

The REMONDIS Group magazine

# REMONDIS AKTUELL

remondis.com



## Built on sand?

The end of an important raw material

REMONDIS  
AKTUELL

online: [remondis-aktuell.com](http://remondis-aktuell.com)



### So much sand ... and yet so little!

No-one had thought this raw material was in danger of becoming scarce. One way to solve this dilemma: to recycle construction waste

### All systems go at TSR

The relocation of the company's head office to Lünen was not the only reason why there is an atmosphere of change at the metal recyclers

### Quo vadis Germany?

The uncertain political situation is threatening to delay important environmental legislation. An interview with Herwart Wilms

## So much sand ... and yet so little

Page 4



## 60 years of Plano: an interview with Norbert Rethmann

Page 12



## In the heart of the capital

Page 23



### LATEST NEWS

- 4 So much sand ... and yet so little
- 6 "We need a Green Deal"
- 8 "What we need are politicians who are prepared to make decisions"
- 11 The plastics pioneer
- 12 60 years of Plano: an interview with Norbert Rethmann
- 14 Turning the spotlight on apprenticeships
- 16 Australia: discounted flights for REMONDIS customers
- 18 All systems go at TSR
- 20 China – the dragon is becoming greener

### SERVICES

- 30 Successful team work
- 32 Analyses with added benefits
- 34 Work safety practices honoured

### NEWS IN BRIEF

- 40 BDI meets at the Lippe Plant
- 40 BMUB supports TetraPhos®
- 40 REMONDIS supports training exercise on Sylt
- 41 REMONDIS experts outline the 'Circular Economy 4.0'
- 41 Open day at the sorting plant for 'mouse' fans

### RECYCLING

- 22 500 bottle caps for a life without polio
- 23 In the heart of the capital
- 26 From landfill to research centre
- 28 Between the Rhine and the Wupper

### WATER

- 35 Water for Istanbul
- 36 Structural change and future mobility
- 38 Flash floods hit Goslar

### PEOPLE

- 42 A single shot for greater equality
- 43 Impressions

Flag

Editor: REMONDIS SE & Co. KG // Brunnenstr. 138 // 44536 Lünen // Germany

T +49 2306 106-515 // F +49 2306 106-530 // remondis.com // info@remondis.com

Images: Fotolia (p. 1, 25, 35, 36); iStock (p. 7, 20, 23, 44); Plainpicture (p. 4); iski (p. 35) Uwe Epping (p. 38, 39)

Press officer: Michael Schneider, Anna Ephan // Layout: www.atelier-14.de // Print: Lonnemann, Selm





Ludger Rethmann, REMONDIS Board Member

**Dear Readers!**

There is a political stalemate in Germany at the moment. With four of the six parties elected to Germany's new Parliament failing to find a compromise so that they can form a government, the country's political future – at the time we went to print – is more uncertain than ever. A so-called Jamaica coalition, which gets its name from the colours of the different parties: black for the two Conservative coalition partners CDU and CSU, yellow for the Liberals FDP, and green for the Bündnis90/Die Grünen (the colours of the Jamaican flag), would appear to no longer be an option after the parties' exploratory talks broke down on 19 November. At the same time, the Social Democrats seem to be sticking to their decision not to form another 'grand coalition' with their Conservative counterparts. There are certainly some huge political hurdles to overcome. Whilst some would prefer more state control, others are looking to follow a more typically liberal course with greater freedom for businesses. The Green's desire to speed up the move towards an energy sector without fossil fuels (including shutting down coal-fired power stations and getting rid of internal combustion engines earlier than planned) is proving to be an obstacle for those with more conservative political interests. And, whilst the Liberals are finally fighting to expand digital networks in rural areas, the Conservatives would appear to be merely paying digital lip service to this subject.

And yet there is no time to lose. The economy is already going through a structural change as a result of the next industrial revolution and this revolution is both digital and electrical. It has come at a time when the world is facing the huge challenges of climate change and a growing number of environmental problems which, in the end, will make it difficult to meet the global population's needs.

Even sand – a substance we would seem to be surrounded by – is becoming scarce. And, once again, it is our industry that has come up with a solution. If we are to curb global warming, move away from fossil fuels and conserve our planet's raw materials, then setting up a genuine circular economy must be at the very centre of a government's policy. If Germany, a country with so few natural resources of its own, is to remain an important industrial location in the future as supplies of raw materials become ever scarcer, then the spotlight must be turned on recycling. Recycling must be at the forefront of everyone's minds, especially of product designers. The foundations were created for this when the Packaging Law was introduced during the last legislative period as this lays down product responsibility and market-based measures to promote recycling. What is needed now is to transfer these standards so that they apply to all products.

There is always much to celebrate at the end of the year. REMONDIS is, for example, celebrating sixty years of plastics recycling at RE PLANO and, of course, that you – our customers, friends, partners and employees – have remained loyal to us throughout the year. Together, day by day, we can help make the world that little bit more sustainable.

We would like to thank you for your great support and collaboration over the last twelve months and wish you a Merry Christmas and a happy, healthy and successful New Year.

Yours

Ludger Rethmann

# So much sand ... and yet so little

SUPPLIES OF YET ANOTHER RAW MATERIAL ARE GETTING DANGEROUSLY LOW –  
A MATERIAL THAT FOR SOME MAY COME UNEXPECTEDLY

We all have the same picture in our minds when we think of our world's many beaches and deserts: miles and miles of sand stretching in every direction. In fact, around 35 percent of the Earth's surface is covered in sand – and this area is getting bigger not smaller. So surely at least this raw material is in abundance? Unfortunately, however strange it may sound, it isn't. So what is behind the latest bad tidings that supplies of this material are getting dangerously low – something that even the United Nations Environment Programme (UNEP) is taking a closer look at? And more importantly: what can we do to turn the tide?

## Sand – the 'Jack of all trades'

Sand is not simply sand. On the contrary, there are many different types with each having its own individual properties. And it is these properties that determine how and when it can be used. Sand from rivers, lakes and seas is fractured, uneven and angular making it a suitable aggregate for the construction industry. In fact, this sector has the highest demand overall with two-thirds of concrete being made up

of sand. In contrast, desert sand is smooth and rounded as a result of being so exposed to the elements. This material is, therefore, not an option for the building sector as the cement would not be able to stick and the higher salt content reduces its half-life. And this is where the problem lies. Whilst we may indeed be surrounded by sand, the quantities of construction sand are becoming increasingly scarce.

Whilst we may indeed be surrounded by sand, the quantities of construction sand are becoming increasingly scarce

Sand is not only important for building roads, embankments and houses. It is used in well and drinking water filters, is the main material (quartz sand) for producing glass and is important for making toothpaste, detergents, paper and cosmetics. As it contains silicon, sand is needed for high-tech products and can be found in solar cells and computer chips. Being such a versatile raw material, sand truly is a 'Jack of all trades'.

### Building on sand

It is precisely because it is so versatile that sand is now the most overexploited raw material in the world after water. The main reason for this is the global building boom, in particular in Asia. China alone consumes around 60 percent of all sand and gravel mined around the globe. Within just three years, it has processed more sand than the USA in a whole century. Singapore, the smallest country in south-east Asia (in terms of surface area), is quite literally built on sand. This city state, whose population has tripled over the last 50 years, has increased its surface area by 20 percent since the beginning of the 70s by expanding its coastline with sand – and it plans to reclaim more land. Dubai began building its Palm Islands back in 2001 and has, to date, used around 640 million tonnes of sand and stone just for this project. This sand has not come from its own desert but has been imported from Australia. A lucrative business for Australia as it brings in around 5 billion dollars every year.

Germany primarily uses sand from the sea to protect its coastline, the most well-known example here being the Island of Sylt. Some countries, such as Cambodia, India, Indonesia and Morocco, have restricted or even banned the mining of sand but these regulations are, for the most part,

completely ignored. Sand is simply being removed with no thought whatsoever about the long-term impact. This careless attitude has led to some very serious political and environmental consequences: two dozen small islands in Indonesia have fallen victim to this massive extraction rate and simply ceased to exist. 50% of the beaches along Morocco's coastline have disappeared over the last few years. All that is left is bare rock. Huge craters up to 10 metres deep are appearing on the sea bed as massive dredgers remove up to 400,000 cubic metres of sand every single day. This process stirs up the sediment (and all the living creatures in it), removes it and destroys the ecosystem vital to so many microorganisms and animals. Fishing communities, which are so dependent on these biospheres, are no longer able to support themselves.

### From dwindling supplies of sand to the materials of the future

Whilst the situation here in Germany may not be as precarious as elsewhere around the world, action still needs to be taken. We cannot simply ignore the negative impact that these mining activities are having on our environment or the fact that we consume far more sand than nature can produce. What alternatives are there to sand though? What direction do we need to head in when it comes, for example, to thinking about renewable or innovative building materials? What options are available to recycle sand and concrete?

To find out the answers, we put these questions to Dr Rudolf Diegel from REMEX Mineralstoff GmbH, a company that specialises in processing and recycling construction and mineral waste and in producing recycled aggregate.

