



**interseroh**  
zero waste solutions

# zero waste solutions

Sustainability Magazine





# zero waste solutions

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## Dear Readers,

Raw materials are the basic elements of our economy. We use them every day and are surrounded by them everywhere. This is why it is so important to use them in a sustainable way. On a global scale, the careful conservation of resources is a key challenge. For future generations, too.

At Interseroh, we have set ourselves the target of securing the resources needed by the economy and our society. We want to avoid unnecessary wastefulness by using raw materials efficiently in a closed loop. This is the only way to decouple resource consumption from economic growth – and only by doing so can we achieve our mission of 'zero waste solutions'. We work towards this goal with our employees by creating innovative, efficient solutions, developing new markets and continuing to expand our business models. In this context, digitalisation is a key driver that helps us to chart out new territory and put ourselves on a sound footing for the future.

In order to function smoothly, a circular economy requires all of its stakeholders to be involved in the process. Interseroh brings together those parties from one end of the value chain to the other. We also take steps to disseminate circular economy know-how among educators, lawmakers, entrepreneurs and society at large.

Our mission, which tackles some of the major challenges of our time, has also inspired the revisions we have made to our sustainability strategy: our orientation on the Sustainable Development Goals (SDGs) set out by the United Nations enables us to make a specific contribution to sustainable development in a global context.

In this issue, we show you how we are structuring our sustainability activities, developing solutions and reorienting ourselves strategically – both internally and externally. For sustainable resource usage. For zero waste solutions.

Cologne, June 2018

Your Management Team



Hans-Stefan Kalinowski



Dr Timo Langemann



Markus Müller-Drexel

# The model for the future: circular economy

With ‘zero waste solutions’, our mission is clear: we want to establish an efficient circular economy to conserve resources and reduce our impact on the environment. That’s what we stand for. For a world without wastefulness.

Every year, around 60 percent more resources are taken from the Earth than can be restored by natural processes within the same time frame. If we want to ensure quality of life for future generations, we need to ensure the successful decoupling of economic development from resource usage. At Interseroh, we want to challenge the linear ‘take, make, waste’ economic paradigm – in which something is produced, consumed and then ultimately discarded – by helping to design a comprehensive circular economy. Raw materials should be used as long as possible – before we recycle them and return them once again to the loop.



**“A holistic view needs to be taken of the lifecycle of a product. Aspects that are relevant for reuse should be considered as early as the production stage, for example.”**

**Dr Timo Langemann**, Managing Director,  
INTERSEROH Pool-System GmbH

As an international environmental services provider, we have set ourselves the goal with our declared mission of ‘zero waste solutions’: we want to safeguard the resource needs of the economy while avoiding wastefulness. For more than 25 years we are already developing innovative closed-loop solutions.

Our intelligent, tailor-made products and services **reduce environmental impacts and improve our customers’ sustainability efforts while offering them new business opportunities.** Markus Müller-Drexel, Managing Director, INTERSEROH Dienstleistungs GmbH (Interseroh): “The identification of efficient approaches to value creation processes geared to the circular economy is now a decisive factor for business success, and can help to balance out resource scarcity and fluctuations in prices.” As an ALBA Group company, Interseroh can draw on the entire pool of expertise concentrated within the Group of companies.

## **An overview of the whole loop**

The development of a circular economy is dependent on an integrated approach. Dr Timo Langemann, Managing Director, INTERSEROH Pool-System GmbH: “A holistic view needs to be taken of the lifecycle of a product. Aspects that are relevant for reuse should be considered as early as the production stage, for example.”

**This is where Interseroh uses innovation:** we work with our customers to develop new design-for-recycling approaches, implement returnable logistic systems, roll out upcycling



solutions for plastics to close loops for recyclables and logistics, prepare products for reuse, and design new sharing economy models. This is how we address resource scarcity and prepare ourselves for the future.

Our success for the environment is measurable: in 2016, recycling work in the ALBA Group was single-handedly responsible for saving around 36.2 million tonnes of primary resources and avoiding 4.3 million tonnes of greenhouse gas emissions. This impact of our business activities has also been documented in the 'resources SAVED by recycling' report from Fraunhofer UMSICHT.

### Rethinking value creation

The concept of an all-inclusive circular economy cannot be put into practice by just one company – it requires the involvement of all stakeholders along the various value chains. Manufacturing, retail companies and the waste management industry must all work together in developing an integrated circular economy, and adapt their products, business processes and services accordingly. A well-functioning model requires the interlinking of all partners as well as effective communication.

These are the areas Interseroh is targeting: **we want to actively shape the debate here and bring together all players in the circular economy.** Last year, we provided support to econsense – the Forum for Sustainable Development of German Business – for its Sustainable Competencies Programme. Here, we discussed practical and individual approaches to sustainability with a number of companies. To accelerate knowledge transfer at all stages in the value chains, we participate regularly in industry events, presentations and corporate initiatives.

**“The identification of efficient approaches to value creation processes geared to the circular economy is now a decisive factor for business success, and can help to balance out resource scarcity and fluctuations in prices.”**

**Markus Müller-Drexel**, Managing Director,  
INTERSEROH Dienstleistungs GmbH



**“A well-functioning circular economy requires all actors along the value chain to work cooperatively together. For their part, companies reap the rewards in the form of new business opportunities, lower costs and an improved reputation.”**

**Hans-Stefan Kalinowski**, Managing Director,  
INTERSEROH Dienstleistungs GmbH

**36.2**

million tonnes  
of primary resources and

**4.3**

million tonnes of green-  
house gas emissions were  
saved by the recycling  
activities of the ALBA Group  
in 2016.

In the 'Business Backs Climate Protection' dialogue forum, we work with other companies to develop strategies and concrete climate protection measures. We also want to further anchor our mission of 'zero waste solutions' in society at large: in the context of the REUSE project, we are working with the Multivision charity to raise awareness about the overuse of finite resources among schoolchildren.





## Four strategic pillars for success

Interseroh's business model is anchored on four principles: **ReDuce, ReUse, ReCycle and ReThink**. All of these are oriented on a holistic circular economy and contribute to our overall mission of 'zero waste solutions'.

### ReDuce

#### Preventing waste

We create well-designed returnable systems and pooling solutions aimed at preventing waste. We use these to optimise our customers' logistics process and simultaneously reduce costs.

### ReUse

#### Reusing products

To extend product lifecycles, we establish highly efficient systems for take-back, sorting and reuse.

### ReCycle

#### Recycling materials

Once all options for waste prevention and reduction have been exhausted, the focus then turns to recycling. We develop modern solutions for closed-loop management and produce high-quality recycled materials.

### ReThink

#### Process analysis and optimisation

We provide tailor-made advice to our customers and support their work to improve their sustainability practices. We analyse, appraise and optimise company processes – regardless of whether the job at hand is waste volume, material flows or logistical and infrastructural processes.

# Our Advisory Board



**Dr Henning Wilts** is a thought leader in the field of circular economics in Germany. As Head of the Circular Economy Research Unit at the Wuppertal Institute, he is able to view the major challenges of a real transformation to a closed-loop economy – including its concomitant promises of growth – from a scientific perspective.

