added several models such as resale in shop, rental offers, repair services, the digital recycling channel Sellpy, etc. Marcus puts extra emphasis on the design guide Circulator, an open tool that shows how to design garments that can be mended, updated and recycled. Reducing the impact on the climate and environment is the most important driving force and there is no simple solution; many different efforts are required, and you must be persistent. One example is rental solutions, which do not work very well on the market right now. Marcus compares them with the first launch of QR codes, arguing that certain phenomena come

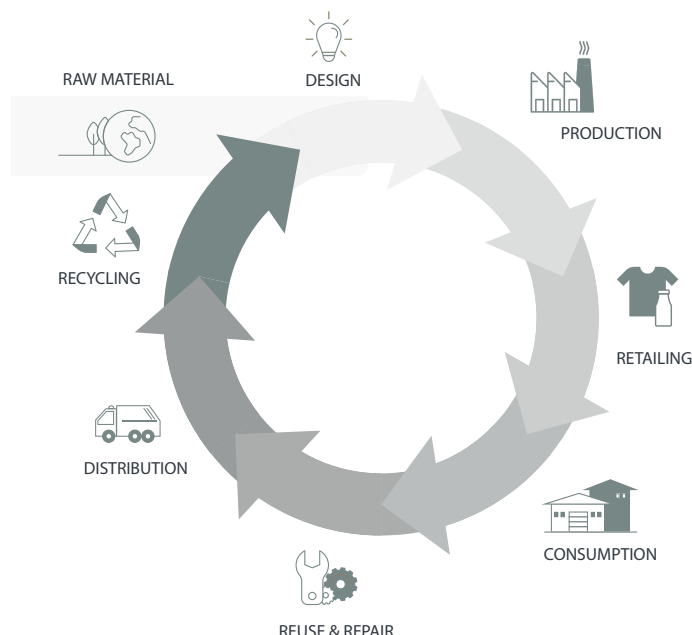
at the wrong point in time and need longer to succeed.

At EU level, a lot is happening on the textile front with a new textile strategy in 2021 and many new legal requirements currently being developed. Marcus alludes to the importance that all initiatives are handled correctly, for example the implementation of a producer responsibility that needs to be harmonized between different member states. The administrative burden on the companies must also be kept on a reasonable level when many new requirements are enforced in a short space of time. Used textiles and other resources must be seen more as an asset, and one needs to be able to move the material across borders to ensure optimal handling. Circular business models may



need economic start-up support to become profitable in the long term, says Marcus and agrees that tax and VAT on all kinds of recycling and repairs should be reduced or abolished. The greatest opportunity with circular business models is to create long-term relationships with customers and the outside world, according to Marcus. The customers are increasingly interested in circular issues, even if fashion, price and

quality are still dominant factors at the time of purchase. We must not forget to communicate with the customer about their behavior, how they should take care of their clothes and how they consume. We can do that together with many other actors in society, such as authorities, municipalities and non-profit organizations.





Targets and activities

1

Only recycled or sustainably produced materials by 2030

A partial goal is that 30% of all materials should be recycled no later than 2025.

Today, 84% of all materials used in H&M products are recycled or more sustainably produced. All H&M's cotton is organic, recycled or purchased through the Better Cotton Initiative.

2

Increased recycling of textiles and packaging

Use of 100% reusable, recyclable or compostable packaging by 2025 – right now H&M achieves 85%.

3

Reduced impact of chemicals in production

- Complete traceability of chemicals used within the production chain until 2030.
- Zero discharge of hazardous chemicals.
- Clean factories – phasing out all MRSL (Manufacturing Restricted Substance List) chemicals and using 100% industrial tools and standards.



Houdini



”

We want to convey the big upside with circular transition through the message “live large with less” to the customers”

Eva Karlsson, CEO

Houdini’s circular journey started in 2001 when they realized they wanted to go from being a burden on the environment and society to becoming part of the solution.

CEO Eva Karlsson has been involved throughout the journey. She tells us that nature’s perfect system is the inspiration and that Houdini sees circularity as a stepping stone to the greater goal of becoming regenerative. In their circular work, Houdini monitors three flows: materials, products and knowledge. The materials are seen as a loan that needs to circulate instead of becoming waste, the flow of products is designed as circular as possible through pure materials and additives that can return to nature and monomaterials that can be recycled. For instance, Houdini phased out PFAS as early as 2018. The products that are not considered circular today are kept in stock for future solutions. “I don’t know of any other company doing that,” says Eva.