## CONSUMPTION OF SAND – A FEW FACTS & FIGURES



**15bn tonnes**

are extracted from land & water around the world every year



**200 tonnes**

of sand can be found in every detached home



**3,000 tonnes**

are needed to build a block of flats or a hospital



**4.7 tonnes**

are consumed on average per person per year in Germany (Singapore heads the list: 5.4 t/ inh.), **80% of which** is used to build houses, roads & bridges



**240m tonnes**

of sand & gravel are mined in Germany every year



**30,000 tonnes**

of sand are needed to build a single kilometre of a six-lane motorway – every year, China builds **roads stretching 146,000 kilometres**

**10m tonnes**

of this is quartz sand

# “We need a Green Deal”

AN INTERVIEW WITH DR RUDOLF DIEGEL, REMEX

**RA:** Dr Diegel, do the different sectors that use sand actually realise that supplies of this resource are finite and becoming increasingly scarce?

**Dr Rudolf Diegel:** The industries that are the biggest consumers of sand are well aware of this fact simply because it is getting more and more difficult for them to get a permit to mine or extract sand. This is already proving to be a major problem for Singapore which, to a certain extent, is literally built on sand. Most of the sand that it uses to reclaim land comes from the Philippines and Malaysia – where dredgers remove sand from the sea bed right next to their coastlines. These countries have now banned it from importing sand as these dredging activities have had such a negative impact on their environment. And this is just the beginning. Global consumption of sand far exceeds our planet’s reserves. This is bound to have an effect on the price of sand over the medium term and consequently on the construction industry as a whole.

**RA:** What alternatives are there to sand then? Are there any materials recovered from recycling processes that can be used as a substitute?

**Dr Rudolf Diegel:** Unfortunately, this is not as easy as we would like it to be. The facilities used to process construction waste primarily produce sieved or crushed sand. With supplies of sand getting scarce, these certainly are very valuable materials. Sieved sand, however, can only be used to make road beds as its grains are rounded. It can’t be used to construct buildings, the area where the demand for sand is the highest. The same is true for the crushed sand which is, first and foremost, suitable as a bedding sand because of the angular shape of its grains. At the moment, the only way to produce a substitute raw material that is suitable for constructing buildings is from recycling concrete. This recycled product, however, does not have a good image, especially in Germany. The Swiss are more progressive here. They have laws making it obligatory to use recycled aggregate. Another material of interest is recycled IBA from waste incineration plants. It is a very good aggregate if it is processed or washed properly to ensure all environmental parameters have been met, as can be seen in the Netherlands.

## 60%

of all sand and gravel mined around the globe is consumed by China. Within just three years, it has processed more sand than the USA in a whole century.



Dr Rudolf Diegel,  
Authorised Signatory  
REMEX

**RA:** Talking about recycling: what possibilities are there at the moment to recover a material from IBA or construction waste, such as concrete, that meets the stringent quality standards set out for aggregate?

**Dr Rudolf Diegel:** The first thing we need to see is a change in attitude of all three groups involved. These are the environmental sector, which offers the recycled raw materials, the customers, which must be prepared to buy these materials, and the public sector, which must show they want to promote resource conservation and encourage sustainable supplies of raw materials by drawing up appropriate laws. The first thing we need, therefore, is a "Green Deal", similar to the one in the Netherlands. There is a general lack of awareness here, though – IBA, for example, is not considered to be an attractive alternative for businesses until they find it difficult to get hold of the supplies they need. Everything always depends on the supply of primary raw materials. This growing shortage of sand may get people thinking differently now.

Our industry, though, has to get things in order and set the course for the future. Many projects fail because they don't have the right logistics or technical infrastructure. What we need is input material that is of a consistently high quality – ideally material that comes from specific building dismantling projects and that has been carefully segregated at source.

And we must invest in more technology and better technology to ensure the material we recover is of a really high quality.

**RA:** Could we not solve this problem by employing a few technical tricks so that we can use desert sand or would that simply lead to us destroying yet another ecosystem?

**Dr Rudolf Diegel:** Desert sand is totally unsuitable as a construction material because of its high chlorine content and the shape of its grains. It lacks stability and is not robust enough. There are no two ways about it. We have to achieve better recycling results. We believe the recycling of IBA from waste incineration plants has great potential here. This is not a waste product, it is a valuable source of raw materials for the future.

**RA:** Dr Diegel, many thanks for the interview.



**Global consumption of sand far exceeds  
our planet's reserves**

Dr Rudolf Diegel, Authorised Signatory REMEX

# “What we need are politicians who are prepared to make decisions”



HERWART WILMS ON THE INDUSTRY'S EXPECTATIONS OF THE NEW GERMAN GOVERNMENT

All of the parties represented in the newly elected Bundestag [lower house of the German parliament] have promised to do more to promote environmental protection and recycling during this next legislative period. What's more, conserving natural resources and using raw materials more efficiently will be key issues throughout this new parliamentary term. Having said that, however, each party has very different ideas about how this should be achieved. Conflicts are already emerging, especially in the area of producer responsibility. We asked Herwart Wilms, REMONDIS managing director and Vice President of the BDE [Federal Association of the German Waste Management Industry], what changes the recycling sector would like to see over the next four to five years.

**A mere 7 percent of the German electorate felt that the environment and climate change were important topics for the last election. Do you find this alarming?**

I'm not so worried about this figure because it comes from a survey held during the general election. I get the impression that society believes this subject has been "done and dusted". Other studies, such as the one recently published

by the Federal Environment Agency (UBA), make it very clear that people genuinely believe environmental issues to be extremely important. Indeed, the population reacts strongly if attempts are made to violate climate or recycling targets. And they don't only react when others break the law, they also feel better when they themselves do something to protect the environment. Just one example here is that 75 percent of all Germans say that they separate their waste to help prevent climate change. Our industry agrees with them wholeheartedly. This is the easiest and the best way that people can help.



The first chapter of the UBA's study takes a look at how environmentally aware German people actually are



### **On balance, were you disappointed or impressed by the last four years?**

If those are the only two choices then I can't say I was impressed. The truth is somewhere between the two. Many things were achieved during the last legislative period. This includes the new packaging law – although we had hoped for more here. Then there was the new commercial waste ordinance – here, too, we had hoped for a bit more substance. However, it is a good start and we hope that the enforcement agencies will be able to ensure that the Parliament's targets are met. At the end of the day, this will determine whether our industry has the security it needs to invest or not. There is also a feeling of disappointment though looking at the many subjects that were left by the wayside. Parliament did not, for example, pass an ordinance regulating soil and groundwater protection and recycled aggregate. Nor did the recyclables law win through even though this would have meant far more recyclable materials could have been recovered from households. What I'm really disappointed about is that we – as a society – have not succeeded in ensuring that the very most is made of household waste and that all the materials that could potentially be recycled are recovered. 7.8 million tonnes are still being wasted. Instead far too much time was spent on arguing about the question "Who should be allowed to collect it?". We have the know-how and we put forward proposals how to exploit this potential. In the end, though, the decision made was not in favour of or – if you prefer – was against this law. What we need are politicians who are prepared to make decisions. All the different subjects were on the table, they were perfectly clear and everyone knew about them. On balance, the results were not so impressive.

### **What three things would you like the new German government to achieve?**

There are a number of things that still need to be changed. Such as the ordinance I just mentioned. What's more, the fertiliser ordinance needs to be revised. Liquid manure, which has a huge negative impact on the quality of our groundwater, is currently on a par with compost, which is totally harmless. This is simply wrong. It makes a mockery of all those people who separate their waste in their homes. Secondly, we have to actively increase the amount of materials we recycle because we are an industrial nation with very few raw materials of our own.

We have to create a genuine circular economy in which companies think about the recyclability of their new products whilst they are actually designing them. And consumers must be made aware of this. Which is why we are calling for a label that makes it clear to shoppers whether – or to what extent – a product can be recycled. Moreover, if producers are to be made responsible for recycling their products, then there must be a market for the recycled materials, a market accepted by society as a whole, so that a company's business remains viable. This would also protect us against moves made by governments to close their



markets to recycled products, such as China is doing at the moment. The third thing is something we have been calling for for a long time now – that all firms providing the same service should be subject to the same tax. One company carrying out kerbside collections should not be taxed differently to another firm providing exactly the same service. Whilst this is self-evident for us, it is not, unfortunately, always the case for some public sector service providers.

