Sustainability report

Improving resource efficiency and circulation of plastic

Rani

Smart ***packaging solutions***

Smart **packaging solutions**

Welcome to our Sustainability Report

In this report, we explain measures we are taking to minimise Rani Plast's and our customers' impact on the environment and how we are further strengthening our own practices. We have organised our thoughts into three sections, describing what we do, providing some key facts and figures on plastic in general and outlining our sustainability strategy.

Foreword

It is very hard to imagine life without packaging. It is everywhere and is fundamental to our existence and lifestyle. Packaging serves to contain, protect, transport and preserve. It maintains the quality of products over extended periods and significantly reduces transport costs, in turn reducing negative effects on the economy and environment.

Close to 350 million tons of plastic are produced annually worldwide. In Europe only a third of it is recycled. Plastic is still, in many cases, unbeatable compared to other packaging materials and in many cases the most environmentally friendly choice.

Rani Plast has for decades taken several steps to become a more environmentally sustainable company. This report contains many examples of how we have achieved this. Despite these measures, it is clear we need to continue to work closely with our suppliers and clients to minimise our environmental impact.

Through investment in R&D, new efficient production lines and new skills, we seek to generate new thinking and identify practical solutions enabling our clients to optimise the use of our products, to explore more efficient and sustainable packaging alternatives and to improve the recycling of plastic.

As a well-established family business, we can make fast investment decisions to support sustainability. We believe that economic growth and environmental sustainability are compatible; our business growth is necessary to provide capital and innovation for long-term sustainability.

In the end, sustainability is about meeting the needs of today without compromising the future, i.e. minimising our environmental impact while maintaining high quality products and services.

We invite you to follow us on social media and check out our website for more up-to-date information about our sustainable development.

Jari Palosaari
Chief Executive Officer
Ab Rani Plast Oy

> We are proud and willing to contribute our time, effort and skills in making Rani Plast an even more environmentally sustainable company


Our Story

Nordic leader in advanced packaging solutions

Rani Plast is the leading Nordic producer of advanced packaging solutions with nine factories in five countries including Finland, Sweden, Russia, Ukraine and Slovakia, exporting packaging film to more than 50 countries worldwide.

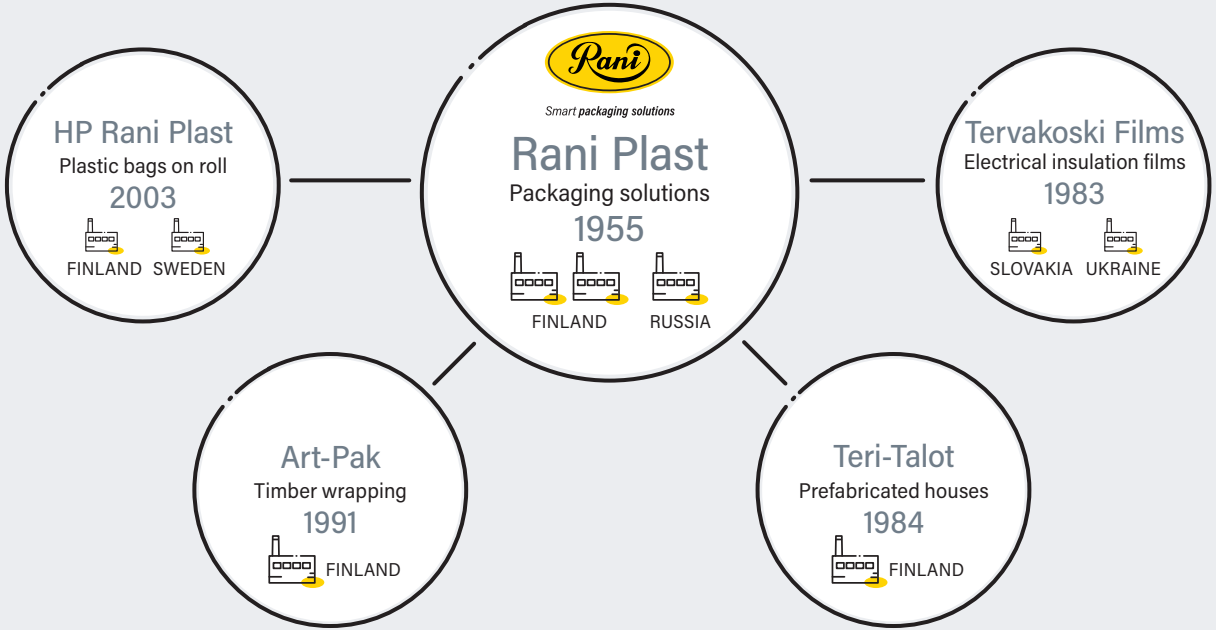
Still very much a family run business with close customer relations among its core values, Rani Plast has a turnover of more than 250 million Euros and continues to manufacture most of its plastic film in Terjärv, Finland, where the company was founded in 1955. Rani Plast offers a wide range of products from primary and secondary packaging to special agricultural films.