## Input for our sustainability strategy

To use external input for internal issues affecting our company, we appointed a Sustainability Advisory Board in 2016. The Board helps us to develop our sustainability strategy further, to flesh out ideas for initiatives and identify new areas of interest.

The sustainability experts of Interseroh's Advisory Board are drawn from manufacturing, retail, research and civil society. Over a period of two years, we have worked together with Board members to revise and refine our sustainability strategy. The aim was to identify those areas in which Interseroh could make the most effective contribution to sustainable development while developing as a company and strengthening relationships with its customers.

In the course of this process, we reviewed customer needs and market requirements related to sustainability, persistent challenges in the transformation to a well-functioning circular economy, and the various sustainability trends now to be seen in the fields of construction and retail. Interseroh's social responsibilities as an employer and enterprise were also discussed at length.

**Andrea Weber** is Director Corporate Responsibility at Metro AG, where her responsibilities include the global rollout of the company's sustainability strategy. She has often brought the customer's frame of reference to Board sessions, enriching their discussions with her knowledge of the vision and the reality of sustainable consumption.



**Michael Kölzer**, Corporate Responsibility Coordinator at HOCHTIEF AG, has supported the development of Interseroh's sustainability strategy as a Board member with his wealth of expertise concerning the sustainability requirements of public and international clients, together with the challenges faced by the building industry.

**Kai Battenberg**, Head of the Sustainable Goods Department at the toom DIY retail chain was able to draw on his practical experience with using recycled materials – such as in the manufacturing of product packaging for toom's store brands.



**Dr Christine Lemaitre** is co-CEO of the German Sustainable Building Council (DGNB). Her contributions to the Advisory Board have been drawn from her knowledge of trends in (residential) construction, as well as her experience of an industry-wide transformation process towards more sustainable buildings.

**Daniel Goldscheider**, who joins our Advisory Board as a member of the Board of Directors of the Global Footprint Network, plays a particular role in communicating the development and focus of Interseroh's new sustainability strategy.



# Interseroh sustainability strategy

no waste of

# ideas

Innovations are the lifeblood of successful transformation processes. We try out **every idea that brings us closer to our goal of closed loops** – even if we risk failure by doing so. This is the only way to create the kind of disruptive changes that our linear economy needs.

➤ We provide our customers with support for their efforts to professionalise their sustainable practices and integrate sustainability into their reporting processes by fully exhausting the **digitalisation potential** of our services.

➤ We extend **product lifetimes** by tapping into new markets and expanding the business models we have developed for them to achieve an annual revenue growth of at least 20 percent with these models.

➤ To ensure that manufacturing and retail can use resources more efficiently than before, we work with our customers to develop new **design-for-recycling approaches**.

# zero solut

no waste of

# talent

Our **employees** and their capabilities lie at the heart of our expertise as an environmental services provider. In order to make sure they can perform at their best for our customers every day, we need to provide for and guarantee their health and safety, motivation and career development.

➤ We want to guarantee full and effective participation to absolutely everyone at all levels of our company – and independently of age, gender, ethnicity, religion or social status. This is why we ensure that **equal opportunities are truly equal** for all (potential) employees within our company.

➤ We want to promote the **physical and mental health of our employees** while reducing our sickness, accident and staff turnover rates to below the averages for the industry. This is why we provide a safe, value-oriented and innovative working environment that actively supports personal development.



no waste of

# resources

We believe that resource usage is future-oriented only if it involves absolutely no waste at all. This is why we work on new ways of **closing material loops** every day.

➤ To rid the planet of plastic waste in the long term, we develop new **upcycling solutions for plastics** every year. We also work to improve the quality and quantity of the secondary raw materials that we create and offer to manufacturers for use in their production processes.

➤ If global warming is to be kept under the limit of two degrees Celsius, global resource consumption must become decoupled from economic growth. This is why we are developing new **material and logistics loops** with which we intend to save at least 3 million tonnes of resources and 500,000 tonnes carbon dioxide equivalents annually.

➤ To achieve significant reductions to the per capita environmental impact, especially in urban areas, we also take an integrated approach to **waste prevention** and to achieving a substantial increase in recycling rates.

# waste ions

no waste of

# knowledge

In order to develop a comprehensive circular economy, we have to **share our experience and knowledge** – and not only with our customers, but with all areas of business and society at large. This is the only sure way to raise awareness about the ecological and economic benefits of efficient closed-loop management.

➤ We see it as our duty to promote sustainable lifestyles and patterns of consumption. In this context, we act as an intermediary to ensure that **knowledge about the circular economy** is established in education, politics, business and civil society.

➤ We want to develop and (internationally) scale up **approaches and standards for closed-loop solutions** suitable for any industry. To do so, we are working closely with our partners, stakeholders, suppliers and customers. At the same time, we give our employees the creative space they need to participate in relevant initiatives for developing solutions in the circular economy.

# Global objectives – local roots

We aim to strengthen the kinds of activities and fields of endeavour where we can make a real contribution to the specific targets of the Sustainable Development Goals (SDGs) while developing our business further with a focus on our customers and markets.

We want to make an active contribution to meeting the global challenges facing sustainability. This is why we have focused specifically on the SDGs set by the United Nations when developing our sustainability strategy. Together with the needs of our customers and our core expertise in the fields of recycling, waste prevention and sustainability, the SDGs establish the framework within which we have formulated the focal points of our own strategy.

Working with employees from a wide range of business units and with a variety of roles within our company, we first used several workshops to assess the feasibility and compatibility of the ideas and approaches offered by the experts from our Sustainability Advisory Board. The next step was then to flesh out the details of these concepts in terms of their potential for helping us achieve the SDGs. This resulted in a total of four action areas, which reflect our strategic principles and are underpinned by several strategic points of focus (→ page 6/7).



→ View our film about Interseroh's sustainability strategy



Our latest film illustrates what sustainability means for Interseroh and how this has influenced our corporate strategy.

# Sustainability programme

Action plans for our strategic targets: Interseroh's sustainability programme assigns specific objectives to each of our strategic points of focus. Responsibility for the action plan is assigned in each case to the designated business unit or department at Interseroh.