### **Who would you like to see becoming the next Environment Minister?**

It would be a person who knows what the important issues are and who has the courage to push these through their coalition government – well aware, of course, that they won't be able to keep everyone happy. Whoever becomes the next Environment Minister must have the strength to make the necessary decisions. And the courage! ►

**"We have the know-how and we put forward proposals how to exploit this potential. In the end, though, the decision made was not in favour of or – if you prefer – was against this law.**

**What we need are politicians who are prepared to make decisions."**

Herwart Wilms, REMONDIS Managing Director

► **What can the industry do to get politicians to prioritise sustainability?**

It must make it even clearer just how much the industry contributes towards protecting the environment and curbing global warming. With the global population expected to reach 10 billion and the per capita consumption of natural resources increasing all the time, we are heading towards a society that will not have enough raw materials. Our sector not only has smart solutions that enable raw materials to be reused, it also reduces energy consumption and cuts carbon emissions. Even those materials that we thought would last forever are becoming scarce – construction sand to name just one. We need to offer solutions to these problems. What's more we need to set sensible and responsible priorities when different goals clash, for example between CO<sub>2</sub> emissions, energy efficiency and emissions of nitrous gases.

**Given the opportunity, what would be the first political decision you would make?**

I would extend product responsibility to include all consumer and industrial goods. Companies should be rewarded for investing time and money to make their products recyclable; those that don't do this should be in a worse off position. Producer responsibility must apply to everyone not just manufacturers of packaging. This also means supporting and promoting the use of recycled materials. One is not possible without the other if we want to be a sustainable and responsible industrial society. This is especially important for the industrial businesses that wish to manufacture their products here in the future as they will need a reliable supply of raw materials that cannot be mined here in Germany.



**A VISIT FROM THE CHANCELLOR**

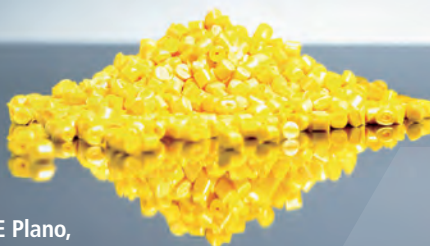
Christian Monreal, Public Affairs REMONDIS, was delighted to receive a visit from the German Chancellor, Angela Merkel, during a meeting of the 'Junge Union' (German Young Conservatives) in Dresden.

"Ms Merkel was very friendly and very interested in talking about recycling. I hope she really does focus on this subject over the next four years," Christian Monreal commented.

# The plastics pioneer

60 YEARS OF PLANO –  
CELEBRATING PLASTICS RECYCLING

Plastikwerke Nordwalde is celebrating its 60<sup>th</sup> anniversary this year. It was from this company that REMONDIS' subsidiary, RE Plano, later emerged – its name being made up of the first few letters of the company's three names. The factory had originally been set up to mass produce plastic. Its business soon changed direction, however, when it became the REMONDIS Group's first plastics recycling facility.



After Norbert Rethmann had begun developing his own ideas and technology in the German town of Selm to recycle plastic, he then purchased Plano in 1982 and turned it into the first plastics recycling facility. This site was to become the centre of plastics recycling. Different types of processing technology, such as magnet and eddy current separators, were developed and improved here together with the help of engineers. More and more companies began to take an interest in what was happening in Nordwalde and tried to get a foothold on the market as well. Even back then, Plano spent much time looking at how the business could be further developed: DM 2 million were invested in a second treatment line, which included shredding, washing and separator technology, as well as in a new extruder.

The then environment minister, Klaus Matthiesen, attended the official opening. Plano was proud to have created a market for recycled plastic granules and of its position as the pioneer of plastics recycling. And yet, to begin with, German red tape made it impossible for the business to be a success. Plastic products, such as pipes, pallets and bins, are all subject to DIN standards – and back then these standards did not allow the use of recycled plastic. Tests on the product ruled that the recycled plastic was too rough and not of a sufficiently consistent quality. Norbert Rethmann found these findings absurd as he was utterly convinced of the quality of his company's recycled plastic granules. And so he made another attempt when he purchased the Lippe Plant in Lünen and looked for niches in the market. A second plant was commissioned in Lünen in 1996 which focused exclu-

sively on recycling plastic packaging film. Initially, this idea proved to be a success but then a new problem emerged as the market became increasingly globalised: with the introduction of dumping prices, huge volumes of this plastic were suddenly being shipped to China. The resulting lack of input material meant the recycling facilities were making a loss and both were closed down in 2005.

Growing consumption and a new sales concept brought Plano's business back to the fore. The facility in Lünen was converted and recommissioned; the plant in Nordwalde remained closed and was later sold. Managing director, Ralf Mandelatz, commented: "Fortunately, we can leave the past where it belongs – in the past. The demand for high quality recycled raw materials has grown and there is a huge potential here. New fields of application are being found for recycled raw materials. This gives us the security we need to invest in our business and further strengthen our position as the market leader." A number of different plastics are recycled at the Lippe Plant now, including polythene (HDPE), polypropylene (PP) and polyamide (PA). Further material streams are to be added to this list next year. In 2018, the facility will begin processing polystyrene (PS) and ABS that has been sorted by Electrorecycling to transform these two streams into high quality recycled plastic granules and compounds.

 **RE PLANO**<sup>®</sup>

**"The demand for high quality recycled raw materials has grown and there is a huge potential here."**

Ralf Mandelatz, Managing Director at RE Plano

# 60 years of Plano:

AN INTERVIEW WITH NORBERT RETHMANN

**Mr Rethmann, Plano's 60<sup>th</sup> anniversary is also a celebration of plastics recycling. What was this time like for you personally when the first attempts were made to recycle plastic?**

Plastic was the first material – apart from paper and glass – that I tried to recycle so that it could be reused. I knew that plastics recycling would be worth its while, I just didn't know how to do it back then. With hindsight, it was a good thing that I didn't know. Had I had the scientific basis for starting such a project, I wouldn't have gone down that route at all. The challenge I had to face was adding my personal experience to theory and science. The first experiments that I carried out – which involved shredding the material, heating it up and stretching it – made it very clear that the biggest problem with recycling plastics would be removing the dirt stuck to the material. The method I used back then simply couldn't produce the quality that customers expected to get. I had to clean the plastic beforehand and, as some people may remember, these experiments ended up ruining a number of my wife's washing machines. What I learned though was that a much larger industrial washing machine would be able to remove the dirt and fat from old plastic products. This – together with an agglomerator and extruder – meant I really could make a marketable product.

**How important have plastics been for you since then?**

To begin with, plastics recycling at our company certainly had its ups and downs: after spending all that time and effort to find a process to recycle plastics, I came back from a trip to the USA only to find that the board member responsible for this business had closed down the whole of the plastics division. Of course, this step had been agreed on and the decision was, without a doubt, the right one from a business point of view. Despite this, I did not give up my plans because I was absolutely certain that this material would be extremely important in the future – both for the company and for German industry as a whole. Nowadays, we never use the word 'plastic' in the company. Instead we talk of PP, PE and PET. Very few materials are as versatile as plastic and many industries have discovered that they can use it, too. It has, therefore, become considerably more important.

Norbert Rethmann, recycling pioneer and honorary chairman of the supervisory board of the REMONDIS Group

Old bins such as these (which used to be sent to landfill back then) were the catalyst that prompted Norbert Rethmann to look into how plastic might be recycled





### How do you see plastics recycling developing in the future?

If Germany is to invest in modern plastics recycling, then it is essential that more thought is put into the design of products and packaging so that they are easier to recycle. The manufacturing industry must play their part here. What's more, more must be done to promote the development of innovative technology that can sort and recycle the many different types of plastic. The plastics being installed in modern products are getting smaller and more complex which means new recycling techniques are needed to ensure they can be separated according to type. At the end of the day, this material can only be recycled if it can be sorted correctly. Consumers can help increase the use of recycled plastic simply by asking for and purchasing recyclable products.

### Germany's so-called 'Dual System' used to be known as the Green Point. Was the Green Point a step forward for plastics recycling?

The Green Point certainly acted as an important driving force for plastics recycling. Light sales packaging causes the biggest headache for our industry. There have been so many discussions about this type of waste. What's the best way for it to be separated? Who does it belong to? Is it actually being recycled? The packaging industry and the recycling sector certainly have some controversial targets on their agenda which the Dual System must pool together and evaluate. However, I do believe that the fact plastic is actually being recycled can, for the most part, be put down to the efforts of the private sector companies in our industry. The primary driving forces behind plastics recycling are creating genuine material life cycles, improving recycling and vehicle technology and, ultimately, optimising new products. The role of the Dual System is to formally enforce the regulations and ensure there is competition – for example, recycling firms that do not operate their own dual system should also be allowed to recycle the sales packaging. The Dual System must establish the framework conditions. This is certainly an important role but has little to do with the actual recycling.

### Looking at the environment, do you think plastic is a blessing or a curse?

Every single piece of plastic that ends up in the environment is a curse. It doesn't degrade and is lethal for animals and soils as well as for our seas and oceans. Plastic is only a blessing if it is used as a recyclable material. Every tonne of recycled plastic reduces carbon emissions by 1.2 tonnes. Here in Germany, we are privileged to have a scheme that enables plastic to be collected, transported and recycled. We have been able to make it economically viable to recover, recycle and return plastics to production cycles. Many countries, unfortunately, have not reached this point yet. Plastic is most definitely a curse for them. It is destroying their landscape which is often their biggest asset – for example, for their tourist and fishing industries. We have to pass on our values regarding plastic to these countries to protect their inhabitants and environment. Having said that, we also need to raise awareness here in Germany: every summer, you can see huge piles of waste in our parks that have been carelessly discarded by the public. Some of this litter is bound to find its way into our sewer systems and end up in our rivers and, ultimately, in our seas and oceans.