Our modern production facility in Terjärv is a local landmark

Owners, Mikael & Ulrika Ahlbäck would like to see a long-term, fact-based discussion on the use of plastic as packaging material

The company operates an advanced sustainability programme and is constantly developing improved methods of manufacture by using renewable raw material and promoting recycling, waste reduction and energy efficient production.

Rani Group



+ 250 M€
in turnover

50
export countries

+ 120 000
tons in volume

1 000
employees

+ 60
film blowing lines
10 printing lines,
35 welding lines

9
factories in 5 countries

Our three business areas

Industry & converting

Wholesale, food & beverage

Agriculture

Our values

The company was founded by entrepreneur Nils Ahlbäck in 1955 and continues to employ the same personal and entrepreneurial mindset. Our core values - Rani's strong family business approach; a service minded attitude to business and the importance of taking responsibility for what we do define our way of thinking in business. It is important that each employee at Rani Plast acts responsibly, caring for the business, the customer and the environment.

By employing our core values in our daily work, we are confident that the company will remain profitable and secure the future of Rani Plast.

Hans Brinks,
Technical Sales Manager at Rani Plast

The Rani family

We develop honest and open relationships
We are easy to approach
We care about our employees and customers
We have a strong family business approach
We are proud of the company

Service minded

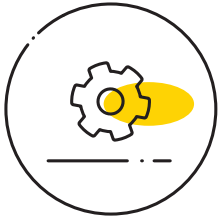
We are engaged and passionate about what we do
Our approach is professional and personal
We are flexible and pro-active in our mindset
We are always ready to go the extra mile

Responsible

We are a trustworthy business partner
We take responsibility for our actions
We care about the environment


Towards circular economy

The plastic facts



359 million tons of plastic produced in 2018 globally

Only 4–5% of the annual oil production in the world is used to produce plastic

Europe contributes 17% of annual production and produce 62 million tons of plastic annually

The plastic industry provides employment to more than 1,6M people

Close to 60,000 companies operate in the plastic industry

Plastic industry turn-over was 360 billion euros in 2018

Over 9,4 million tons of plastic waste were collected for recycling in Europe in 2018

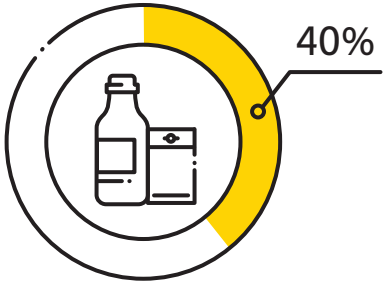
SOURCE: PLASTIC EUROPE, PLASTIC – THE FACTS 2019

> The global plastics industry employs more than 1.6m people in 60,000 companies turning over €360 billion. 9.4 million tons of plastic were recycled in Europe in 2018

Saving the environment does not mean getting rid of all packaging plastic

Plastic packaging does more than keep our food fresh on the shelves. Even though the world's plastic production reached 350 million tonnes in 2017 and the use of plastic has increased rapidly since 1960, it has become an essential part of everyday life. In everything including communications, construction, medicine, food and beverage and the farming industry, it has become invaluable due to its unique combination of light weight, durability, protective and other intrinsic properties.

Plastic is mainly a bi-product of various fossil fuels and its production requires low levels of energy. Plastic packaging is more flexible and lighter than alternatives such as glass or cardboard and reduces transportation costs and the carbon footprint attributed to it.



Plastic packaging represents almost 39% of the European plastic market and is an important part of our daily lives

Plastic offers consumers longer food product durability and generates less food waste. Only 3% of food in Europe is wasted due to its plastic packaging. This compares with 40% waste in developing countries, where the quality of packaging plastic does not meet European standards. For example, just 1.5 grams of thin plastic film can keep a cucumber fresh for 14 days, compared to three days with no wrapping.