Knowledge flows are shared through open source and they also try to inspire customers to a circular use of their products. Transition should be something joyful, only then is there a chance to bring everyone along for the ride. In order to facilitate this, Houdini wants to

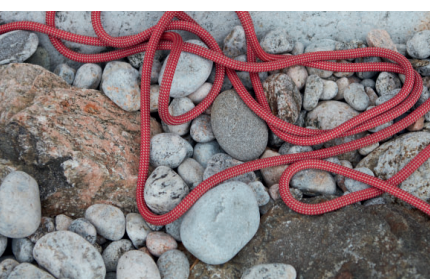
develop a seamless offer to their consumers that includes both purchase, lease, rent and repairs.

And it seems customers are contributing to keeping their clothes alive for a long time. In a user survey carried out in 2018 - 2019, figures suggested that one of the company’s most popular products (Power Houdi) is used on average 1,287 times during its lifetime, which can be compared to 10 times for the average garment in Europe or 160 times globally. The garment is used several times a week, for a variety of activities and over a period of several years, sometimes more than ten years. That fits well with our estimates where repairs are often performed on the garment after many years of use, says Eva.

In order to succeed in the transition, more support for circular business models is also required, as well as strict, scientifically based laws and regulations which should ideally be harmonized globally. Producer responsibility for textiles is a step in the right direction, but

bans on dangerous substances such as PFAS and pesticides are also needed to create clean material flows, says Eva. A major challenge is traceability in the value chain. It often takes time to develop trustful relationships with suppliers and allow them to develop better solutions. Building relationships is one of the

great opportunities with circular business models; to move from transactional to relational interaction with customers as well as suppliers and other actors in the value chain creates the conditions to meet the challenges and solve them together.



Targets and activities

By 2022, Houdini had a target of 100% circular products. This goal was not quite reached, but they achieved around 80-90% and continue the work. In 2019, the formula "Regenerative Lifestyles" was created to describe the company's environmental impact (impact): $P * V + L = I$

$P(\text{design and production}) * V(\text{produced volume/made possible wardrobe}) + L(\text{lifestyle}) = I(\text{impact})$

With this, the 100% target was also reevaluated and a more strategic focus was placed on volumes and lifestyle (V and L). With this formula, Houdini wants to urge the industry and others to address the environmental impact on both nature and culture.

1 Targets by 2030:

The entire Houdini ecosystem, including products, production and consumption, must be sustainable and circular by 2030

- The goal is for circular flows to replace each waste stream, which leads to a 100% phase out of fossil energy and the risk of microfiber leakage.
- Circular flows in the supply chain, including a transition to circular chemistry.
- 20% of Houdini's offer must be regenerative, for example regenerative textile fibers or waste converted to resources from land, sea and air or industrial symbiosis where waste becomes resource.

2 Open source

Houdini consistently follow a single policy to share their sustainability solutions with the outside world, including industry colleagues. An example is the design checklist they use when developing a new product.

3 Products and services that enable circularity and sustainable use

These points are also already practiced consistently and are being scaled up.

- Offer clothing care and repairs
- Offer circular business models such as recycling, leasing, rental and subscription (PaaS)
- Enable recycling



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Circularity isn't solved
behind a laptop: you
have to try new models
in practice”

Reza Shomali,
Country Business Development
and Transformation Manager

Reza has worked in various positions and geographical locations within IKEA since 2006. He believes that sustainability is deeply rooted in the Småland company: saving resources is part of IKEA's DNA.

In more recent times, the first sustainability strategy came in 2012. It wanted to inspire a more sustainable lifestyle and positive impact on society, in line with the company's vision to "create a better everyday life for the masses". In 2018, the strategy was revised towards 2030. IKEA set up very ambitious goals, where the transition to circular operations is one of the biggest challenges. In order to succeed, the whole business needs to transform. For example, the entire product range, 10,000 items, is to be converted to recycled or renewable material. Reza believes that setting high goals provides important motivation: the solutions are not always in place, but the goals drive development forward.

Clear political priorities are needed to accelerate, rather than hinder, the transition. Reza points to two major obstacles that need to be eliminated: the lack of harmonization of regulation, and waste legislation that doesn't see waste flows as resources. To give companies

increased control over their own waste is another important condition. And like several other members of Circular Sweden, Reza thinks that the double taxation on recycled goods through VAT must be removed to increase the profitability of the circular models. Recycling in particular is an area where IKEA takes big steps and develops a lot. It began with the IKEA second hand store at the ReTuna reuse mall in Eskilstuna in 2020. Innovation projects were also conducted together with NSR in Helsingborg and Sysav in Malmö, 2022. Based on these projects, work is currently ongoing to transfer lessons learnt to all department stores and circular stores, while the IKEA second hand store lives on and we explore new circular business opportunities. One lesson is that 90 % of all donated product just needs a light refresh before they can be sold again. Even product categories that were not expected to be sellable are doing great, says Reza, and mentions carpets as an example.