**"Every single piece of plastic that ends up in the environment is a curse. It doesn't degrade and is lethal for animals and soils as well as for our seas and oceans. Plastic is only a blessing if it is used as a recyclable material."**

Norbert Rethmann, Honorary Chairman of the Supervisory Board of the REMONDIS Group

### What decisions should politicians make to improve plastics recycling?

Brussels should introduce a Europe-wide ban on sending plastic to landfill. With natural resources becoming either scarcer or more expensive, there is a growing awareness across Europe that waste should be seen as a source of raw materials that could be reused in the country. What's more, it would be great if manufacturers were made responsible for ensuring their products can be recycled. And businesses should be rewarded for using recyclable materials. This would help prevent naturally sourced raw materials, which cannot be recovered from composite materials, from being wasted. Recycled raw materials are the best way to promote sustainable development – an argument that is becoming ever more important on the market.

# Turning the spotlight on apprenticeships

REMONDIS PUTS ON AN IMPRESSIVE DISPLAY OF MODERN TECHNOLOGY DURING THIS YEAR'S LÜNEN APPRENTICESHIP EVENING



Using a VR headset to take a walk through a scrap metal facility, reversing a lorry correctly in a collection truck simulator or trying out the recruitment test that an industrial management assistant would have to take – there was plenty on hand to entertain the visitors to this year's 'Lünen Apprenticeship Evening'. The company's current apprentices had set up individual stands in front of REMONDIS' head office to provide information about 16 different apprenticeships offered by the company. The friendly atmosphere made everyone feel really welcome and a presenter had been brought in to entertain the visitors and bring a smile to their faces.

It was clear that the evening was going to be a success the moment the event started at 6pm. "The first shuttle bus arriving from the city centre was absolutely packed. The stands have been busy non-stop since then," commented apprenticeship manager, Kristina Rehahn. The dry weather and mild temperatures meant that many of the schoolchildren travelled to the Lippe Plant by bike. This year, REMONDIS was joined by teams of apprentices from TSR, Wirtschaftsbetriebe Lünen, Xervon and Buchen, UCL, the IT services division and the Lippe Plant's own fire brigade.

The young visitors were able to put all their questions to the many apprentices and trainers at the event – who were easy to spot thanks to their high-vis vests. "The majority of the people visiting us were really well prepared and knew exactly which apprenticeships they were interested in," Kristina Rehahn continued. She was really happy with the way this year's Lünen Apprenticeship Evening went, with the company welcoming even more visitors than last year.



TSR had a number of VR headsets at its stand that enabled the young visitors to take a walk around its scrap metal facility in Duisburg



The visitors were fascinated by the experiments put on by UCL's chemical laboratory assistants in their mini-laboratory



The collection truck simulator made it clear just how tricky it is to reverse and park such a vehicle

"The majority of the people visiting us were really well prepared and knew exactly which apprenticeships they were interested in."

Kristina Rehahn, Apprenticeship Manager at REMONDIS



REMONDIS' current apprentices had set up a number of stands to present a variety of commercial apprenticeships; they also held interviews and gave some valuable tips about how to apply for jobs



BUCHEN presented its different environmental service activities and apprenticeships



REMONDIS Production, which is responsible for the whole of the Lippe Plant in Lünen, put on a number of displays including a plaster casting machine; the visitors were even able to take their works of art home with them

# Australia: discounted flights for REMONDIS customers

## PARTNERSHIP WITH QANTAS' BUSINESS REWARD PROGRAMME STRENGTHENS BUSINESS TIES

This summer, REMONDIS entered into a new partnership with QANTAS, Australia's largest airline, by joining its Business Rewards Programme.



Customers of selected services from REMONDIS in Australia can now obtain QANTAS Business Reward points with eligible transactions for recycling and industry services, if their company is also a member of

QANTAS' Business Rewards Programme. One bonus mile is now added to their QANTAS Business Reward account for every AU\$ 1 paid for services provided by REMONDIS. This means, therefore, that every company that uses REMONDIS' container services can now collect QANTAS miles each time a container is delivered or collected.

Many companies have already joined the Business Rewards Programme. They can benefit from the many advantages offered by the other QANTAS partners even if they are not a frequent flyer. The points can, for example, be redeemed for upgrades or vouchers. The higher the customer's member-

ship level, the higher the bonus points rewarded for every flight. Additionally, and depending on the customer's membership level, different discounts on base fares, higher luggage allowances or access to global lounges are granted.

QANTAS is Australia's largest airline. With 118 aircraft and 73 destinations worldwide, the airline is an important passenger carrier to and from Australia and is a popular brand among Australians and the many tourists from around the world who travel to Australian shores. "We are really proud to have partnered with such a strong regional company such as QANTAS," commented Luke Agati, managing director of REMONDIS Australia. "It is yet another sign of REMONDIS' growing significance on the Australian continent."

A film about REMONDIS Australia's business activities can be viewed here:







QANTAS is Australia's  
largest airline with



**118 aircraft** and **73 destinations**  
(worldwide)



**"We are really proud to have partnered  
with such a strong regional company  
such as QANTAS."**

Luke Agati, Managing Director of REMONDIS Australia



# All systems go at TSR

## RECYCLING BUSINESS PREPARES ITSELF FOR UPCOMING CHANGES IN ITS MARKET

There has been an atmosphere of change at the metal recycling specialists, TSR, since it became a fully owned subsidiary of the REMONDIS Group in September 2017. One consequence of this full takeover has been the relocation of TSR's head office from Bottrop to Lünen (where REMONDIS is based), which was completed in the summer of 2017. Moreover, Jürgen Mauthe has joined TSR's team of managing directors and is responsible for further dovetailing the TSR and REMONDIS operations. Structural changes are often accompanied by a change in strategy and this is certainly true here – TSR is no longer simply a trading firm but also a service-oriented recycling business as well.

Recycled raw materials are becoming more and more important as our planet's natural resources become increasingly scarce and sustainable development plays an ever greater role in the worlds of politics and business. Industrial businesses, however, often opt to use primary raw materials despite the fact that mining has a hugely negative impact on our environment and far more energy must be consumed to process these materials. "Many end-of-life products consist of a highly complex mixture of materials. The recycling sector faces the difficult task of recovering these raw materials and then separating them from each other so that as many components as possible can be recycled and reused," explained Bernd Fleschenberg, managing director of TSR.

To be able to fully close these product life cycles, it is essential to remain in close contact with metal processors. "We can only offer appropriate recycling solutions if we really understand how products are made and exactly what materials are needed," Bernd Fleschenberg continued. What's more, discussions need to be held with businesses to talk about the recyclability of their products as there are limits as to what can be achieved both from a technical and economic point of view. Bernd Fleschenberg stressed: "As far as we are concerned, recycling begins with product development."

Recycling ferrous and non-ferrous metals in a country such as Germany, which has so few natural resources of its own, is not only important because it helps cut carbon emissions, it also makes us less dependent on the countries supplying primary raw materials.

TSR has built up three core areas of expertise – trading, services and recycling – and will be using these to further cement its position as a reliable partner for industrial sectors and a supplier of high-quality recycled raw materials. "We are increasingly becoming a service-based recycling company," explained Bernd Fleschenberg. "By offering industry-specific services, we will be able to collect scrap metal straight from the source, transport it to our facilities and process it using our own technology so that it can be returned to the production sector as a recycled raw material."

No matter what solution TSR may offer, it is always focused on its customers' requirements. "Industrial firms need services that have been adapted to suit their production systems so that they can concentrate on their core business," said Olaf Pusch, head of key account management & services, explaining the company's 'industrial consulting' concept. "We take a look at all of the material streams generated throughout the whole of a business' production chain. We can then optimise in-house processes by thinking about possible recycling solutions for the start of the production process as well," Olaf Pusch continued, describing how their concept works. Since REMONDIS' takeover of TSR, there has been a concerted effort to further strengthen the collaboration work between the two companies and this is already paying off: "By working together with our REMONDIS colleagues, we can offer our customers waste management concepts that cover all of their waste streams which also helps us stand out from the competition," said Olaf Pusch.



**THE METAL POST:** make the most of your scrap metal – don't throw it in the bin!

Bespoke collection schemes, such as the METAL BOX, help grow collection and recycling rates



A further service that has been offered by TSR's Dortmund business since 2015 is its 'METAL BOX'. This small container was designed especially for small firms and workshops so that they have a practical place to store their ferrous and non-ferrous scrap. This is then collected and exchanged for an empty one either on a regular basis or when the customer calls. "This service is proving to be very popular indeed. In fact, it is now available in practically all of TSR's regions," commented Christian Blackert, the regional manager in charge of the project.