	Point of focus	Contribution to SDG	Selected targets	Deadline	Status
no waste of resources	Discover new upcycling solutions for plastics every year to increase the quality and quantity of secondary raw materials	 	Commercialisation of recycling material to replace primary material for at least three new types of plastic (and for at least three new customers)	End of 2018 and annual goal	● △
	Every year, close new material and logistics loops with which at least 3 million tonnes of resources or 500,000 tonnes of CO <sub>2</sub> (carbon dioxide equivalent) can be saved	  	Innovative approach to closing a logistics cycle for a major customer	End of 2019	△
	Strive to achieve a significant increase in material recycling rates		Design and construction of a next-generation sorting plant	Mid-2019	● △
no waste of ideas	Support customers as they professionalise their sustainable practices and integrate sustainability into their reporting processes	 	Increasing the measurability of the effects of our services and products, and expanding the digital availability of certification	End of 2020	△
	Develop new approaches to design-for-recycling with customers		Development of a method for the scientific evaluation of packaging recyclability	End of 2018	△
	Extend the lifetime of products, and by doing so achieve annual revenue growth of at least 20 percent with new markets and business models		Taking-back of an additional still-usable product for developing a new product type	End of 2018 and annual goal	○ △
no waste of knowledge	Establish knowledge about the circular economy in education, politics, business and civil society	 	Continuation of engagement in local communities (by domestic and foreign businesses) to raise awareness about issues related to the circular economy	End of 2018 and annual goal	● △
	Develop and (internationally) scale up approaches and standards for closed-loop solutions suitable for all industries	 	Work with associations and industry-neutral initiatives on the topics of climate protection and sustainability	End of 2018 and annual goal	● △
no waste of talent	Provide a safe, value-oriented and innovative working environment that actively supports personal development		Promotion and further development of company culture	End of 2018	△
			Draw up career development plans for staff and management	End of 2018	△
			Continuous health management • 'Zero accident' strategy • Staff turnover < 10% • Sickness absence rate < 8%	End of 2018 and annual goal	△
	Ensure equal opportunities are truly equal for all (potential) employees		Routine benchmarking of general conditions	End of 2018 and annual goal	△
			Transparent and fair succession management	End of 2020	△
		More flexible working time arrangements	End of 2019	△	

△ New goal   ● Goal achieved   ○ Goal not achieved



# solutions for mobility

The mobility industry is changing: more electric vehicles and an increase in rail freight traffic is not only changing our day-to-day lives but also our resource needs. Accordingly, resource conservation and recycling must be taken into account when developing new mobility concepts. We are developing solutions and enhancing our business models in this area.

The advent of  
**self-  
driving  
trains**

could see a 40% growth  
in rail freight traffic  
by 2030.

At least 1 in every

**10**  
new cars sold  
worldwide  
will be electric

by 2022.



# Life after EV: safe battery recycling



Lithium-ion batteries are literally the technology that powers electromobility. A complex waste management process is required for end-of-life batteries, however. Interseroh offers a comprehensive take-back and recycling model for these batteries to guarantee safe, environmentally end-of-life management.

## 300

Global demand for lithium-ion batteries is expected to increase from 90 GWh in 2015 to around 300 GWh by 2025.

Analyses made by leading experts predict exponential growth worldwide in the field of electromobility. As the numbers of electric vehicles rise, so too does the volume of batteries required. Wassilij Weber, Head of High-Voltage Battery R&D, Interseroh: “Over the next ten years, we expect to see a tripling of the worldwide market for lithium-ion batteries.” The long service life and low level of self-discharge typical for lithium-ion batteries has made them the most advanced

storage technology for electromobility. “As their numbers increase, so too do the requirements for safe waste management and recycling. This is where Interseroh can offer a comprehensive, integrated solution.”

### Consolidated expertise

The high energy density of lithium-ion batteries means they can constitute a safety risk when they become old or damaged. Waste management processes, including transportation, therefore require high safety standards and professional handling at all times. In the future, these standards will need to be met by car dealerships or bicycle repair shops – who are required by law to take old batteries back.

**To simplify the taking-back, Interseroh has consolidated the key steps in the waste management process for industrial batteries –** from customer consultations to pick-up and



**“We consolidate the expertise needed for the safe recycling of lithium-ion batteries and use this as the basis for creating global recycling models.”**



**Wassilij Weber**, Head of High-Voltage Battery R&D, Interseroh

transportation to the recycling depot itself. “We ensure full compliance with national and international regulations. Wherever our customers are based, the local legislation on dangerous goods and waste must be followed and properly documented,” explains Weber.

#### **Keeping resources in the loop**

Interseroh organises safe transportation for the batteries by working with a network of partners

who specialise in the movement of dangerous goods. For recycling, the batteries are transported to one of the few plants worldwide that is actually able to handle battery reprocessing. “This process lets us recover valuable raw materials such as cobalt, nickel and manganese,” explains Weber. As a final step, the raw materials can then be returned to the loop and used to manufacture new batteries.