> 1.5 grams of thin plastic film can keep a cucumber fresh for 14 days, compared to three days with no wrapping

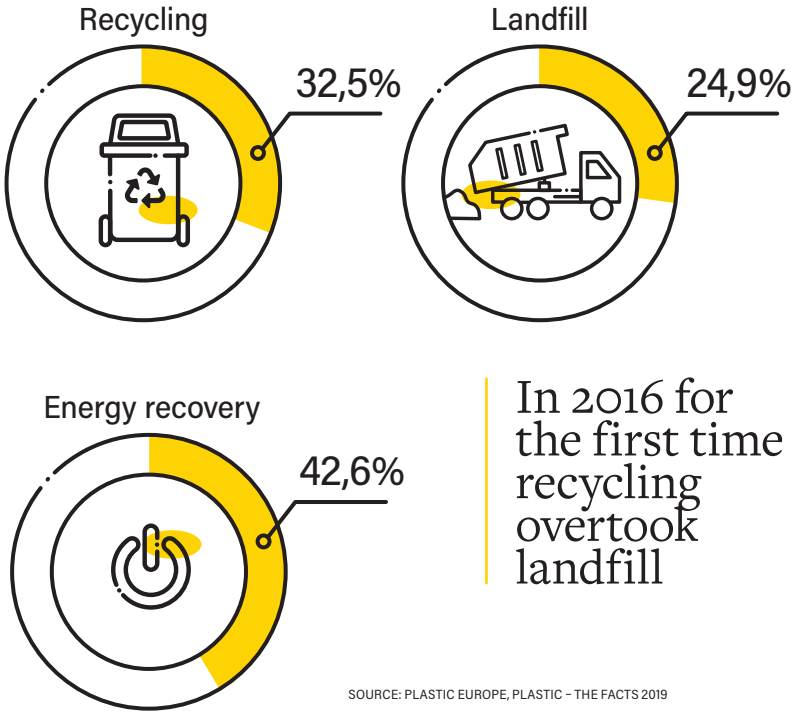
Main advantages of plastic

More durable food, and less food waste

Less transportation costs result in reduced CO_2 emissions

Light weight, protective and easily shaped material

Effective reuse and recycling reduce use of natural resources during production



SOURCE: PLASTIC EUROPE, PLASTIC – THE FACTS 2019

In 2016 for the first time recycling overtook landfill

Correct use, recycling and re-use of plastic is fundamental in securing a more sustainable environment. Today, only 30% of the total plastic consumed in Europe is being recycled and only 14% is being collected for recycling globally. Each year, USD 80-120 billion worth of plastic packaging material is lost to the economy. On the positive side, the volume of plastic waste collected for recycling has increased by 79%, energy recovery by 61% and landfill has decreased by 43%. In 2016, for the first time in history, more plastic waste was recycled than landfilled.

The main challenges associated with recycling and reuse of plastic

- Unstable product quality
- Unsuitability for food & beverage products
- Low optical performance
- Unfavorable smell in production
- Lower technical performance

From linear to circular economy

The current discussion on plastic has made consumers more aware of the challenges associated with plastic and everyone should favour smart consumption and life cycle thinking when it comes to plastic. The EU has decided to reduce the use of disposable plastic products such as plastic straws, cotton buds and take-away lids.