The logistics are still a challenge and a key factor to gain profitability in the circular models. But you have to learn by doing; circularity cannot be solved behind a laptop! In addition to encourage recycling, IKEA also want to focus on towards sales of new products that facilitate a more sustainable lifestyle in customers'

homes. The biggest risk, Reza believes, lies in the fact that we are not quick enough to change. Even within the current uncertain economic environment, you need to continue investing in circularity and future-proof the business. To quote Ingvar Kamprad: "most things are undone!"; we have to be brave and dare to take risks!



Targets and activities

To reach a circular operation by 2030, IKEA has four strategic targets:

1 Enable customers to acquire, care for and pass on products in a circular way

- Circular shops in all department stores that sell used goods and furniture, including those bought back from customers.
- IKEA Second Hand store at ReTuna offers a wide range of second hand products and a testing arena for IKEA within circular business models.
- Flea markets at IKEA car parks around the country were organized in 2022 and also 2023 to let customers buy from each other.

2 Design each product from scratch to enable re-use, refurbishment, remanufacturing and finally recycling

- Mapping of the product range continues to identify the needs for each product area based on our circular design principles.
- The evaluation of the range shows that standardized fittings and spare parts, use of renewable or recycled materials and design for recycling are central to a product's degree of circularity.
- Products with gradually increased circularity are launched continuously according to the roadmap for 2030.

3 To use only renewable and recyclable materials

- Today, approx. 57% of the range is based on renewable material and approx. 17% on recycled material.
- At least 99 % of all wood comes from more sustainable sources, either FSC certified and/or recycled.
- Great progress has been made to increase the proportion of recycled polyester within the textile range.

4

Advocate, collaborate and create business partnerships to promote a circular economy

- In our second hand projects, we collaborate with several actors such as the municipalities, Samhall, Stadsmissionen, etc.
- In our other innovation projects, we collaborate with other companies and are involved in various forums such as Circular Sweden, to drive development forward.





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Circularity will help to challenge our way of thinking. It requires lots of creativity and professional skill!”

Elisabeth Schylander,
Sustainability officer
NCC Building Sweden

The construction industry has long wrestled with the issue of waste and sorting, since it is a large industry with large material flows. The question of which hazardous substances are built into the building stock has also been important. Elisabeth Schylander, who is responsible for sustainability at NCC Building Sweden believes, however, that circularity issues only got on the industry agenda in recent years.

That's when people began to talk seriously about reusing and recycling and generally being more careful and economical with materials. Linking materials to climate impact is key to these questions, because the climate issue has been top priority for a long time. Elisabeth tells us that reuse is the hottest issue within the circularity work right now, with many pilot projects being carried out in the industry. It's about reusing everything from furniture and interiors to windows, doors and heavy elements such as frames and facades. An example of the latter is the innovation project "Återhus", where several actors have tried to reuse heavy building components. Another is "Rymdrum" in Onsala, where 40% reuse was reached in the reconstruction of the visitor center for the space observatory. It is however obvious that the business models are not yet in place. Among other things, logistics is a big challenge, especi-

ally between different actors, but also internally between internal projects. How to price materials correctly, assure product quality and satisfy safety aspects (can guard rails be reused?) are examples of questions that the industry wrestle with.

There are several driving supporting circularity work, according to Elisabeth. The strongest is perhaps customer demands, but environmental certifications such as Miljöbyggnad and the Nordic Swan also move the needle, as well as taxonomy and other upcoming legislation. NCC wants to be a responsible actor and build for the customers who are cutting edge, and even if it requires extra time and resources at the moment, Elisabeth believes that this will pay off in the long run. On the way there, several obstacles need to be cleared. For example, clients need to become more flexible to enable

reuse. Elisabeth would like to see suppliers providing take-back and recycling services, as they have the best knowledge of their own products.

Another challenge is to find solutions for information transfer in the value chain for products and materials, preferably industry-wide ones. And the legislation needs to shift its focus from waste to resources. However, Elisabeth believes that circular business models are here to stay; the companies just need to decide if they want to be leaders or followers in the development. Greater flexibility is generally needed regar-

ding material choices in the future, when for example wood and steel from Russia cannot be taken for granted. Development is often enhanced in difficult situations. For instance, the uncertainty around Cementa's approval for continued extraction resulted in a huge development leap at NCC regarding alternative materials, Elisabeth explains. She emphasizes that more transparency and openness is important to realize circular flows and urges clients and suppliers to be brave and dare to test. That way we can take great development leaps together!