## The spirit of innovation

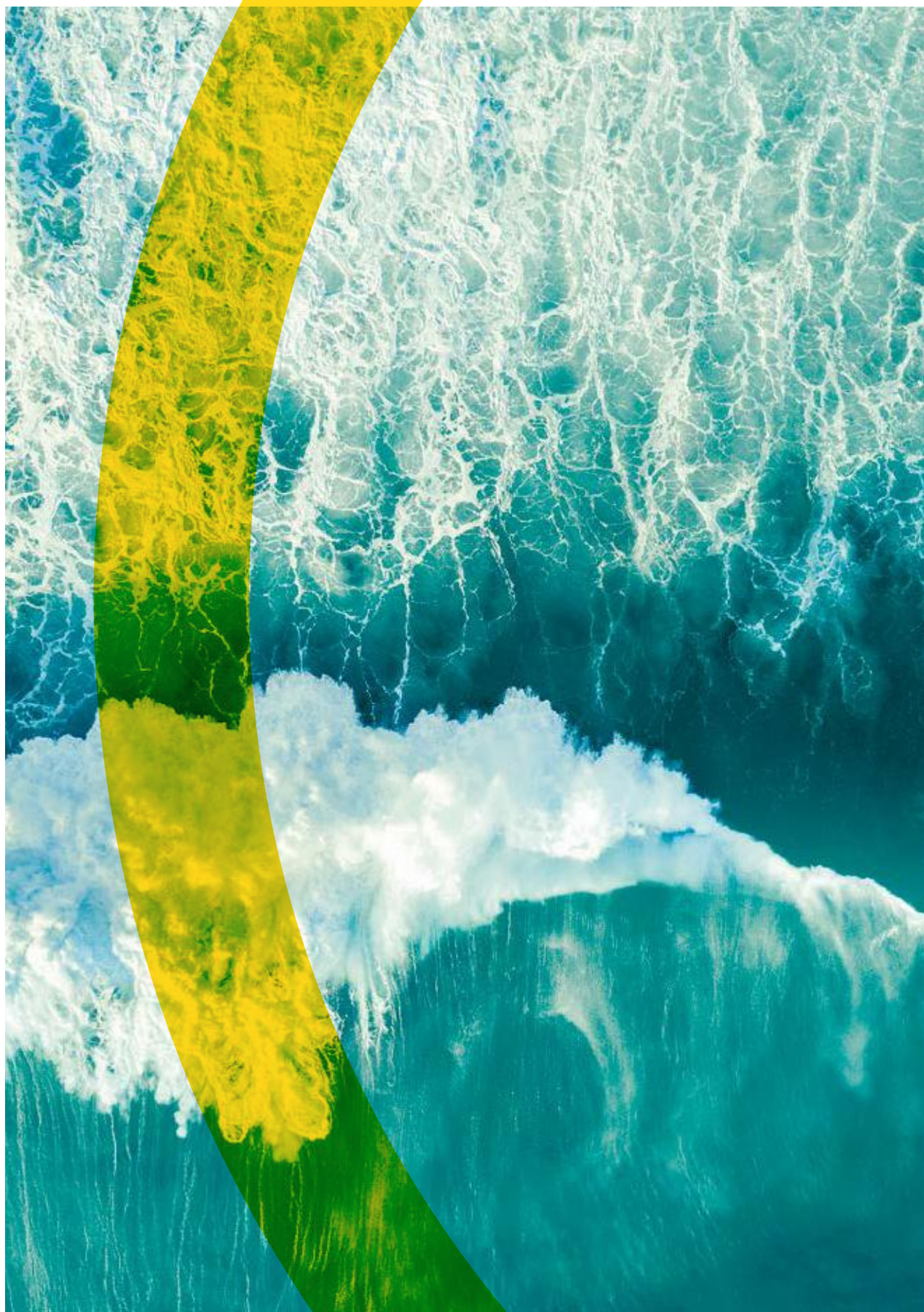
## BEYOND1435

Networking knowledge, expanding core business and working on pioneering new topics for the future: these are the goals pursued by the ALBA Group with its brands ALBA and Interseroh together with partners Siemens, Deutsche Bahn, Bombardier, Swiss Federal Railways and TUI. The innovation platform Beyond1435 is being used to network established companies with young start-ups working in mobility and logistics. Alexander Häge, Head of Innovation & Strategy at Interseroh: “Our collaboration with these start-ups is focused on developing innovative and creative concepts for our existing business models, as well as trying out new ideas. Working together with these business partners gives us a straightforward way to fast-track the launch of forward-looking projects.”

At Beyond1435, multinationals, start-ups and corporate venture units all come together, leveraging the resources of big business and the dynamism of small start-ups to work on designing the future of mobility, logistics and infrastructure in the smart city. All of this is powered by the

expertise of Plug and Play, provider of the world’s biggest platform for networking and innovation. For the ALBA Group, the subject areas of smart city, smart mobility and smart logistics are increasingly important. The idea here is to work with external partners on visionary solutions for the challenges of the future.





# solutions for plastic

Plastics now play an essential role in our daily lives. Yet while they handle many different kinds of tasks, they also create major challenges in other areas. Closed-loop management is therefore essential to protect our environment and climate. We are developing new technologies and methods here. And we are identifying the right solution for every customer.

Every year,

**335**  
million  
tonnes

of plastics are used by  
manufacturers worldwide.

Thanks to the recycling of 850,000 tonnes of lightweight  
packaging and plastics, around

**2.8**  
million tonnes of  
primary raw materials

were saved by the ALBA Group in 2016.



# Fantastic plastic – end-of-life is not the end

While a life without plastic might now be unthinkable, its use has far-reaching consequences for the environment. Plastic is much too valuable to be simply thrown away. This is why Interseroh is working to develop ways of reprocessing end-of-life plastic packaging. To be successful, the right design must be chosen when first developing the packaging.

## 450

years are needed for a PET bottle to biodegrade completely.

Pens, PCs and packaging – plastics now form an indispensable part of our daily lives. High-volume plastics production started in the early 1950s and has since enjoyed a manufacturing boom of staggering proportions: while just under 2 million tonnes of plastics were produced in 1950, the figure was around 380 million tonnes for 2015. The secret of this success is versatility: durable yet elastic and lightweight, plastics are also the perfect material for packaging. Plastics simplify food logistics, protect foodstuffs and keep them fresh, and also offer plenty of space for both consumer information and marketing messages.

Yet the longevity of plastic in particular causes enormous problems, since the material is not properly biodegradable. While it does break down into smaller and smaller fragments, these persist in the environment for many years. A PET bottle, for example, requires 450 years to biodegrade completely. Single-use products account for around 95 percent of plastic packaging in the EU. Germany actually produces a larger volume of single-use product waste than the EU average – a clear signal that material recycling needs further optimisation.

Only around

## 5%

of the plastic packaging utilised in the EU is used more than once.

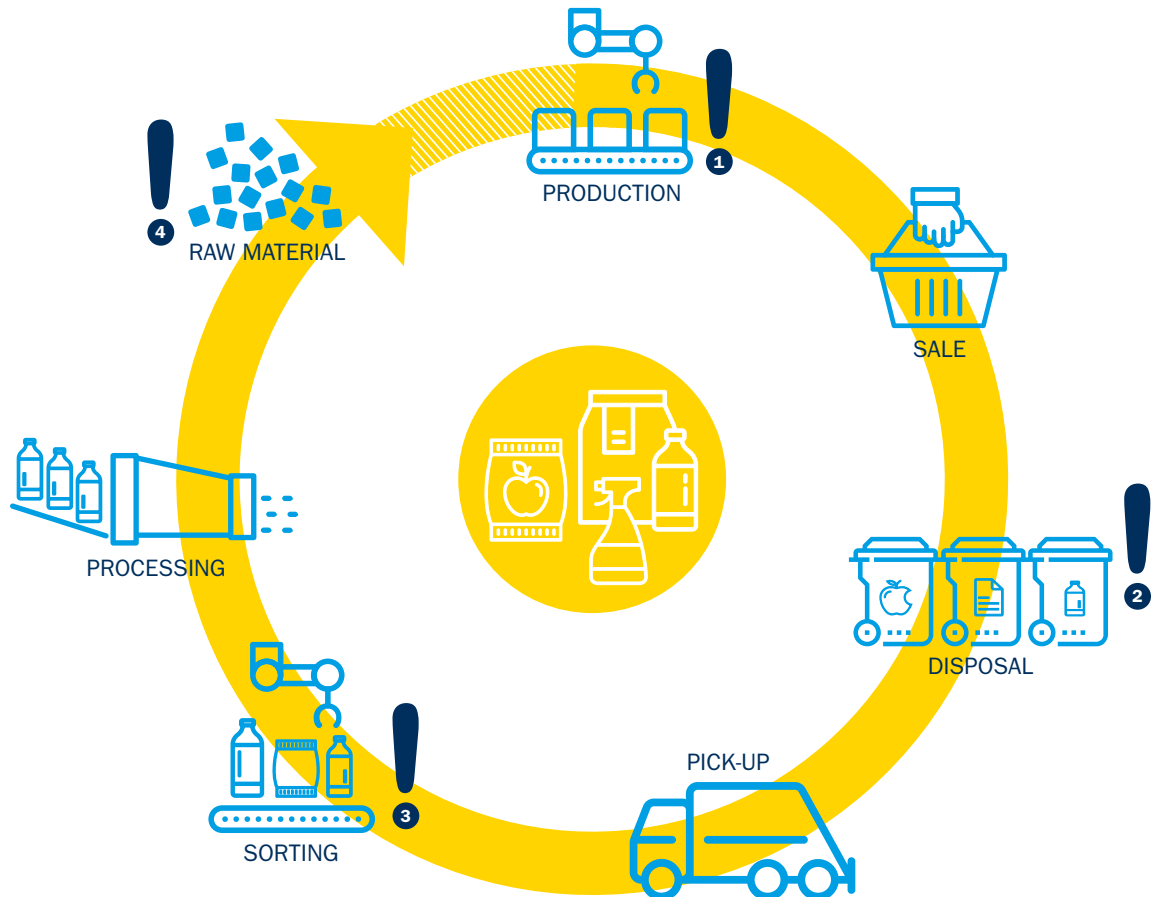
### No recycling without proper waste management

Frank Kurrat, Head of Business Centre ReCycle at Interseroh: “While we don’t want to ban plastics entirely from our society (and it’s now too late to do so anyway), we have to work towards achieving 100 percent recycling for our products and packaging to ensure they are kept in the closed loop.” **As a provider of domestic waste collection services, Interseroh works to keep packaging in the loop and conserve resources.** Consumers must also play their part: proper separation of waste at the source is the basis for a well-functioning closed-loop system and high rates of recycling. According to a survey run by the German Packaging Institute, however, over a third of German consumers fail to sort their waste properly. This is why Interseroh visits schools to teach our youngest members of society about waste separation.