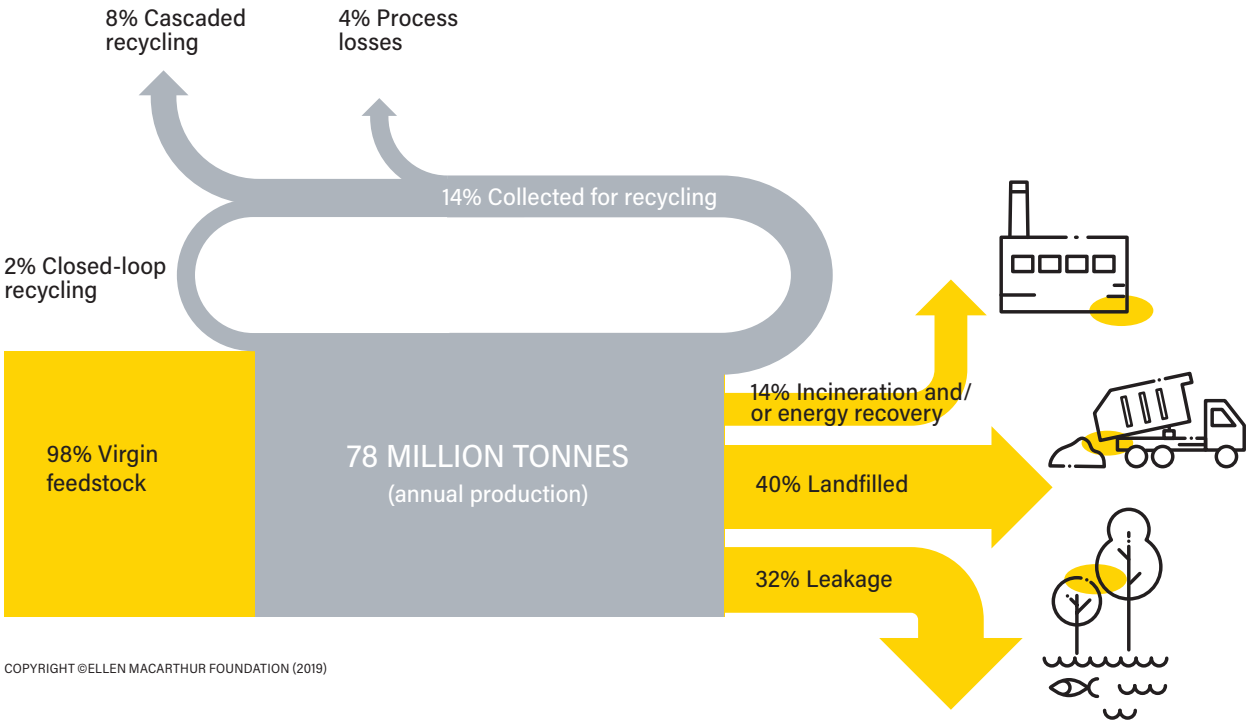
In order to reduce the negative environmental impact of plastic, the world needs to move away from an unsustainable and linear consumption pattern to a circular economy, as presented by The Ellen MacArthur Foundation (founded in 2010), which works with business, government and academia to build a framework for an economy that is restorative and regenerative by design.

The EU´s objective is for all packaging plastic to be reusable or recyclable in a cost effective manner by 2030.

Putting a stop to the single-use culture is a step in the right direction, but even more important is to develop the plastic recycling ecosystem in the long term.

> Plastic packaging represents almost 40% of the European plastic market and is an important part of our daily lives. Therefore, it is critical to understand that packaging is not only practical but also an indispensable protection for products

For further information visit:
www.ellenmacarthurfoundation.org



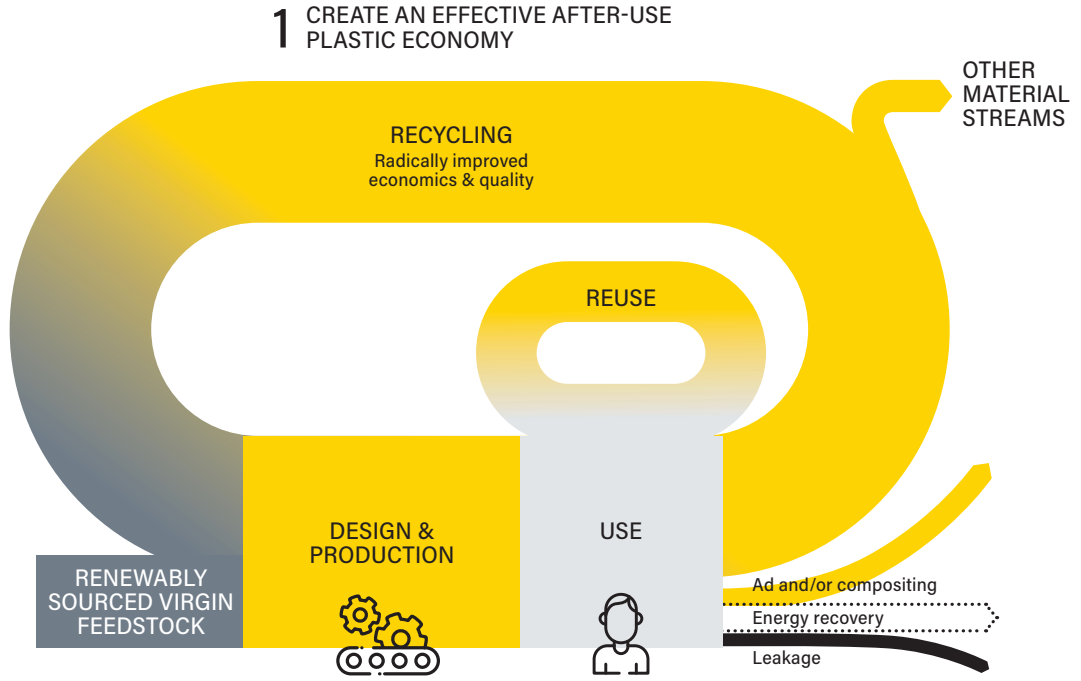
Linear economy

Linear economy is a traditional economy model based on a 'take-make-consume-throwaway' approach to resources. The raw materials are used to make a product, which is thrown away once used, ending up in the natural environment. This is especially the case in emerging markets.