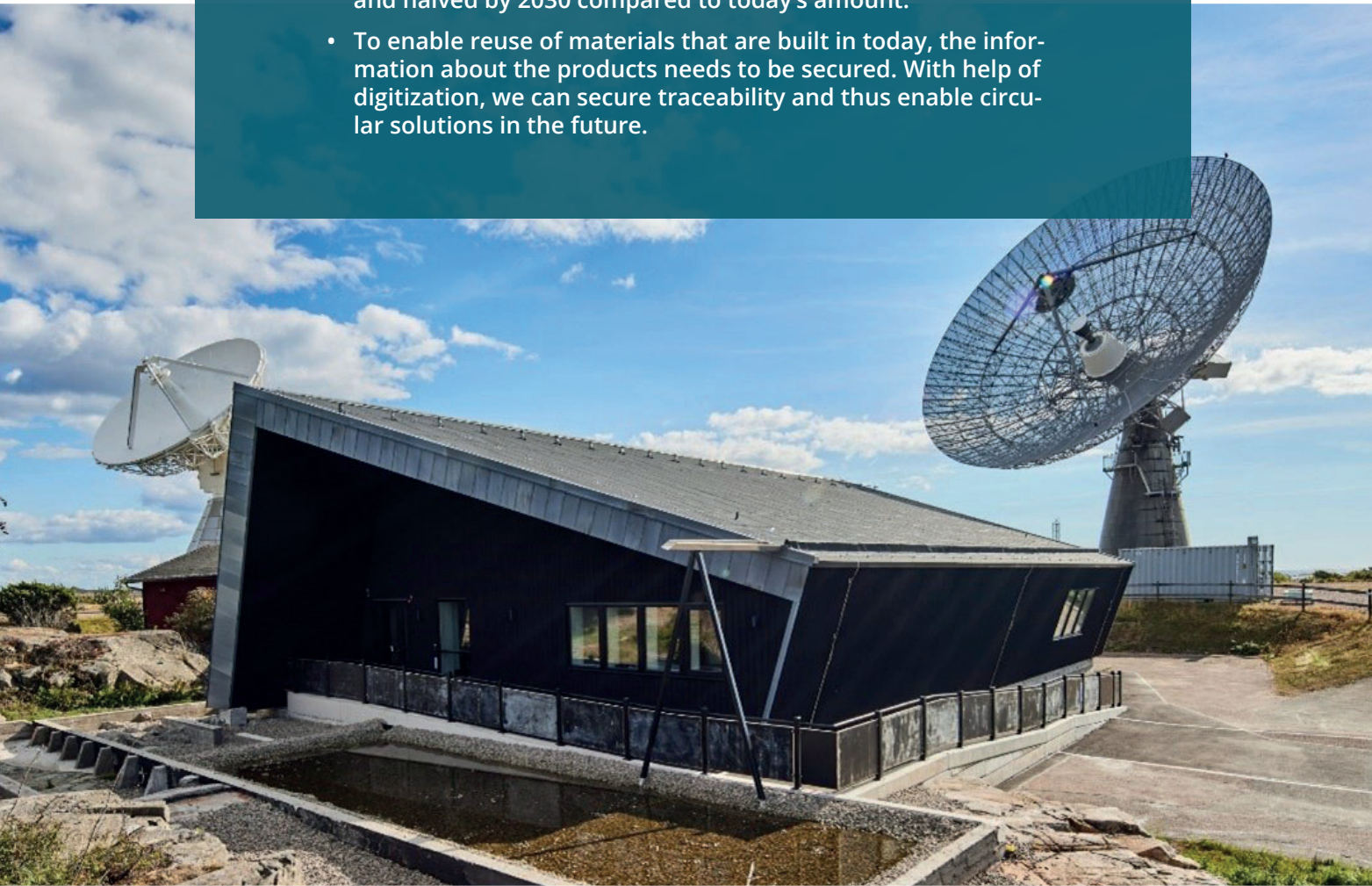


Targets and activities

The overall target is to have circular material flows in all projects by 2045

Circular solutions are an important piece of the puzzle to achieve climate neutrality. To achieve circular material flows, NCC works with the following sub-targets and activities:

- At least 30 % of the plastic delivered to establishments in 2030 must be recycled or renewable and be suitable for recycling.
- The waste within NCC Building must be reduced continuously and halved by 2030 compared to today's amount.
- To enable reuse of materials that are built in today, the information about the products needs to be secured. With help of digitization, we can secure traceability and thus enable circular solutions in the future.



Spendrups Brewery



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To have a high sustainability performance is extremely important for our competitiveness”

Anna Lidström,
Head of Sustainability

The brewing industry has a long tradition of working with circular packaging, says Sustainability Manager Anna Lidström.