### New law gets tougher on recycling

From 1 January 2019, regulations on recycling will get tougher: the new German Packaging Act requires retailers to license their packaging volumes with a dual system. At the same time they have to register with the Foundation Central Office of Packaging Registration. The act also offers incentives for more recycling-friendly packaging while also raising the bar for recycling rates: **by 2022, targets for the material recycling of plastic packaging will rise from the current 36 percent to no less than 63 percent.** “These are ambitious but entirely feasible targets,” says Gunda Rachut, Council of Germany’s new Foundation Central Office of Packaging Registration, which has been set up as a neutral supervisory body to encourage greater transparency (→ see interview on p. 21).

# A lifecycle for packaging: the optimum process



①

Even before production starts, design work needs to ensure that the packaging is recycling-friendly: the colours, materials and labelling should all be designed with recycling in mind.

②

High-quality processing for end-of-life packaging is possible only if consumers dispose of the packaging correctly after use.

③

Designed for recycling? If packaging is made from a variety of composite materials, sorting plants will often be unable to identify these materials properly. This makes subsequent recycling more difficult.

④

Once the recycled material is used to make new products, the loop has finally been closed.

## Fit for recycling with Interseroh

Environmentally-aware manufacturers are already adjusting their packaging design processes to the new recycling laws. And Interseroh already knows the act inside-out: drawing on its comprehensive knowledge of end-of-life processes – from

collecting to sorting, processing and recycling – the experienced environmental services provider is well able to navigate a successful path to optimal recycling. Interseroh uses this broad-based know-how in its 'Made for Recycling' consulting service.

**“We know the requirements that packaging has to fulfil in order to be fully recyclable. In our work with our customers, we use this know-how to identify potential areas of improvement that make the product more recycling-friendly.”**

**Frank Kurrat**, Head of  
Business Centre ReCycle at Interseroh

**Keeping material flows as pure as possible**

“Together with our customers we analyse the lifecycle of their packaging,” Kurrat explains. “We examine every aspect of the process – from design and production through to disposal and recycling. This is used as input for recommendations for action and the design of solutions to optimise recycling.”

**“Everyone stands to benefit,” says Kurrat. “Packaging that is 100 percent recyclable not only saves natural resources but also protects the climate and is preferred by environmentally-aware consumers.”**

**A shared approach to recycling**

As ‘Made for Recycling’ has shown, packaging recycling needs teamwork. Markus Müller-Drexel, Managing Director of INTERSEROH Dienstleistungs GmbH: “We thought it was time to initiate a constructive discussion between the various actors along the packaging value chain.” Which is why Interseroh and the German Packaging Institute host the Future Resources conference once a year to bring everyone in the industry under one roof. At the inaugural event in 2017, organised around the theme of ‘Packaging is raw



The inaugural Future Resources event, titled ‘Packaging is raw material’, was held in October 2017 in Frankfurt.

The concept of ‘recyclability’ depends on a very broad range of factors, and can be influenced by the colour of the packaging, the composition of its materials or the adhesive product label, for example. Ideally, a piece of packaging will transit seamlessly through the recycling process from collection to reprocessing.

material’, 100 delegates from retail, manufacturing and recycling addressed the issue of packaging recyclability. Müller-Drexel: “All of us agreed on one thing: eco-design needs to be a stronger point of focus for packaging manufacturers.”

This year’s conference is entitled ‘Packaging for tomorrow’ and will be held on 6 November 2018. The location for the event is once again Frankfurt.

→ For registration and further details, please visit [www.future-resources.de](http://www.future-resources.de)



# Scientific expertise to promote **eco-design**

To objectively evaluate and measure the recyclability of a piece of packaging, Interseroh utilises a methodology it has developed in-house with two independent institutes. This is where the broad scope of technical environmental protection services offered by bifa environmental institute (bifa Umweltinstitut) and the expertise of the Fraunhofer Institute for Process Engineering and Packaging IVV (Fraunhofer-Institut für Verfahrenstechnik und Verpackung IVV) complement one another perfectly for addressing issues in food and packaging technology.

## **How do you assess the recyclability of packaging?**

**Dr Kreibe:** To perform packaging evaluations, we have developed a list of criteria that can be divided into three sections. First, we assess whether consumers are able to dispose of the packaging correctly. Second, we determine whether contemporary sorting plants will be able to sort the packaging into the right fraction. As a last step, we look at whether or not the packaging is suitable for mechanical recycling.

**Dr Schlummer:** A lot of packaging is designed in a way that prevents it from being sorted properly, even by plants that are now very technically advanced. This is where we want to identify and resolve weaknesses.

## **What kinds of packaging features can make recycling more difficult?**

**Dr Schlummer:** These can be very simple things. Is the foil lid on a yoghurt pot easy to remove – or do bits of it stay stuck to the rim? Can the packaging colour be detected by the sorting system? Or does the mix of materials used make sorting decisions difficult or impossible? If these kinds of aspects are considered by packaging designers, recycling becomes a lot easier.

**Dr Kreibe:** And improvements to recyclability naturally also improve the quality of the recycled raw materials produced. But there has to be a market for them, of course. Today, there are already many useful applications for recycled plastics and some companies have already recognised their potential. As the volume of recycled plastics used increases, the more effort will be spent on developing them and improving their quality.



**Dr Martin Schlummer,**  
Fraunhofer Institute  
for Process Engineering  
and Packaging IVV



**Dr Siegfried Kreibe,**  
bifa Umweltinstitut

## **What challenges do you see for packaging recycling in the future?**

**Dr Schlummer:** On the one hand, packaging has to protect a food product, for example, ensuring that it does not spoil and can be stored safely for a period of time. Recyclers, on the other hand, want packaging to be as simple and recycling-friendly as possible. So compromises will need to be made on these issues by recyclers, retailers, packers and the packaging industry. Recyclability now needs to be on everyone's agenda.

**Dr Kreibe:** This needs action on the part of packaging designers. Interest in recycling as a topic for packaging design is growing fast and communication with sorting and processing plant operators is already very good. Recycling itself is also producing a constant stream of technological developments. Yet we have to stay realistic here: there will always be a percentage of packaging that ends up in the incinerator. Our goal must be to reduce this percentage. The targets set by the new German Packaging Act are ambitious. They'll need hard work, but I think they are achievable.