Since adjusting its business strategy, TSR has begun looking at target groups that have played little or no role in the past: TSR's latest service, 'THE METAL POST', is targeted at private individuals who can now use an online platform to send their old metal to TSR. Customers can print out a delivery note and then send their metal to TSR as a standard parcel. "Once the contents have been examined, a transparent overview of the metals is sent to the customer and they then receive payment for their metals according to the daily scrap metal prices," said Olaf Pusch explaining the project which is to be managed in Hamburg and is due to start at the end of 2017.

Besides offering its own portfolio of services, those working at TSR believe there are a huge number of potential business opportunities from collaborating with the other REMONDIS companies. "One project currently being discussed clearly demonstrates how close cooperation between two REMONDIS firms can cut logistics costs and workloads," said Bernd Fleschenberg. At the moment, REMONDIS Electrorecycling's various dismantling centres remove all pollutants from white goods so that they can be sent on to TSR for recycling. The companies are now looking into the possibility of removing such pollutants on site at TSR's shredding facilities.

No matter whether it involves talking with industrial businesses, its new portfolio of services or its closer collaboration with REMONDIS: TSR is well prepared for the upcoming changes in its sector. It has set the course for its future so that it can successfully master the international challenges of its volatile market and help shape future developments as the metal division of the REMONDIS Group. Bernd Fleschenberg summed this up saying, "We are simply making sure that we are ready for the future".

**"We can only offer appropriate recycling solutions if we really understand how products are made and exactly what materials are needed."**

Bernd Fleschenberg, Managing Director at TSR

THE METAL BOX – the easy way for you to store your business' scrap metal





# China – the dragon is becoming greener

REMONDIS IS SUPPORTING THE EFFORTS BEING MADE BY CHINA TO PROTECT ITS ENVIRONMENT

With environmental awareness continuously growing in the People's Republic of China, REMONDIS has gradually been expanding its business commitments in this emerging Asian market. Priority here has been on transferring its know-how and setting up sufficient plant capacities – primarily for industrial waste as well as recycling and end-of-pipe solutions.

For years now, China's economy has enjoyed a rate of growth that is far beyond the average. And, even if this growth has lost some of its momentum, the economy is still expanding much faster than in other countries. This development has led to improved living standards across the country which in turn is resulting in an ever increasing number of Chinese people expecting more to be done to protect the environment. For the third time running, therefore, the Chinese government has put environmental issues at the top of its list of priorities in its 5-year plan and indicated that it will be investing more money in this area.

In principle, there are two main sectors in China: the public sector (dominated for the most part by the State) and the industrial sector. Since entering the market in 2009, REMONDIS has focused its Chinese operations on providing professional solutions for treating industrial waste. The problem here is that whilst there are sufficient rules and regulations, the infrastructure needed to fulfil them is not in place yet. The country not only has too few recycling facilities, it also lacks hazardous waste incineration plants and landfills.

#### Providing experience and know-how

Right from the very start, REMONDIS' intention has been to transfer its know-how to China. The company believes it has two main tasks here. On the one hand, it aims to provide the Government and its representatives with professional advice – for example on modern recycling techniques and the advantages of setting up smart schemes that enable waste to be collected separately. On the other, REMONDIS offers tangible support, planning and building plants and facilities.

With the primary goal being to recycle waste, a number of facilities have already been built by REMONDIS including plants to recycle solvents and to produce refuse derived fuels. Besides these though, the country urgently needs more incineration plants and landfills for handling its non-recyclable waste.

#### Cooperation in a south Chinese industrial region

The latest project in the City of Foshan is a good example of an end-of-pipe solution. This city in the south of China is home to several million people and is situated not far from Hong Kong and Macao in a vibrant economic region with many industrial businesses. Together with its local partner Grandblue Environment Co. Ltd., REMONDIS is currently in the process of planning and building a hazardous waste centre with an incineration plant, an emulsion treatment facility, a plant for processing electroplating sludge, a



tank farm and a hazardous waste landfill. The cooperation agreement was signed by both companies on 13 July in the presence of Li Keqiang, Minister President of the People's Republic of China, and Jean-Claude Juncker, President of the European Commission.

#### Facilities located in two districts of Foshan

The project in Foshan covers the development of two sites situated in the districts of Sanshui and Nanhai. REMONDIS' partner, Grandblue Environment, already operates a landfill for household waste in Sanshui. This site is to be extended to include a further processing plant that will be able to solidify, stabilise and prepare around 30,000 tonnes of industrial waste every year so that it can be sent to landfill.

Building work is to be carried out in Nanhai to set up the new "Foshan Green Industrial Service Center" which is to operate a variety of facilities including a WIP for household waste, a plant to treat electroplating sludge, a chemical-physical processing plant as well as a waste transfer station. According to the plans, this centre should be able to handle a total of 85,000 tonnes of material every year. Both locations are due to be up and running by the middle of 2019.

REMONDIS currently has four business locations in the People's Republic of China – in Shanghai, Changchun, Chongqing and Foshan



Foshan is home to a large number of industrial businesses operating, for example, in the automobile, chemical, metal, steel and pharmacy sectors

# 500 bottle caps for a life without polio

REMONDIS, RE PLANO AND RHENUS PROVIDE SERVICES TO SUPPORT THE DECKEL DRAUF E.V. PROJECT



Poliomyelitis, more commonly referred to as polio, is an illness that has been almost completely eradicated with there being only a few known cases in Afghanistan and Pakistan. 'Deckel drauf e.V.' [Put a lid on it], an association founded and organised by the Rotary Club, has certainly helped to stamp out this disease. It has set up a system across the whole of Germany that enables plastic bottle tops to be collected at supermarkets, kindergartens and schools. REMONDIS' subsidiary RE Plano, all regional head offices and Rhenus PET-Recycling have been providing a number of services to support this successful project.




'Deckel drauf' has already collected 300,000 kilograms of plastic bottle tops since 2015 – the equivalent of around 150 million tops. The majority of these have been sold to RE Plano's plastics recycling facility in Lünen and to Rhenus PET-Recycling in Lüneburg and the proceeds donated to the Rotary Club's 'End Polio now' campaign. More than 80,000 euros have been raised for polio vaccines with the Gates Foundation tripling any proceeds made from the plastic tops. The Rotary Club has been campaigning to eradicate this illness since 1985 and has already donated over one billion US dollars to help stamp it out. Africa has been free of the illness since 2014. The organisation's current goal is to ensure it is eliminated once and for all. The civil wars currently raging in Afghanistan and Pakistan mean that there is an increased risk of the illness spreading again.

Dennis Kissel is managing director of AWSH Abfallwirtschaft Südholstein GmbH. He made the most of his recycling expertise to set up his 'Deckel drauf e.V.' project

The REMONDIS Group's firms and its sister company, Rhenus, have been supporting this project by collecting almost two thirds of all the bottle tops from the various drop-off points and then recycling them. All plastic bottle tops made of the material, HDPE, can be left in the collection boxes if they are smaller than 4cm. This material is normally used to make the tops for drinks bottles and drinks cartons (e.g. milk and juice cartons) as well as the yellow part of a Kinder egg. The proceeds from 500 bottle tops cover the cost of one polio vaccine.

Dennis Kissel is the founder and chairman of 'Deckel drauf e.V.' His job is certainly one of the reasons why he came up with this idea: having worked within the recycling industry for so many years, he is well aware of how important plastic is. Being a member of the Herzogtum Lauenburg-Mölln Rotary Club, he decided to unite the 'End Polio now' project with protecting the environment and recycling this valuable raw material. "I thought up this idea over a glass of wine during a Rotary International Convention in Lisbon. It was most definitely a very good wine. We are delighted that the project has received so much support from our partner firms. Once polio has been stamped out, we will use the proceeds to support other good causes," commented Dennis Kissel.



# In the heart of the capital

**BERLIN IS HOME TO REMONDIS' BIGGEST BRANCH IN THE EAST OF GERMANY**

Over the last twenty-eight years since the Berlin Wall fell, REMONDIS has succeeded in setting up a recycling centre in the very heart of this capital city whose wide range of services are helping to drive forward sustainability – benefiting both the local inhabitants and the businesses in the region. This development was not one that could be taken for granted for a family-run company that has its roots and head office in the small Westphalian town of Lünen almost 500 kilometres away. Quality and reliability have won through – two extremely important factors when it comes to providing sustainable services. Today, REMONDIS is able to offer around 550 people a secure job at its plant in the Lahnstraße in the Berlin district of Neukölln – helping to protect the environment, prevent climate change and conserve natural resources in and around Berlin. ►

The amount of paper sorted is more or less the equivalent of the amount of timber found in a forest the size of Berlin's Grunewald Forest



► It is clear as soon as a visitor arrives at the entrance to the site that big things are happening inside. The company's premises on the other side of the wide archway inscribed with REMONDIS' name covers a good six hectares of land next to the east harbour. The building, which had previously been the head office of a former cable factory, symbolises the structural change that this area has undergone. These grounds are now home to a total of ten REMONDIS subsidiaries and a joint venture as well as REMONDIS' logistics sister company, Rhenus. REMONDIS International's office here manages all business operations in Poland and Eastern Europe. REMONDIS Industrieservice offers its industrial and commercial customers in and around Berlin a full range of hazardous waste management services as well as industrial maintenance work. REMONDIS Medison handles the region's medical waste from its offices in Berlin Neukölln. REMONDIS GmbH provides container services for storing and transporting commercial waste and collaborates with Berlin council in a whole range of areas to recover raw materials from waste. UCL, also a fully owned subsidiary of REMONDIS, offers its portfolio of analytical laboratory services, taking samples of and analysing the materials due to be processed – services that are also available to external customers based in Berlin. Moreover, the laboratory carries out important groundwork for developing new innovative recycling processes.