An important milestone in the development is the deposit refund system for cans and PET bottles, which has been around for almost 40 years and really is world class: the recycling rate for 2022 was 87%. Another example is the returnable glass bottle that has been around ever since the late 1800s. Recently, Spendrups shifted from plastic to KeelClip paper packaging for their multipacks (see image below). When the entire can range has switched to KeelClip which is estimated to be ready in 2023, 100 tons of plastic will be saved every year.

Making use of residual flows is another important area. Spendrups' brewing processes produce a residual stream called drav, approx. 40,000 tons per year. The majority of this is used in the own energy plant, where it contributes to increasing self-sufficiency of fossil-free energy. Spendrups also uses biogas from the treatment of waste water. The work with circular issues is driven by a combination of environmental concerns and economic benefits; win-win situations are often created where reduced impacts goes hand in hand with lower costs. Right now, a large internal project is underway to map

losses and identify measures. Anna points out that Spendrups is part of the food companies' sustainability manifesto with the goal of halving food waste by 2030. She thinks it is good that there is consensus around goals and ambitions within the industry and that targets are set high.

Globally, the most important prerequisite is joint long-term rules, according to Anna. Investments such as new packaging solutions require large capital and a measure of forward-planning. Harmonized legislation, absence of conflicting requirements, and the availability of recycled materials are all crucial factors. Today recycled PET is more expensive than virgin material because demand is greater than supply. Despite the challenges, Anna sees many possibilities with the circular investments. Spendrups is a family business in the fourth generation and the family has a strong desire to be sustainable long term, both financially, environmentally and socially. Employees and consumers also emphasize the importance of circularity and customers place increasingly high sustainability demands on us, which motivates us to continue driving our sustainability work with full force, Anna concludes.



Targets and activities

1

Increased share of recycled material in packaging

The PET bottles for soft drinks and water contain 50% recycled PET since 2015. In the plastic wrap for multipacks, 100% recycled plastic is used, and Spendrups has shifted to 30 percent recycled plastic around pallets and parcels.

2

100% recyclable packaging by 2025

In 2022, the percentage of recyclable packaging was 99%. The launch of the KeelClip, a cardboard-based holder that replaces the plastic sweep on multipacks, has contributed to increasing the share.

3

Increased recycling rate in the deposit system

In 2022, the recycling rate was 87%. The target is 90% by 2030.

4

Increased degree of self-sufficiency in energy use

Spendrups uses the residual product drav from beer brewing as an energy source in the brewery and biogas from its own sewage treatment. 70% of the drav was used in 2022 and the goal is to reach at least 80%.

5

Halve waste by 2030

Work to reduce wastage is ongoing in the business. Spendrups also donates water and soft drinks with short best before dates to social supermarkets - MatRätt in Gothenburg and Matmissionen in Stockholm.



”

We are one of the world's largest flooring manufacturers with the ambition to greatly increase recycling of old floors”

Dag Duberg,
EMEA ReStart Manager

Tarkett's sustainability journey started in the mid 90s with discussions about the circular society and the challenges surrounding PVC. Tarkett commenced small-scale installation waste recycling in Ronneby and the industry followed with the formation of GBR floor recycling.

Dag Duberg boasts over 20 years of industry experience, with the past 7 years dedicated to serving as a sustainability manager. He explains that Tarkett started talking about circular economy in 2011, and that Tarkett were early to join the Ellen McArthur Foundation. In 2014, the company developed a roadmap to 2020 and the solutions began to be implemented. Ambitious goals were set without really knowing how to achieve them, which was a new way of thinking. Today, there are several techniques for recycling different floor fractions of both plastic and textile. Technology for removing glue and putty residue enables recycling of old plastic floors, not only leftovers from installation. IKEA has been an important partner here, as they have large volumes of homogeneous plastic flooring that is replaced relatively often: approx. 10 – 15 years is a normal use phase. Time is otherwise a particular difficulty. Floors produced before 2010/2011 cannot be recycled because they contain addi-

tives that you don't want to bring back into the loop. Dag tells us that they have developed a calculator that estimates the annual volume of various types of flooring that become obsolete in society.

Floors are not well suited to offer as a rental or leasing service, which can work well for many other products like cars or telephones. It is a significant challenge to retrieve products for recycling; inventory, and in some cases, sample testing are required before tearing out the old floors. Currently, Tarkett relies on property companies, municipalities, and regions to do this on a voluntary basis. The inventory companies need to be better trained in taking inventory and samples for recycling. Dag believes that more rules in public procurement, but perhaps also legislation, are required if larger volumes of flooring are to be recycled in the future. The construction sector has excellent guidelines, but unfortunately they are rarely

followed and large amounts of material go to incineration and landfill.