# From disposable to reusable: closing the loop

If a product has been designed from the outset as recyclable, Interseroh can then close the loop. Taking the example of plastics, Interseroh uses the innovative Recycled-Resource process to make high-quality plastic recyclates from post-consumer packaging.

This multiple award-winning process is continuously improved in the company's own competence centre to ensure the formulations meet the highest quality requirements. **“The technical properties and overall quality of our recycled granulates are comparable to new materials in all respects – they can replace primary raw materials and conserve valuable resources,”** explains Dr Manica Ulcnik-Krump, Managing Director of INTERSEROH Plastics Research & Development d.o.o.

We produce our recycled plastics (Procyclen and Recythen) to customer specifications to ensure that they are fine-tuned for immediate deployment in the manufacturing of new products.

## Continuous improvement

To further optimise the recycling process, Interseroh continuously invests in the development and modernisation of its own plants, the cutting-edge technology it uses is second-to-none and ensures compliance with the new Packaging Act. As a think tank, the competence centre in Maribor, Slovenia, also acts as a point of focus for all R&D activities related to Recycled-Resource. Interseroh's focus on using the latest technologies drives the continuous expansion of its products and services, the flexible and fast accommodation of customer needs – and an efficient circular economy.

## Returnable packaging cuts greenhouse gases

Procyclen is already used in the ‘memo Box’ returnable packaging system run by office supplier memo AG. For the box, Interseroh developed a custom formulation capable of meeting its stringent material requirements: durability, mechanical stability to -30 degrees Celsius, good UV resistance, and safe and secure when used with freight. Frank Schmähling, Chief Logistics Officer, memo AG: “The simple switch to Procyclen for the memo Box means we have reduced greenhouse gas emissions during box production by up to 30 percent.”

# 500

Using procyclen rather than primary plastics cuts greenhouse gas emissions by almost 500 kg per tonne.



# Transparency in the packaging recycling market

The Foundation Central Office of Packaging Registration has been set up as part of implementing the new German Packaging Act – and will ensure a greater level of transparency and monitoring for the recycling of packaging. Foundation council and environmental lawyer Gunda Rachut gives her opinion of the changes that will soon come into force.

## **Ms Rachut, what do you view as being the most important changes ushered in by the new Packaging Act?**

The act further develops manufacturers' product responsibilities along the same lines as before, while setting higher recycling targets and fine-tuning definitions. Manufacturers and distributors can easily clarify whether their packaging must be managed within the system. This gives them legal peace of mind. In turn, the specific dual system they use must promptly report the quantities they have managed in the system. It's also possible for everyone to see whether manufacturers are properly registered. This emphasises the importance of good practice among manufacturers.

## **What duties will the Foundation be taking on from January 2019?**

The Register will safeguard product responsibility and support its further development. From past experience, we know that it has been virtually impossible to transpose the definitions from the European Packaging Directive into German national law unchanged. If manufacturers wanted a ruling on whether their beverage packaging was subject to a mandatory deposit, they had to ask all 16 states. The same applied to questions about categorisation as sales, transit or secondary packaging. From now on, the Foundation will be responsible and can provide legal advice on categorisation based on the Packaging Act. The Foundation also monitors compliance with legal obligations.

## **What do you think of the new recycling targets?**

I think the targets are ambitious. They will be measured against the volume of packaging managed in the system. The volumes that will

require recycling will rise proportionally as the Foundation manages to integrate 'free riders' into the system. Meeting these targets requires cooperation among all actors in the value chains.

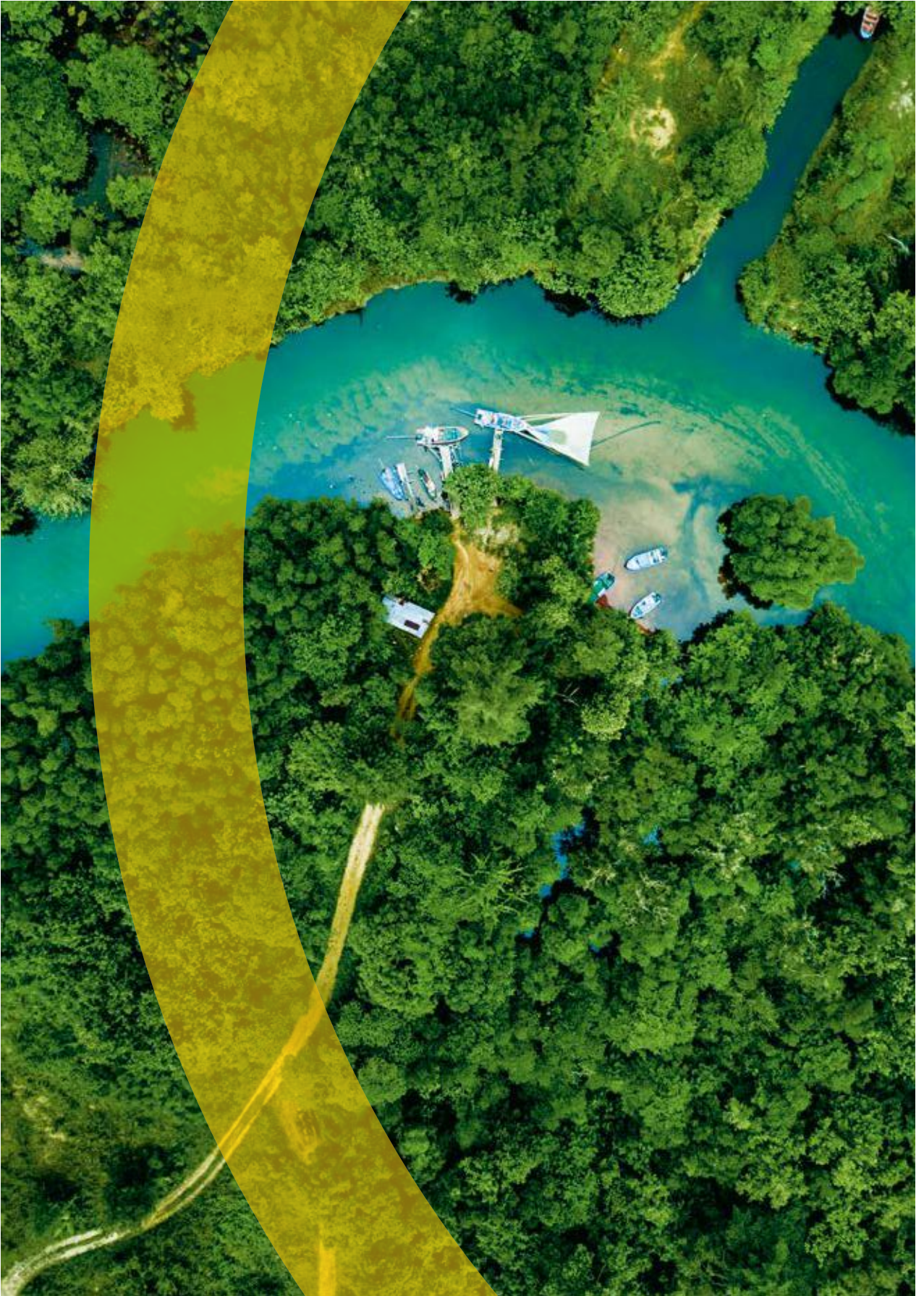
## **What areas offer the greatest potential for meeting these new recycling targets?**

The chain starts with consumers. But there is a lack of support right now for their input – which is to separate the waste at source. Consumers don't know enough about recycling. The dual systems and local authorities need to do more here. Sorting and processing technologies must of course be modified and enhanced to ensure that as much of the collected packaging can be recycled as possible. And packaging should be designed from the outset with recycling in mind.