Circular economy

Circular economy is an economy in which the value of products, materials and resources is maintained in the economy for as long as possible, and the generation of waste minimised. In a new plastic's economy, plastic never becomes waste or pollution. The circular economy is based on three main principles:

- Eliminate all problematic and unnecessary plastic items.
- Innovate to ensure that the plastics we do need are reusable, recyclable, or compostable.
- Circulate all the plastic items we use to keep them in the economy and out of the environment.



Sustainable development

Helping customers reduce their environmental impact by offering more sustainable products

While plastic packaging is an integral part of the global economy and delivers many benefits, our customers are increasingly demanding more sustainable products manufactured with the least environmental impact possible. To achieve this, they rely on their suppliers to make significant changes to their products and processes.

Rani Plast, the leading Nordic producer of advanced packaging solutions, operates responsibly and ethically throughout the value chain. Every one of our clients has an impact on the environment and we can help them shape that impact by offering more resource efficient and sustainable products. We have already taken several steps in the right direction. Acknowledging our role in the circular economy and sustainability is one of our main strategic corner stones and is reflected in our core values.

Our sustainability strategy captures our vision of how we can build a better world together with our suppliers and customers by 2021. Our ambitious goals include practical solutions from product development and resource efficiency to increased recycling of plastic.

Helping customers reduce the impact on the environment

Exploring new sustainable packaging solutions for the agricultural and industrial markets

- Investing in R&D and new production lines to develop more sustainable packaging in close cooperation with key industry and agricultural partners.

Identifying new products and production processes that support circular economy

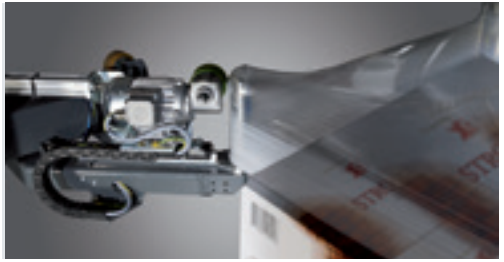
- Constantly renewing our product offering with more sustainable material alternatives
- Reducing production waste and maintaining a nearly 100% re-use rate on waste
- Ensuring full production readiness to use biobased plastic in our products
- Optimising production and usage of energy resources (raw material, energy and water) through lean manufacturing

Supporting the circular economy is key to reducing plastic's impact on the environment

Helping customers reduce the impact on the environment

Providing the optimal raw material base to suit customer and product needs

- By using biobased, recycled, virgin or a mix of these raw materials



Helping customers optimise the use of packaging material

- Providing information on the key advantages of plastic and how to recycle our products properly
- Supporting our customer in selecting the optimal packaging material alternatives to enhance circular thinking

Measuring our environmental impact

- Conducting Regular Life Cycle Assessments (LCA) to identify, measure and evaluate the energy and material flows in production and to determine and calculate the overall LCA for our products.
- Complying with requirements of the ISO-14001:2015 environmental management system

We support circular economy

We have taken a number of steps to minimise waste and make the most of our resources. This has been accomplished through close teamwork between product development and production and listening to our customers about their evolving needs.