Working with circularity is a must to remain relevant on the market today, according to Dag. Historically, the main driving force has been to save resources, but in recent years, the climate issue has become paramount. It is however clear that they are connected: raw materials and waste management are the biggest sources of climate emissions in Tarkett's operations. Green electricity alone is not enough, says Dag, we have to work with all parts of

the value chain. In addition to stricter requirements and sanctions, Tarkett also wishes for simpler and less bureaucratic regulations around waste transport and clear end-of-waste criteria. Local authorities today need help to interpret the laws correctly, which is a growing problem in both the EU, Norway and Great Britain, according to Dag. Finally, he wants to urge decision-makers not to mistrust the intentions of profit-making companies, but to take advantage of the great knowledge they have in circular economy: Learn from us; we have circular solutions that really work!



Targets and activities

1

30% recycled materials in production (globally) by 2030

- Collection and recycling of floor installation waste and old plastic floors in the "Restart program".
- The collaboration with Aquafil to make new nylon from yarn from old textile floors.
- Collaboration with RagnSells on recycled calcium carbonate from ashes.

2

Reduce CO₂ emissions by 50% in scope 1 & 2 by 2030 compared to 2019, and by 30% in the entire value chain (scope 1, 2 & 3).

- Targets endorsed by the Science Based Target Initiative



White Arkitekter



”

The architect has a key role in being able to create something attractive and innovative from already existing materials”

Anna Graaf,
Sustainability Manager

Sustainability Manager Anna Graaf has worked at White since 2001. She says that resource management has been an important issue in the construction sector for many years, but that it has gained a completely different focus and weight now that the industry has to reduce its climate footprint and change to more circular material flows.

White's starting point in their assignments is to primarily reuse and recycle as much as possible, whether it concerns housing blocks, materials or furniture. Additionally, they strive but also to optimize material use and ensure that structures can be dismantled and rebuilt. It is also important to review the needs and use of premises. Many companies today have large unused office spaces, but there are plenty opportunities of joint premise use available. The Lumi office building in Uppsala showcases the fact that renovating, reusing and adding to an existing property instead of demolishing and building a new one can save both construction time, money and lower the climate impact.

The interior design and furniture industry lead the construction sector in terms of circularity, Anna believes. White's interior designers have pursued the concept with great commitment

for over 10 years and participated in an early research project about circular furniture flows. A current example is a redevelopment at the psychiatric quarter in Borås. The customer was initially skeptical about reusing the existing furniture, but after White's interior designers developed a design concept where the furniture was painted and reupholstered in a uniform expression, it resulted in 75 % of the furniture being reused!

Anna tells us that circular architecture has been a priority area in the company's R&D investment for many years. Five years ago, White introduced a "Transformation & Circularity" knowledge network to put extra focus on the development in circular architecture. For example, they have developed a reuse methodology for architects and digital tools to facilitate inventory and planning. White has also been

involved in building the Center for Circular Construction (CCBUILD) which, among other things, has developed a digital marketplace for recycled products.

There is a great commitment in the industry and a lot has happened in the market only during the last two years. Property owners start setting targets for circular economy, the EU's green taxonomy sets requirements and the new version of the Miljöbyggnad certification system has a higher focus on circularity issues.

But there are several knots in the chain to untie according to Anna. Both new services and companies are needed to speed up recycling, for examples for handling materials, sales, logistics and storage. To be able to recycle materials into new products new production methods are often needed, and positive business cases are needed at different points in the chain.

Anna believes that the entire planning and construction process needs to be adjusted towards circular thinking, including everything from design, production, procurement to business models. In addition, detailed development plans need to be more flexible to enable both conservation and reuse. There are examples where building permits have been stopped because the exact color of the facade or size of the windows have not been reported, which can be difficult if you use recycled material. If the construction sector continues to work in this way, change will be very slow.

Anna believes that financial incentives are important, such as lower VAT on renovations and recycled materials. Laws that drive an increased share of recycled raw materials are also crucial. As long as new materials are cheaper than working with reuse and recycling, there will be obstacles to scaling the circular transition.