TSR – the REMONDIS Group's metal recycling specialists – collects metal scrap from businesses in and around Berlin and tranships it at the harbour opposite REMONDIS' premises. What's more, REMONDIS Data Office provides its customers with a range of secure data and file destruction services. Rhenus' archive service is always of great interest to anyone who enjoys history: all the files are stored in the building that used to house the Treuhand Gesellschaft, the institute responsible for privatising East German firms. Innotec also has offices here in Berlin that offer a comprehensive portfolio of property management services as well as advice on optimising waste collection schemes at housing estates.

If emphasis is to be put on protecting the environment and curbing climate change, then there are two REMONDIS plants in the Lahnstraße that should be given a special mention. The first is REMONDIS Electrorecycling's WEEE dismantling centre, in which five million euros were invested two years ago. This upgrade has made it the most modern facility of its kind in the east of Germany. Its operations focus primarily on accepting and dismantling all types and sizes of cooling appliances. Coolants, propellants and the now banned CFCs are removed from the devices using environmentally compatible processes – essential work for slowing down climate change. The volume of raw materials they recover is impressive: absolutely all of the metals are recovered and recycled so they can be returned to production cycles. The recycling rates of the other materials are also at the highest levels possible with today's technology. The few remaining pollutants and residual materials are sent to special processing facilities or disposed of using professional systems. The recycling centre is able to handle around 35,000 tonnes of WEEE every year.



REMONDIS has already created 550 sustainable jobs within the environmental sector in Berlin Neukölln





Lutz Wedegärtner, branch manager of the second-largest REMONDIS location in Germany, is well aware of just how important his site is for creating a sustainable economy in Berlin: "We have set up a centre of excellence for providing a sustainable supply of raw materials and we wish to continue expanding this business far into the future."

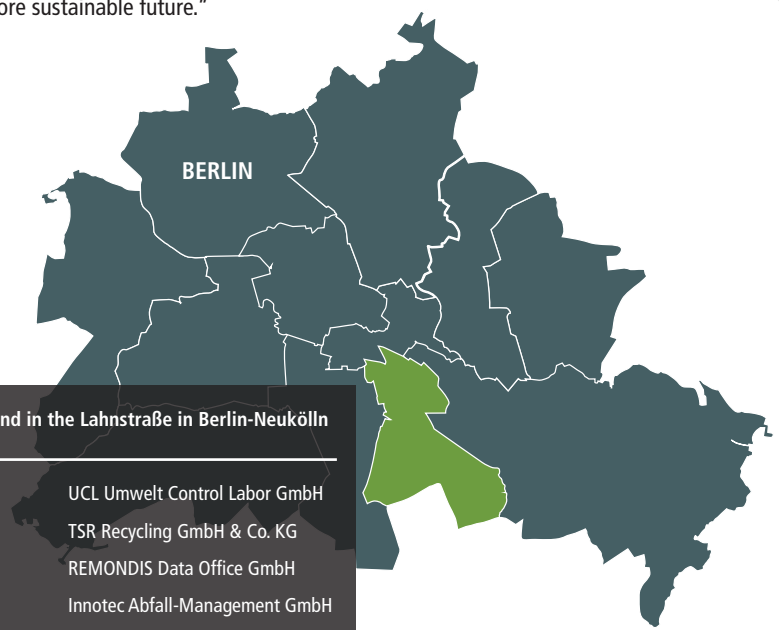
REMONDIS' business in Berlin has developed an innovative procedure for recycling large volumes of packaging material made from polystyrene; this light material is pressed into blocks and cut up so that it can be used to insulate buildings

The second large recycling plant is the paper sorting plant run by WUB (Wertstoff-Union Berlin GmbH), a joint venture between REMONDIS and Berlin Recycling, a fully owned subsidiary of BSR. Approx. 10 million euros were invested in this facility in Neukölln which is now one of the most modern paper sorting plants in the country. 20 new jobs have been created since it opened. Using a two-shift system, the plant is able to sort 120,000 tonnes of waste paper every year to supply the paper industry with high grade products. The waste paper comes from commercial businesses, retailers, industrial firms and private households. The volume of paper processed is more or less equivalent to the amount of paper that could be produced by using all the trees in the Grunewald forest near Berlin. All in all, these paper recycling operations reduce carbon emissions by over 75,000 tonnes. During a visit to the site, Borough Mayor Dr Franziska Giffey underlined just how important the operations were: "We are proud to have REMONDIS and its modern, innovative and sustainable business in our district, which not only has a positive impact on Neukölln but on the whole of Berlin. 60% of the paper generated in Berlin is sorted here at the Neukölln site and then returned to production cycles. The facility has not only generated new jobs, it is also helping to protect the environment."

Altogether, REMONDIS' Berlin-Neukölln industrial estate provides jobs for around 550 people. Lutz Wedegärtner, managing director and site manager, is proud of the way the business has developed to date and is very optimistic about its future. "What we have managed to achieve on the site of this old cable factory since 1994 is not simply proof that structural change can be brought about by investing in the recycling sector. There are far more people working in this forward-looking environmental services sector than there ever were in the cable factory. Recycling waste, conserving resources, protecting the environment and curbing global warming are all subjects that are vital for the future and we have set up a centre of excellence right in the heart of Berlin. REMONDIS is working in and for the Berlin region to help it create a more sustainable future."



10 REMONDIS companies share the premises in the Lahnstraße; they all came to Berlin and they are all here to stay



The following companies can be found in the Lahnstraße in Berlin-Neukölln

- |  |                                |
|--|--------------------------------|
| REMONDIS GmbH, Region Ost                | UCL Umwelt Control Labor GmbH  |
| REMONDIS Electrorecycling GmbH           | TSR Recycling GmbH & Co. KG    |
| WUB Wertstoff-Union Berlin GmbH          | REMONDIS Data Office GmbH      |
| REMONDIS Medison GmbH                    | Innotec Abfall-Management GmbH |
| REMONDIS Industrie Service GmbH & Co. KG | Rhenus Archiv Services GmbH    |
| REMONDIS International GmbH              |                                |



# From landfill to research centre

**:METABOLON RESEARCHES INTO MODERN ENVIRONMENTAL TECHNOLOGY TOGETHER WITH WELL-KNOWN UNIVERSITIES**

**“We approached the universities that specialise in the different fields and got them on board,” commented Monika Lichtinghagen-Wirths – before listing a whole number of well-known universities (from the TH Cologne, to the RWTH Aachen, to the University of Duisburg Essen) who work together with :metabolon’s teaching and research centre in Lindlar. Over the last few years, the waste management association, Bergische Abfallwirtschaftsverband, and the TH Cologne have transformed the old Leppe landfill into a centre for environmental and resource technology that is attracting students from all across the state.**

:metabolon’s centre has permanent places for 30 university students enabling them to carry out research work into modern recycling technology which they can then include in their Bachelor or Master’s dissertation. In addition, it regularly organises summer schools and welcomes other undergraduates and graduates looking to make the most of the excellent facilities on offer. These include three semi-industrial recycling plants; two more are due to be added next year. They are fully functional and students can use them for their research projects. These machines are considerably smaller than those found in a professional recycling plant but they are large enough to create realistic conditions.

The goal of this research centre is to find out how more recyclable materials can be recovered from waste and then turn these findings into tangible benefits for society as a whole. More than thirty recycling projects have already been carried out in Lindlar – with them focusing on processing waste, converting materials and closing new material life cycles. Moreover, it also looks into landfill technology, for example for collecting and treating leachate. The research work is not only targeted at benefiting the German recycling sector but also at helping other continents. A number of students from the TH Cologne, for example, recently developed a furnace at the :metabolon centre that enables waste cocoa shells to be thermally treated and the heat to be recovered. They decided to do this because these shells are normally dumped in large quantities on the fields in Africa which makes it more difficult to harvest the following year’s crop. “Research is just one element of a project. We believe it’s really important to continue the work and see it through to the end. Which is why we have a team on site that focuses on doing just that,” Monika Lichtinghagen-Wirths continued.

**“Research is just one element of a project. We believe it’s really important to continue the work and see it through to the end.”**

Monika Lichtinghagen-Wirths, Bergischer Abfallwirtschaftsverband

“What is important here is that we can work with smaller volumes and shorter treatment times which means we can analyse the findings more quickly and perform follow-up tests,” explained Prof. Christian Malek, who works for the Faculty of Computer Science and Engineering at the TH Cologne and is based at :metabolon.