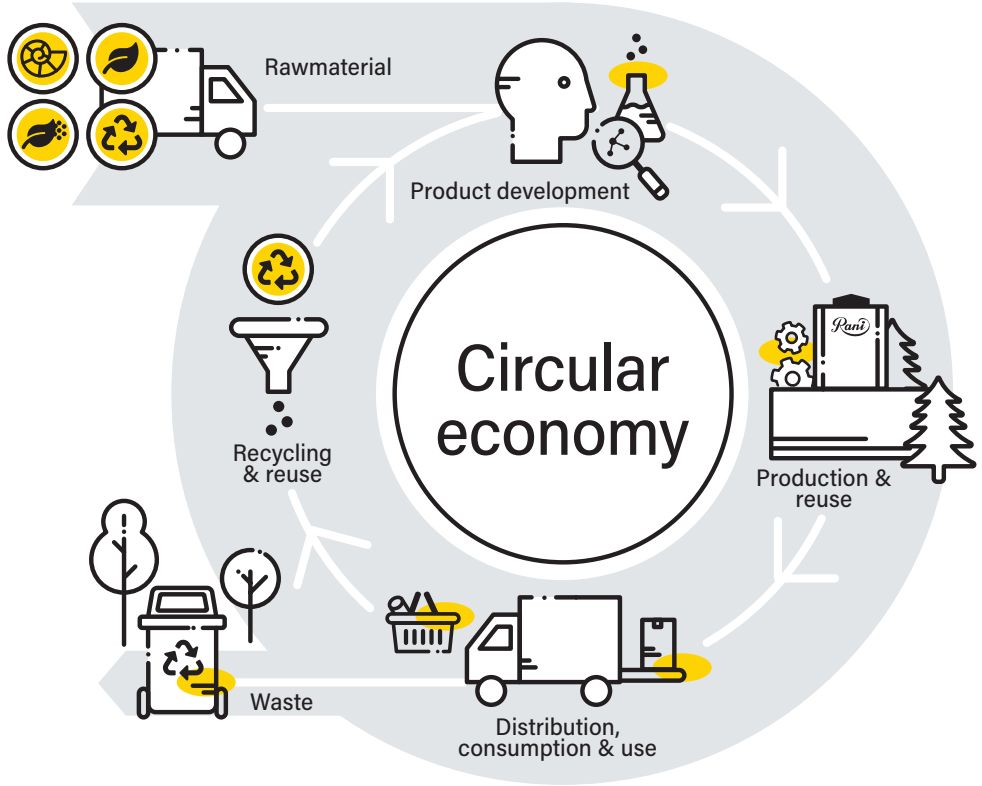
Plastic raw material alternatives

Fossil based

Biobased

Biodegradable

Recycled



Raw materials

The selection of raw material will still be mainly based on fossil materials with the share of recyclable raw material increasing significantly in coming years. The use of bioplastics will increase when they become a more economical, technical and environmentally friendly alternative.

We are constantly researching new material options for plastic film made out of renewable resources or raw material such as plant or wood and are ready to produce bioplastic products.

I'm green™

Products containing biobased content based upon Braskem's Green PE polyethylene can be marked with the slogan "I'm Green".

Plastic manufacturing only consumes 4% of the fossil oil and gas used in Europe and producing a plastic bag consumes only 3% of the fresh water necessary to produce a paper bag

Fossil raw material

(also referred to as virgin material) are hydrocarbon compounds formed through the natural process of anaerobic decomposition over many years – up to millions of years. The main fossil fuels are oil, coal and natural gas. Their use has raised environmental concerns due to the rate of carbon emission into the atmosphere, which is too high to be eliminated by natural processes. Fossil based materials will become more expensive and shorter in supply, due to the increased population growth and raw material demand in the emerging countries in Asia.

Renewable raw materials

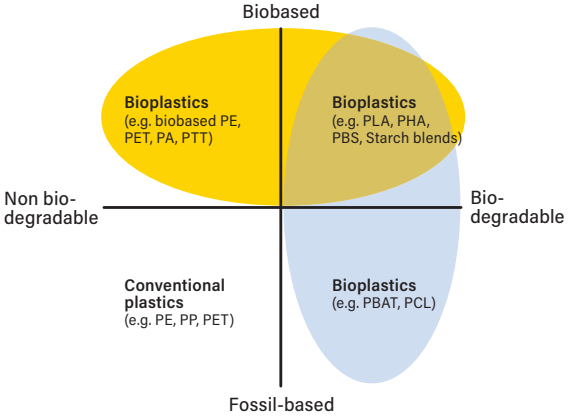
(also referred to as biobased material) such as plants and trees will create promising future markets. Their usage, production and disposal are less toxic and energy demanding, although their availability for plastic manufacturing might be challenged by the high demand for bioenergy and biofuel. The most likely scenario is a mix of fossil based and renewable raw material.

Bioplastics

Today bioplastics represent about 1% of the 350 million tonnes of plastic produced annually worldwide. The use of bioplastics is predicted to grow by 50% by 2021. According to the European Bioplastic Association, a plastic material is defined as a bioplastic if it is either:

1. Biobased plastic based on renewable resources such as sugar cane, cellulose or corn.
2. Biodegradable plastic that may be produced from fossil oil, corn or sugar, but meets all the criteria of scientifically recognised norms for biodegradability and compostability of plastic and plastic products.
3. A mix of above components.