Targets and activities

1

The overarching target by 2027 is for the climate impact of materials in our building assignments to be 30% lower on average than in 2023*

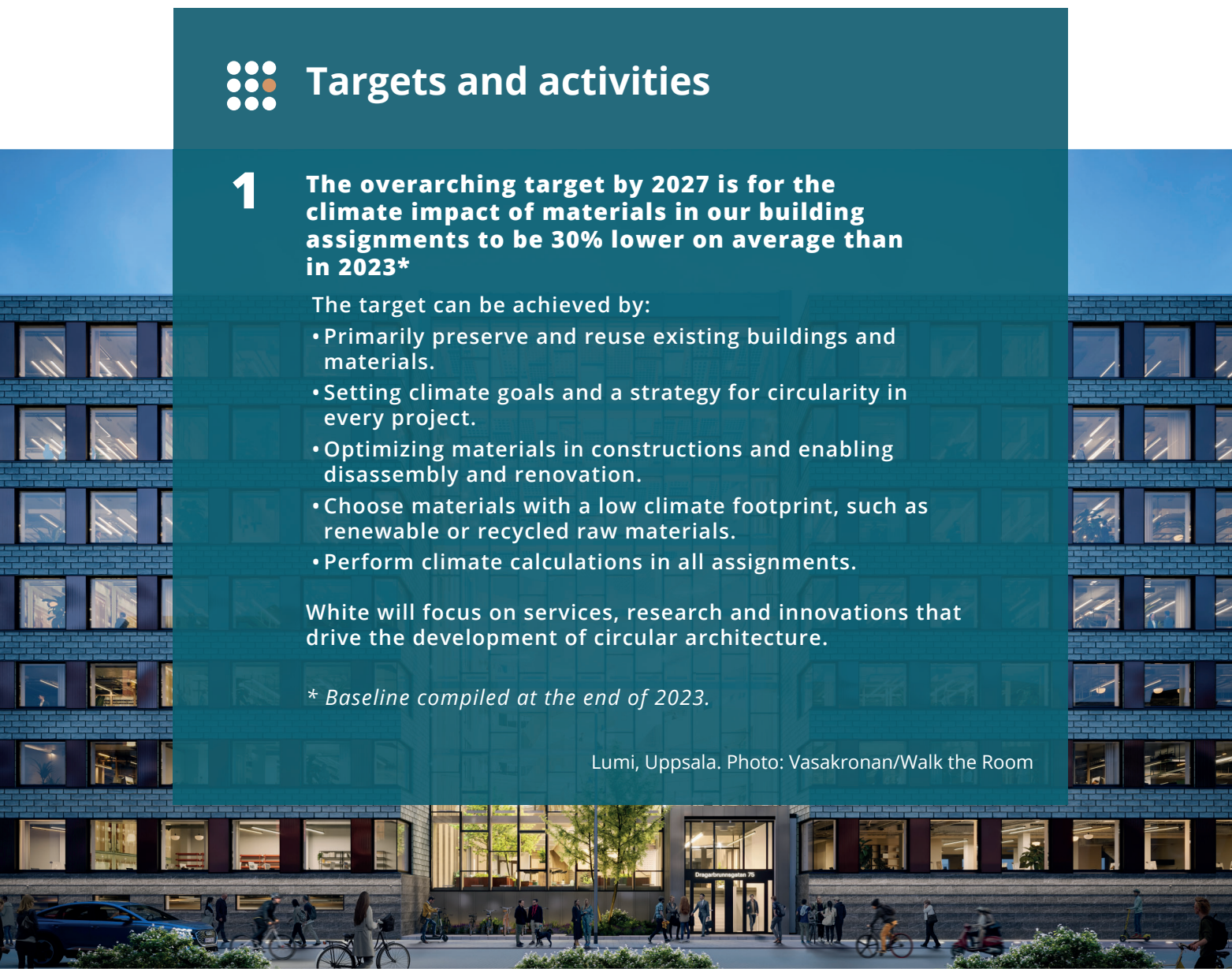
The target can be achieved by:

- Primarily preserve and reuse existing buildings and materials.
- Setting climate goals and a strategy for circularity in every project.
- Optimizing materials in constructions and enabling disassembly and renovation.
- Choose materials with a low climate footprint, such as renewable or recycled raw materials.
- Perform climate calculations in all assignments.

White will focus on services, research and innovations that drive the development of circular architecture.

** Baseline compiled at the end of 2023.*

Lumi, Uppsala. Photo: Vasakronan/Walk the Room



Swedish Recycling Industries' Association



”

The Swedish recycling industry is a growing and jobcreating sector with world-unique technologies that offer solutions for several major societal challenges!”

Ellen Einebrant, CEO

The recycling sectors were founded in 2014 because the industry saw a need to influence politics and pursue common issues.

CEO Ellen Einebrant believes that the subject has never been hotter than now: the whole society takes an interest in recycling issues today, not least within the EU, where new requirements are formulated all the time. Recycling and resource efficiency are also strongly linked to raw material supply and security policy, which are high on the agenda at the moment.

The organization's most important driving forces are to enable increased recycling and use of recycled materials, to influence and create better regulations, and work towards an open market with healthy competition. They want to see more transformational regulations that require increased sorting, recycling and reuse. Minimum levels of recycled content in new products is also a key issue to create more circular flows.