Last but not least, we need to promote the use of recycled raw materials. While demand is relatively high, there are many more potential applications to be exhausted. If manufacturers and recyclers cooperate closely, they will be able to develop new applications and recycling solutions. To do so, manufacturers must improve their knowledge of recycling law – and recyclers their grasp of target product requirements. But I'm confident about our chances: for those involved, the Act was their starting gun – they can now finally get to work on these topics.









# solutions in cooperative partnerships

A coordinated effort is needed: only then can we develop new solutions with the aim of reusing products and materials, and meet the long-term demand for raw materials. Our partners and partnerships play a decisive role here. Together, we can make our vision of a comprehensive circular economy a reality.

In November 2017,  
Interseroh joined forces with

**51**  
companies

and associations to call on  
the next federal government  
to declare climate protection  
a top priority.

In 2017, Interseroh was active in around

**50**  
associations and  
initiatives

that focus on promoting circular economy.

# Thinking outside the box: two degrees are possible

Limiting global warming is a responsibility that is shared by society as a whole. And one that Interseroh takes very seriously. Together with many other companies, we are part of the pioneering 'Road to a <math>2^{\circ}</math> Economy' initiative. Here, we participate in interdisciplinary working groups to develop ideas for a climate-neutral economy.

In workshops, initiative members develop innovative ideas and solution strategies for achieving the two-degree target.



At the 2015 Paris Climate Conference, the global community agreed on a clearly formulated goal: to mitigate the consequences of climate change, global warming should be limited to under two degrees Celsius. The federal government's Climate Action Plan is a roadmap for Germany's transition to a mostly emissions-neutral country by 2050.

Companies have a central role to play in achieving this target. So what action should they be taking to reduce global warming? **The strategy adopted by the 'Road to a <math>2^{\circ}</math> Economy' initiative is "We achieve more if we work together."** Thanks to its interdisciplinary approach, the initiative unites a wide variety of industries, specialisms and perspectives with the aim of making progress towards their common goal.

## An eye on the target

Interseroh is actively working towards this two-degree target. Together with around 40 other companies, we are members of the forward-looking 'Road to a <math>2^{\circ}</math> Economy' project, which was launched jointly by Foundation 2° and WWF Germany.

In the three topic clusters of Buildings, Transportation and Manufacturing, project participants have been developing and pursuing various solutions since 2017. "Participating companies work up innovative project ideas that they then plan to implement," explains Andrea Dreifke-Pieper, Head of Strategic Corporate Partnerships at WWF. "This approach enables companies to make a contribution to reducing their greenhouse gas emissions."



**“Our initiative benefits from interdisciplinary collaboration. We bring knowledge and expertise together to help achieve our common goal: limiting global warming.”**

Sabine Nallinger, Managing Director, Foundation 2°

**For its part, Interseroh offers its expertise in each of the three clusters and works with other participants on flagship projects for a climate-neutral economy.** “Everyone benefits from this two-way knowledge transfer and egalitarian approach to the problem: our work is innovative, inclusive and in-depth. Only in this way can we hope to achieve our goal of an emission-neutral economy,” explains Stephanie Thiele, Sustainability Manager at Interseroh and ‘Road to a <2° Economy’ project member.

#### **A look into the future**

So what does the climate-neutral world of 2050 look like – and what changes do we need to make to get there? At the start of the project, participants made predictions about the future,

developed visions and discussed trends. Ideas from this brainstorming session were then used as input for initial solutions to the urgent problem of reducing emissions.

The individual project teams worked on their ideas within an ongoing process of development, rejection, fine-tuning and change that ultimately produced a wealth of forward-looking projects. From low-emission logistics to electromobility models and innovative residential housing – a very wide range of topics has been covered. In the next phase, the groups will work on fleshing out details of their ideas and designing their implementation. The projects will then be presented during the Foundation 2° annual conference in November 2018.

Share of greenhouse gas emissions in Germany:

**18%**

Transportation

**20%**

Manufacturing

**30%**

Buildings

**“Participating companies work up innovative project ideas that they then plan to implement. This approach enables companies to make a contribution to reducing their greenhouse gas emissions.”**



Andrea Dreifke-Pieper,  
Head of Strategic Corporate Partnerships  
at WWF

# The next generation: a sharing economy for children's clothes

The useful life of children's clothes, baby carriers and maternity wear is very short. kilenda offers an alternative – a rental service for kids' clothes that is now also available in cooperation with partner Tchibo.

**6,300**

litres of water are  
needed to produce a  
child's t-shirt.

Every year, people in Germany throw out over a million tonnes of textiles. Trousers, t-shirts and shoes end up in old clothes collections or even in residual waste. Children's clothes in particular are typically not needed for very long – kids grow out of them fast. Kilenda, a brand owned by Interseroh subsidiary Relenda, is helping to remedy this problem by giving products a longer life as part of its sustainable, online 'rent to

wear' service. The start-up rents out high-quality children's clothes, maternity wear, baby carriers and complete outfits for children aged three and under – all produced using sustainable manufacturing. The sharing economy approach extends the lifetime of the individual products – meaning that fewer new items of clothing need to be produced.



With their rental service, kilenda and Tchibo are actively pursuing the goal of resource conservation.



### Cooperation for conservation

kilenda has now secured the Hamburg-based family-run business Tchibo as a major strategic partner. Since January 2018, kilenda and Tchibo have partnered in children's clothing and the 'Tchibo Share' online platform. kilenda founder Hendrik Scheuschner: **"Tchibo saw the attractiveness of the sharing economy model as a huge plus for its customers and the environment.** After discussing a number of options for working together, Tchibo decided to offer part of its children's clothing range for rental. Our joint platform also helps us to attract new customers for our business model."

**"The longer an item of clothing is worn, the better it is for the environment,"** explains Nanda Bergstein, Director Corporate Responsibility at Tchibo. The rental model adopted by kilenda and Tchibo not only conserves resources but also helps change consumer behaviour. "Our goal is to bring about a change in awareness in relation to clothing," Scheuschner adds. "Instead of buying clothes, we want people to focus on using them, valuing them and conserving the resources used to make them." To achieve these goals, kilenda is now planning to expand its services.

Incidentally: with its rental model, **kilenda was a top three finalist at the 2018 GreenTec Awards in the 'Lifestyle' category.** The awards are presented annually to the best projects dedicated to environmental protection.

# 95

items of clothing can be found in the average German wardrobe. One in five of these is typically never worn.