Material coordinate system of bioplastics



SOURCE: FACT SHEET, EUROPEAN BIOPLASTIC ORGANIZATION

We began using biobased granulates in our film production in 2015. Today, we have 100% capability to use biobased raw material in our films to meet evolving customer demand.

Bioplastic is often put forward as the solution to plastic that ends up as litter in the environment. However, despite the materials being renewable, bioplastic itself is not automatically biodegradable. Although bioplastics sounds green, the material is usually not biodegradable and a biobased plastic bag discarded in the environment acts in the same way as a plastic bag made of fossil oil: it does not decompose over a few years.

Experts still regard some biodegradable plastics as challenging because the decomposition process is difficult to control and the material does not decompose fast enough to be used as organic waste. Unfortunately, biodegradable plastic cannot be recycled with normal plastic waste as it might spoil the recycling process.

Shaping the way we work

Our product development department supports our customers to find alternative material solutions, optimising the use of our products and ensuring that our product offering is nearly 100% recyclable.

Down gauging – or making plastic film thinner

Our current films have a thickness of between 0,01mm and 0,27 mm and new blowing techniques enable us to make them even thinner, but with improved mechanical properties. We have taken several steps to reduce the amount of raw material needed, which results in a reduction in the amount of material customers and end users must dispose of.

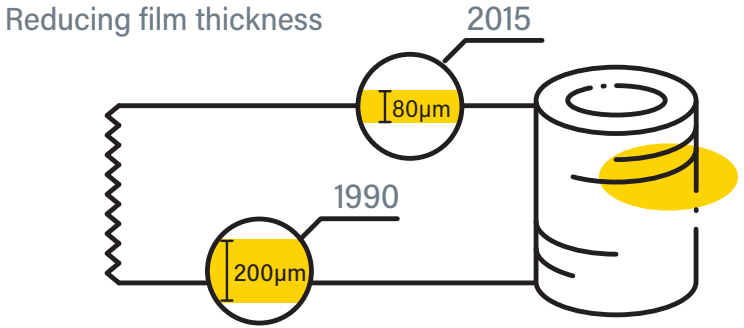
Multilayer film

Producing a multilayer film requires co-extrusion, a process in which two or more polymer layers are combined into one film. When making a film with different polymer mixes in different layers, it is possible to make thinner films optimising material usage. Today we produce up to 7-layer films.

MDO technology

MDO (machine direction orientation) technology is an excellent example of how we can offer more sustainable products to our customers. This means that we can make significantly thinner films for certain packages. Stretching the film using the MDO process results in thinner, stiffer and stronger film. For insulation packaging material we use MDO film to half the film thickness without compromising mechanical properties. Stronger films enable our customers to compress insulation material, which results in more economical transportation of goods. MDO films are also used in monomaterial laminates to promote recycling.

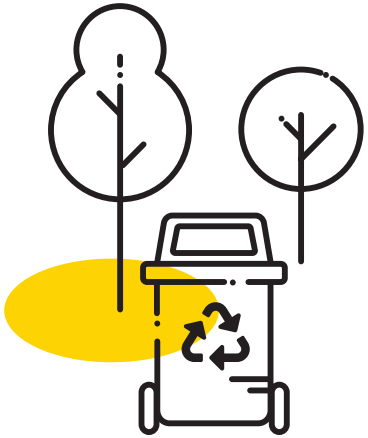
> We have taken steps to reduce the amount of raw material which results in a reduction in the amount end users must dispose of



Design for recycling

The essential criterion of product design is its high performance. The new challenge, however, is to incorporate the recyclability aspect and to make it a requirement together with the other performance criteria: product safety, shelf life, marketing and branding, etc. It is important to balance the performance criteria of a plastic product, without ignoring its recyclability.

Demand for recycled plastics from large brand owners and industrial buyers is increasing, driven by sustainability targets and customers' desire for more environmentally-friendly products. We have doubled each year the use of recycled plastic in our products and work closely with current and new raw-material suppliers to source high quality regranulates. We offer regranulate versions of our products. However, as mentioned earlier on page 14, recycled plastic is not suitable for the food and beverage industry and global industry players are currently investing significant time and resource into making recycled plastic food safe.



The lowest carbon footprint can be achieved by using recycled plastic

According to the Global Plastics Outreach Alliance definition, a product is considered recyclable if it meets the following conditions:

- The product must be made with a plastic that is collected for recycling, has market value and/or is supported by a legislatively mandated programme.
- The product must be sorted and aggregated into defined streams for recycling processes.
- The product can be processed and reclaimed/recycled with commercial recycling processes.
- The recycled plastic becomes a raw material that is used in the production of new products.