The official opening of :metablon's teaching and research centre: Jochen Hagt, District Administrator of the 'Oberbergischer Kreis' district, Prof. Rüdiger Küchler, Vice President of TH Cologne, and Monika Lichtinghagen-Wirths, Bergischer Abfallwirtschaftsverband (from left to right)



Semi-industrial recycling facilities create ideal conditions for the students' research work

This joint research centre is run by Bergischer Abfallwirtschaftsverband and the TH Cologne, who have been working together since 2007, and is financed almost entirely from grants. These have come from the German state of North Rhine-Westphalia, various Federal government ministries and the European Union. All in all, :metablon has already received 20 million euros in grants to support its research work, something Monika Lichtinghagen-Wirths is very proud of. "We believe there should be even more grants available to help conserve our raw materials. It makes no difference whether :metablon receives them or another research institute. We need to find out more about processing, recycling and using recycled raw materials right now or we will find ourselves facing a huge problem in the future," she

continued, giving plenty of food for thought. Future plans are to set up a network of expertise that should focus on recycling. It will comprise a number of project groups who will decide which research work is most urgently needed in this field. A committee consisting of politicians and trade association members is to be set up to provide decision makers with proposals regarding possible funding programmes. A network of research institutes with relevant projects might also be created in addition to suitable sponsorship schemes. "Many institutes are carrying out similar research work and they could support each other by exchanging information. This would also prevent money being spent twice on researching the same topic," Monika Lichtinghagen-Wirths concluded.



In addition to its research centre, :metablon has facilities for teaching schoolchildren of all ages, offers a whole range of leisure activities and hosts special events



The centre in Lindlar will be offering a new MSc course in resource management and energy next year. This will help unite ecology, economics and technology

# Between the Rhine and the Wupper

A SUCCESSFUL PARTNERSHIP: DÜSSELDORF IS ALWAYS CLEAN THANKS TO AWISTA

Düsseldorf has always been a special city. This town on the estuary of the Düssel, a small tributary of the River Rhine, was given the right to call itself a city way back in 1288. Since the end of the 14<sup>th</sup> Century, Düsseldorf has always been the seat of government for some country or principality and today, it is home to the state parliament of Germany's most densely populated state, North Rhine-Westphalia. This city on the banks of the Rhine is one of the five most important business centres in Germany and one of the most international. What's more, a comparison of the quality of life in the world's 231 largest cities puts Düsseldorf in sixth place. Two reasons for this are the excellent public services and the fact that the city is so clean and tidy. This work is performed by AWISTA, a long-standing and highly successful public private partnership between Stadtwerke Düsseldorf and REMONDIS.

The two main shareholders in AWISTA GmbH are the Düsseldorf utilities company, Stadtwerke Düsseldorf AG (51%), and the waste management firm, REMONDIS Rhein-Wupper GmbH & Co. KG (49%). AWISTA's core business is providing public services such as waste management and city cleaning work.

These are permanent tasks with the City of Düsseldorf being the company's largest and most important customer – all services, including clearing roads of snow and ice in winter, have been set out in long-term agreements.

All in all, the company handles around 500,000 tonnes of waste from Düsseldorf every year



However, unlike the times when the business was part of the local authority set-up, AWISTA GmbH and its strategic partner, REMONDIS Rhein-Wupper GmbH & Co. KG, have looked far beyond the city's boundaries. It also, for example, delivers public and commercial services to the Bergisches Land region via its subsidiary, AWISTA Logistik GmbH. What's more, it is able to offer capacities for materials recycling and thermal treatment as well as for composting. The Düsseldorf-Reisholz (IDR-EG) site acts as a national hub for hazardous waste and it has guaranteed access to plants for sorting and recycling waste packaging and construction waste.

Being a public private partnership, it is extremely important that the business is run cost effectively as it is a basic right of all local inhabitants to have the best service for the best price. Efforts have constantly been made, therefore, to further improve operations. Whether it involves the workshop, waste collection services or the road cleaning division – every section has been looked at and optimised where possible. This has also included making the most of synergies by setting up a central materials management system and improving the way staff, vehicles and the workshop are deployed. It is also reflected in the company's modern IT systems that are used to control processes and material streams as well as for centre management.

Today, AWISTA's portfolio of services goes way beyond "classic waste collection" work: modern three and four-axle vehicles are deployed to collect a whole range of different types of waste. The city cleaning department not only keeps the city's roads clean but also provides cleaning services for special events, clears roads of snow and ice in winter and removes graffiti. What's more, AWISTA plays a key role in special sporting and cultural events: from the Düsseldorf Marathon, to Japan Day, to the Rose Monday Parade – one of the biggest events in the city's calendar.



AWISTA managing director, Björn Becker, makes sure the company always provides clean, high quality services

Together with its partner, REMONDIS Rhein-Wupper GmbH & Co. KG, and its affiliated companies, the company treats around one million tonnes of waste every year, a good fifty percent of which comes from Düsseldorf. Looking at the different plants and facilities, approx. 450,000 tonnes are incinerated, just under 200,000 tonnes are sent to landfill and 100,000 tonnes are recycled at composting plants. To be able to offer these services, it most certainly needs a team of qualified and motivated employees. Of the 770 people currently working in Düsseldorf, 256 are responsible for waste management and 280 for keeping the city clean. Each year, they empty around 10.4 million bins and clean 283,000 kilometres of roads and paths.

In autumn, the team travels along Düsseldorf's approx. 3,000 roads to collect the leaves that have fallen from the 67,000 trees so that they can be recycled. In winter, AWISTA keeps the roads safe and collects old Christmas trees – at the weekend and even late into the night. It has an accredited quality management system (DIN ISO EN 9001:2015) for its road-cleaning operations which involves regular inspections and all necessary documentation as well as a complaints management system. These quality controls are most certainly one of the reasons why AWISTA has so many satisfied customers and is so popular in Düsseldorf, this major city lying between the Rhine and the Wupper.



A good **770**  employees work in Düsseldorf emptying around **10.4 million**  bins every year

# Successful team work

XERVON AND BUCHEN WORK HAND  
IN HAND TO MASTER TWO PARALLEL  
SHUTDOWNS



XERVON and BUCHEN played a key role in two major refinery turnarounds this year – in Schwechat near Vienna and in Lingen, a town situated in the German state of Lower Saxony. Having meticulously prepared both projects beforehand, the two companies deployed over a thousand operatives to ensure both shutdowns were carried out smoothly.

**XERVON**®

WORKING FOR THE FUTURE

**BUCHEN**®

WORKING FOR THE FUTURE

Both companies were praised by their client for the high quality of their work, their reliability and their ability to work to schedule

If such large-scale turnarounds are to be a success, then it is essential that all the different specialist jobs are scheduled so they fit together perfectly. Being part of the REMONDIS Group, XERVON and BUCHEN know all about successful collaboration work and delivering uncomplicated solutions. It is also a huge advantage that the group's maintenance experts, industrial cleaners and catalyst specialists regularly work together on a variety of projects.

#### Refinery turnaround in Schwechat

The OMV refinery in the Austrian city of Schwechat is one of the largest inland refineries in Europe. One of its most important facilities – its ethylene cracker unit – had to be shut down between the end of April and the end of May so that it could be serviced and inspected. All in all, around 75

percent of the refinery came to a standstill for a period of four weeks while it was being overhauled. XERVON sent a team of around 400 people who were responsible for the mechanical work, i.e. dismantling a whole range of plant sections and equipment and putting them back together again. The mechanics played a key role here in making sure all the other specialists were able to perform their tasks as planned.

One of the main challenges they had to cope with in Schwechat – besides the very tight schedule – was dealing with the actual layout of the refinery: some of the refinery's facilities have been built upwards to make up for the lack of area available. More often than not, cranes could not be used as there was not enough space for them. In many

**"We received much praise from our client for the professional way we executed our tasks."**

Thomas Kramel, Managing Director XERVON Instandhaltung GmbH

cases, XERVON had to work with chain lifts – also for moving really large parts weighing between two and three tonnes. These were then transported to a section of the refinery where they could be lifted out by crane.

BUCHEN-ICS was also part of the shutdown team in Schwachat. This firm, which specialises in reactor and catalyst handling services, replaced the catalyst in 15 vessels and reactors with the majority of this work being performed in a nitrogen environment. All in all, they used their specialist processes to unload and load around 400 cubic metres of material.