We want to communicate the greater role that recyclers have today, says Ellen. They can help with everything from recycling design and what is possible to circulate, to sampling materials to

ensure that nothing inappropriate stays in the loops.

We also want to encourage producers to dare to test recycled material - there is much to gain from that. Sweden is far ahead and has several world-unique technologies, for example recycling of salts and phosphorus from fly ash (Ragnsell's Ash-to-salt & Ash-to-phos), recycling of cellulose-based textiles into new viscose pulp (Renewcell) and large-scale recycling of lithium-ion batteries (Stena Recycling). These techniques also have a large export potential to other countries. EU's new waste- and sustainable products regulations drive the development, but Ellen also sees risks in the flows becoming too controlled; it must not create too high barriers for new actors to enter the market. Otherwise the greatest risk is that the circular transition is too slow and that too few incentives are created. We need to act now if we are to solve our challenges!



Targets and activities

1

Increased collection, sorting and technology development to maximize resource-efficiency and high-quality material recycling in 2040

Activities

- Currently, there is great potential in both the collection, sorting and material recycling stages. It is still difficult to collect, sort and circulate the materials that lack market demand.
- Develop new technical solutions and offers that make recycled material more available while enabling increased demand.
- Develop strategies for increased sorting and high-quality material recycling for a range of relevant materials with objectives for the years 2025, 2030 and 2040.

Conditions

New political tools that increase the incentives to use recycled raw materials.

2

New standards to enable increased use of recycled material (drawn up in collaboration with various industries) by 2025

Currently, there are a number of standards for recycled material, but more need to be developed and the application needs to be more extensive in order to facilitate circular material flows.

Activities

Develop new standards for recycled materials together with different industries.

Conditions

A widespread demand and interest in developing and using recycled material standards among industry players, beyond recycling companies.

3

Increased use of construction materials

Today, large quantities of soil and excavated material are sent to landfill, instead of being recycled in local construction. The market for crushed material from construction and demolition is still unpredictable, which makes it difficult to increase the use of recycled quality-assured raw material.

Activities

- Develop circular business models for increased reuse and recycling of excavated materials, construction and demolition material.
- Develop a method to measure the climate benefits of reusing and recycling excavated materials.
- Expand cooperation with authorities to increase the recycling of excavated material at a regional level.

Conditions

Clarified rules for the classification of waste to increase the reuse and recycling of excavated, construction and demolition material, especially concerning what should not be classified as waste.

Customer requirements need to harmonize with standards.



Key points for decision makers

We at Circular Sweden will deliver on our highly set circular goals, but only if decision-makers contribute to creating the right conditions. Some changes we want to see are:



Enhancing design for longevity and recycling

A more efficient use of resources can significantly limit our climate and environmental impact. Therefore, stricter requirements must be imposed on products designed with a longer lifespan, for example by being easy to upgrade and repair. They must also be designed in a way that enables material recycling when they are ready to be discarded.



Reduced VAT & tax on recycling and repairs

Waste must be seen as a resource for reuse and recycling. Double taxation through VAT each time products are sold on the market creates few financial incentives for recycling. Simplify and improve the Swedish VAT rules for the sale of used goods by removing VAT on recycled goods and reduce tax and VAT on repairs.



Introduce minimum levels of recycled material in new products

There is great potential for emission reductions through increased use of recycled material. For certain materials, we can save up to 95% carbon dioxide by using recycled material instead of new. In order to ensure market demand for recycled raw materials, we call for an EU legislation that requires minimum levels of recycled material in new products. Requirements for recycled content in new products can drive collection, increase demand and make recycled materials more competitive. This is particularly important for materials where recycling is not profitable, such as for plastics and critical raw materials.



Enhanced information exchange systems in the value chain

In order to circulate products and materials in a safe manner, extensive information about what products contain is needed. The composition of the product and content of harmful substances are two aspects that affect the recyclability. The introduction of product passports at EU level will support more efficient product recycling. As companies, we want to be involved in the design of product together in dialogue with decision-makers and actors throughout the value chain.



Introducing 'freedom of choice' so that companies can refine their waste

Large climate and environmental gains can be made if businesses are given the opportunity to choose waste collectors through the introduction of so-called freedom of choice¹. It would enable better management and ensure long-term investments in circular solutions.



Enhanced compliance oversight for product and waste legislation

Significant environmental benefits can be achieved by ensuring greater adherence to existing legislation, including producer responsibility and sorting requirements. Strengthening supervision and holding accountable those who fail to fulfill their responsibilities more consistently are essential steps to realize these environmental gains. It should not be profitable to ignore the legislation!



1) SOU 2021:24 Äga avfall – en del av den cirkulära ekonomin