## Eco-friendly re-fuelling

Every day, around a million customers visit one of the filling stations run by the Polish oil company ORLEN. And resources are consumed in many places – at the pump, the carwash or the coffee-to-go machine. Interseroh wanted to make a difference here and so it proactively contacted Poland's leading filling station operator. The idea was to raise awareness among Polish customers about the impact on the environment caused by a car journey

and filling station activities. The proposal received a warm welcome: **ORLEN worked with Interseroh to develop a customer leaflet promoting more environmentally-aware attitudes to car and filling station use.** From environmentally-friendly motoring and winter tyre storage through to the right way to dispose of packaging and how to prevent plastic waste – all of the tips and advice have been published as a compact customer guide.



**"We've been working with Interseroh to come up with tips and advice for more environmentally-conscious behaviour to raise awareness in society and introduce the concept of resource conservation."**

Józef Węgręcki, Member of the Management Board, responsible for operations, ORLEN

# solutions for a strong company

Trends such as digitalisation offer major opportunities for the circular economy. To make the most of them, everyone must play their part. We pursue and promote digitalisation within our strategic processes, and orient our business on the needs of the future. We also help our employees prepare for this new world of work. We depend on their support to achieve our goal of 'zero waste solutions'.

In 2017 Interseroh employed

**1,583**  
people,

more than 10% of whom took part in our DigiCampus training courses in the same year.

In 2017, Interseroh reported sales of

**515.6**  
million euros.





# Circular economy 4.0: time for a change

The digital transformation is one of the most momentous challenges of our time. It exerts an influence on all of Interseroh's business activities and can facilitate greater sustainability in many areas. This is why we are taking ambitious steps to make our business fit for the future. We are preparing our employees for the new, digital workplace and systematically promoting digitalisation within our processes to achieve the ultimate goal of an end-to-end circular economy.

## Strategic use of technological advances

Interseroh has produced a high-level digitalisation strategy to ensure a holistic approach to the digital transformation. In the first two phases of this strategy, we are working to automate our partner and supplier network while also focusing squarely on customer information management. In short: we are rethinking and streamlining our processes. To do so, we are developing new ways to communicate and automating workflows while redesigning them for plannability.

This work is behind the launch of the new Interseroh Waste Management Portal, which enables our partners to view business transactions at any time and access relevant information. Data and activity records are uploaded automatically, and accessible to both parties in full at all times.

## Automated recycling processes

In the third phase of our strategy, **we are addressing very recent developments such as blockchain and the Internet of Things.** These trends offer the keys to making progress with networked processes and developing

data-driven business models – and thereby creating new 'zero waste solutions'. The Internet of Things makes it possible to network objects together and, as a result, derive and execute direct actions. A waste container of the future could simply report back when it is full, for example – and the subsequent waste collection would also be an automated operation. And blockchain's full potential is only now starting to be exploited.

## Growing with digitalisation

Digitalisation can also be deployed to expand our target segments. Alongside our enterprise clients, we can now also start to branch out into smaller B2B business and consumer markets. One example is our **online platform [www.brandused.com](http://www.brandused.com)**, where we offer a range of used and refurbished PCs, phones and monitors, and therefore sell directly to end users. In the coming years, the digital transformation will give us substantial potential and multifaceted options for developing both ourselves and our 'zero waste solutions'.

**“To promote the digital transformation within the company, we work together in agile, interdisciplinary teams. The efficient processes and innovative solutions we develop benefit our customers, partners and the circular economy itself.”**

Frank Schroeder, Head of IT, Interseroh



## Zero accidents at work

**“Our ‘zero accidents’ campaign had the effect of making our employees feel even more responsible for one another – and talk about safety precautions has led to more general discussions. Even in the first year, we already noted a sharp drop in accidents.”**

Markus Ohlbrecht, Head of Depot Management, Interseroh

We take our employees' health and safety very seriously, and we therefore make every effort to prevent work accidents occurring at Interseroh. To improve our employees' own sense of personal responsibility in relation to occupational safety, we launched our 'zero accidents' campaign in 2017. At Interseroh's facilities, display boards have been set up that clearly show the number of days since a reportable accident for all to see. And when a plant manages to tally up 90 days

with zero accidents, all of its employees receive a voucher. Aimed at lowering accident statistics while increasing employee awareness for safe working practices, this campaign has already reaped some initial successes: at our Mönchengladbach plant, the **number of days on which employees were absent as a result of accidents fell by around 80 percent during the first year.** Since feedback has been so positive, Interseroh is now expanding the campaign to other sites.

# Culture – creating a common good

‘We are one’ is the starting-point for a new feeling of belonging. Together, we are working to create a company culture that every employee can identify with and put into practice. During an interactive and multi-stage process, our employees and management staff have worked together to redefine Interseroh’s culture and identity.

## 1,583

people were employed at Interseroh in 2017.

About

## 10%

of these employees were involved in the creation of the new company culture.

The stage was set by Interseroh’s employees: How do we want to work together in the future? What is important in our conduct towards one another? And what does Interseroh stand for? During a comprehensive process, to which everyone – regardless of job role, facility, age or affiliations – was invited to contribute, our employees discussed and defined answers to these questions. The results are both succinct and significant: we should be guided by the values of **respect, communication and responsibility** as we pursue our mission of ‘zero waste solutions’.

Our culture is marked by our respectful, appreciative and egalitarian conduct towards one another. We also work to improve equal opportunities among our employees by not merely acknowledging but actively welcoming diversity and seeking to learn from one another.

**“We shape our company culture every day by the actions that we take. We focus on the three values of respect, communication and responsibility, which serve as a guide to our conduct.”**

**Claudia Marr**, Head of Recruiting and HR Development, Interseroh



We promote a culture of active communication, we network and we generate ideas for the circular economy. These values are also reflected by our innovative solutions and trusted services, which we develop jointly with our customers. And we also take on responsibilities by working to actively shape the future and showing commitment. Under the title of ‘we are one’, these values are now codified as the Interseroh company culture.

### Embracing our culture

Our shared values and our daily contact with one another are what unites us – whatever job we perform at Interseroh, whatever our background, beliefs or choice of partner. Whether management staff or employee, we coordinate our efforts together to further deepen our shared understanding of our common values. In the future, many initiatives will be used to ensure that we keep our culture alive: we are one.



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Stollwerckstrasse 9a  
51149 Cologne  
Germany

Tel. +49 2203 9147-0  
Fax +49 2203 9147-1394  
www.interseroh.de/en

## Sustainability contact

Sybilla Merian  
Sybilla.Merian@interseroh.com  
Tel. +49 2203 9147-1292

Stephanie Thiele  
Stephanie.Thiele@interseroh.com  
Tel. +49 2203 9147-1116

sustainability@interseroh.com  
www.interseroh.de/en/sustainability

## Photos

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INTERSEROH Dienstleistungs GmbH  
Stollwerckstrasse 9a  
51149 Cologne  
Germany  
Tel. +49 2203 9147-0  
Fax +49 2203 9147-1394  
[www.interseroh.de/en](http://www.interseroh.de/en)

[sustainability@interseroh.com](mailto:sustainability@interseroh.com)

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