Lean manufacturing practices minimise our environmental impact

Sustainable manufacturing is the creation of products that use processes that minimise the negative environmental impact, conserve energy and natural resources, and are safe for employees, customers and consumers. Therefore, we are implementing LEAN manufacturing practices in all our production plants as it is completely compatible with sustainability. Any waste creates inefficiency including waste of human skill or energy, effort in transportation or use of unnecessary materials.

We have successfully managed to reduce the amount of hazardous waste from our maintenance processes by 30% during the last ten years.

The main benefits of LEAN production include:

- Reduced scrap and rework
- Reduced hazardous waste
- Improved environmental performance
- Reduced quantity of raw materials, resources and energy

We invite you to visit our modern production facility in Terjärv, Finland, which is a local landmark and features one of the largest and most efficient production lines in the EU.

Towards more sustainable printing

The ink industry is a growing market globally, particularly due to the increasing use of printing inks for packaging applications.

The role of printed films is constantly increasing and today we operate 11 printing machines, six of which are inline. We have recently invested in two new machines that will replace and update Rani's existing equipment and further increase our printing capacity and offering webs up to 2.65 meters wide. We have taken several steps to establish more sustainable printing practices and have reduced ink use by 33% in relation to the amount of printed film produced.

Main actions include:

- Optimised the turnaround of our ink stock.
- Implemented new digitally-assisted printing technologies, tools and printing plate production processes, which consume uses less ink and washing solvent.
- Streamlined our printing process in terms of efficiency, ink consumption and waste reduction.
- Encouraged customers to use fewer colours to reduce environmental impact.

Energy efficiency

The Energy Efficiency Law (1429/2014), effective from the beginning of 2015, requires large companies to perform an energy management audit every four years. An analysis was carried out in our Björlas factory and the results showed that a major part of energy consumption is that of electrical power in production, mainly in the extrusion processes in film blowing and cast lines and in the regranulation process. We are actively working to reduce the energy, water and waste in our operations. Energy from the production process is used to heat our buildings and our energy related management has reduced annual carbon dioxide emissions by 300 tons. When possible, we use electricity generated from wind power. We are also looking into developing our own windmill. All lighting has been replaced with low energy LED lamps.

More sustainable transportation

In the EU 50% of goods are packaged in plastic, which accounts for 17% of all product packaging weight. This weight has been reduced by 28% over the past ten years. Light packaging generates savings in transport costs and consequently delivery trucks emit less. In addition, plastic packaging allows insulation materials used in construction to be compressed into a smaller space. It is vital to be able to offer transport efficient packaging to our customers. We are continuously working to develop more cost and emission efficient solutions, through down gauging film thickness and employing MDO technology, which achieves thinner film without compromising durability.

Meeting the recycling challenge

Plastic can be recycled and reprocessed several times. For many years we have worked hard to minimise the amount of plastic waste generated by different phases of the manufacturing process. Most waste occurs during extrusion, for example, when the raw material or colour is changed or when the width of the film is adjusted. Rani Plast recycles nearly 100% of its waste.

Unfortunately, external recycled plastic does not comply with food packaging industry regulations and there is pressure worldwide to increase the use of recycled materials. This includes recycling plastic in food packaging, usually food containers. The European Commission is preparing to fast-track approval of 140 recycling processes for use in food and drinks packaging.

> Plastic packaging is not harmful to the environment if properly disposed of

We have made agreements with local packaging recycling institutions in our main markets, Finland (RINKI) and Germany (ERDE). They collect packaging material into recycling. Rani Plast has contributed to a considerable reduction in greenhouse gas through its recycling efforts and we actively encourage our customers to recycle our products properly.

ERDE

RINKI

Measuring our environmental impact

We believe it is very important to regularly track and measure the impact we have on the environment. Life Cycle Assessment (LCA) is a methodology to identify, measure, and evaluate all the energy and material flows that result from making, using and disposing of a given product or material. LCA studies have been carried out on several of our products enabling us to understand which phases in the production process have the most significant impacts on the environment and identifying the areas we need to further develop.

Rani Plast's environmental management system is based on the internationally accepted standard ISO-14001:2015. The ISO-standard requirements ensure an environmental management system that supports sustainability. The purpose of the standard encourages performance enhancement, meets compliance obligations and fulfills objectives.

MANAGEMENT SYSTEM CERTIFICATION
DNV·GL
ISO 9001 = ISO 14001

Smart **packaging solutions**