#### **Large-scale shutdown at BP in Lingen**

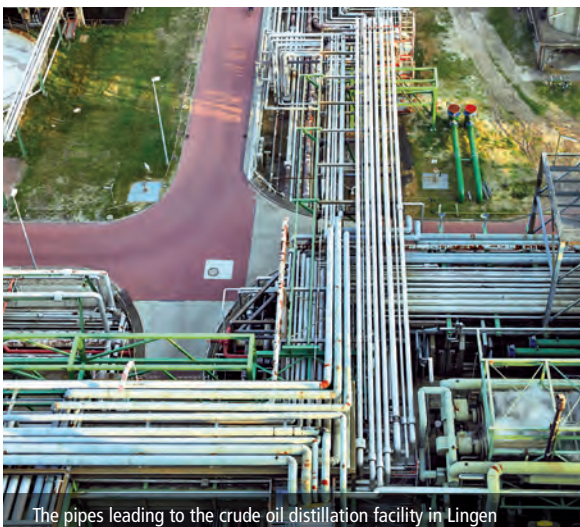
BUCHEN and XERVON also worked hand in hand for a major turnaround at BP's refinery in Lingen which lasted from the middle of April to the beginning of June. During this project, BUCHEN UmweltService was responsible for the industrial cleaning work whilst BUCHEN-ICS worked on the reactors and XERVON Instandhaltung took on the extensive piping and mechanical tasks. This work also included them installing all the pipes in a new 45-metre-high column for distilling crude oil. XERVON produced and installed several thousand metres of piping for BP, set up trace heating systems and manufactured several thousand flange joints. The company had begun producing these parts back in the middle of 2016.

Both XERVON and BUCHEN have been delivering services to this BP refinery for many years now. During this year's turnaround, BUCHEN UmweltService had to clean numerous heat exchangers, vessels, columns, reactors, air coolers and pipes. A whole range of cleaning methods was deployed here – from eco-friendly vacuuming processes, to blasting technology using high pressure jets, dry ice and modified sodium hydrogen carbonate, all the way through to setting up dedicated washing areas. The BUCHEN-ICS experts were in charge of over 30 reactors, working on up to five facilities at any one time. This was also the first time that they were able to use their newly developed DPC technology – a weatherproof catalyst-loading system that does not need a crane – to load the hydrocracker plant.

XERVON Instandhaltung had up to 700 operatives at the refinery during the shutdown; BUCHEN had 240 people on site during the busiest periods. Both teams agree that meticulous planning work is vital if the tight schedules are to be met. The close collaboration work between the different team members on site, however, is equally important as they have to be able to react flexibly to tasks or situations that crop up unexpectedly.

Meticulous planning work has to be carried out in advance to ensure the tight schedules can be met

BP had set up an excellent infrastructure to enable their contractors to take their staff and equipment to the site



The pipes leading to the crude oil distillation facility in Lingen



The vacuum distillation unit in Lingen

# Analyses with added benefits

## CONDITION-BASED MAINTENANCE WORK GOES DIGITAL

For years now, XERVON Instandhaltung has been offering condition monitoring – a process that involves monitoring machine elements (for example using vibration analyses) and documenting their condition. By doing so, they can identify individual machine parts that are broken or suffering from wear and tear and so prevent plant outages. The experts have now gone a step further. By integrating the recorded measurements into online systems, customers now have access to a range of features enabling them to use this data even more productively.



Condition monitoring reduces the chances of an unexpected production outage to an absolute minimum

Condition monitoring is one of XERVON Instandhaltung's core areas of expertise – and there is a good reason for this. At the end of the day, measuring and analysing such data is an effective way to minimise plant downtime, prevent unexpected production outages and increase a facility's operational life. What's more, individual machine parts can be used for as long as possible as their condition is being permanently monitored.

Digitising this information and integrating it into online systems open up even more advantages – and this is something that XERVON is making the very most of to offer their customers even more benefits. Steven Brenner from XERVON's condition monitoring division explained: "The different ways the data can be used, once it is has been entered into an online system, are pretty much boundless. Our customers tell us exactly what they want and we set it up."

**XERVON Instandhaltung's condition monitoring experts have access to a directory containing data recorded from monitoring over 8,000 machines**

### Network solutions create best practices

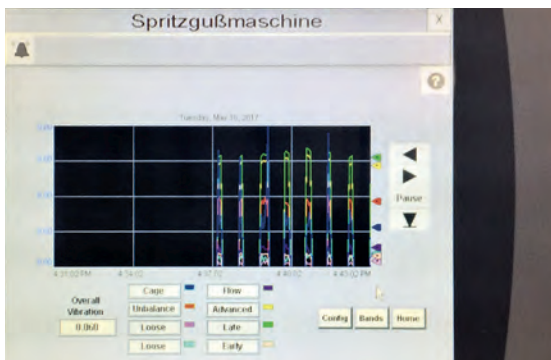
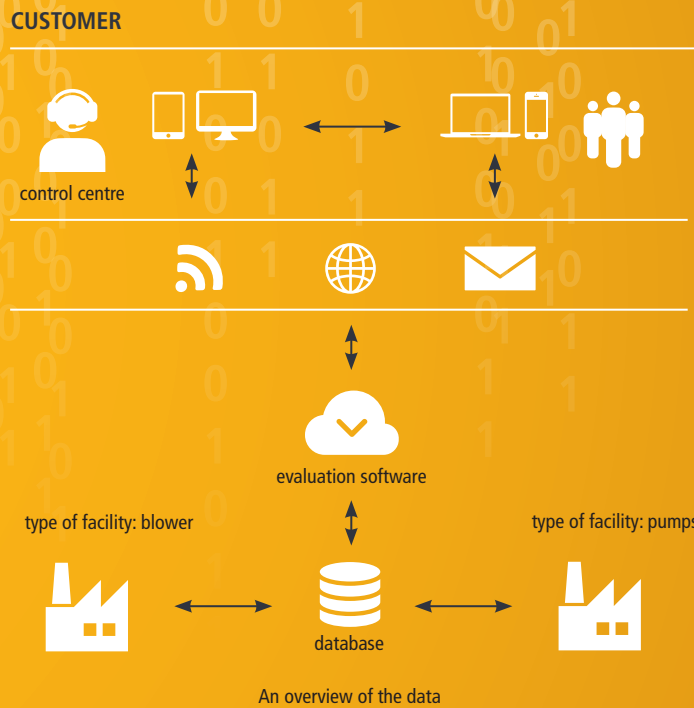
One particularly useful feature of such online systems is that they enable data from all company plants to be recorded and evaluated centrally so that best practices can be implemented across all similar facilities. One example: a manufacturer uses condition monitoring systems to monitor its various process plants around the world. All of the information and data recorded are transmitted online to a central database and then analysed. Feedback, recommendations and improvement measures can then be sent back to the individual plants via the digital network.

### Adding the data to other systems

An online system, which XERVON is currently setting up at a large German automobile supplier, illustrates perfectly just what is possible when digital support is available. One of the main goals here is to integrate the maintenance-specific data into the customer's other systems, such as its maintenance planning and control systems (IPS). This involves interpreting the recorded production data and plant parameters, further processing this information and then making it available for the higher level planning systems.

This bespoke system has been designed so that it is not only possible to record the data but also to enable it to be transmitted, forwarded, stored and processed in a variety of ways.





The system's recorded data



The online system's panel on the CM box; the data from the individual sensors can be viewed here

Detailed analyses improve maintenance work, cut costs and increase a facility's operational life



If alterations need to be made to the system, such as changing the measurement tasks, then this can be done via remote access – a solution that is quick and can be carried out no matter where the person may be.

#### Automated measurements – just in time

XERVON Instandhaltung has also been monitoring sections of a production plant for a plastics processing business. Meaningful data can only be recorded in the ten-second gap between two production cycles. An online system has proven to be the perfect solution here as well, as it makes it possible to enter very precise settings determining exactly when the measurements should be taken. It has even been programmed so that the process plant itself sends out the signal when there is a gap between cycles and again when the measurements have been taken.

#### Digitisation creates added value

Condition monitoring is already an important tool nowadays. The number of advantages it can offer, however, will continue to grow as digitisation increases. Steven Brenner concluded: "Using online systems and integrating maintenance data into planning and control systems will open up a whole host of new opportunities. We will be able to adapt our condition monitoring services to meet our customers' exact requirements so that the recorded data can be used even more productively."



Covestro's NRW site manager, Dr Klaus Jaeger (left), presenting the award to XERVON managing director, Klaus Thiele, during a special ceremony held in Krefeld-Uerdingen

# Work safety practices honoured

COVESTRO'S SAFETY AWARD GOES TO XERVON'S SCAFFOLDING SPECIALISTS



Erecting work platforms and protective scaffolding high above the ground or in areas that are difficult to access is a great challenge, particularly in the industrial sector. XERVON, which is also the largest scaffolding business in Germany, has an excellent record here – also when it comes to workplace safety. This REMONDIS company has now been honoured by Covestro who recently presented it with its Contractor Safety Award.

Covestro, one of the world's leading manufacturers of high-tech polymer materials, presents its Safety Award to external partner firms who have demonstrated outstanding levels of work safety at its production sites. This year, this coveted prize went to XERVON. XERVON has been working successfully with Bayer MaterialScience, now Covestro, for over 40 years. Major shutdowns had been planned at a number of its plants last year, all of which needed scaffolding so that the facilities could be maintained and serviced. Throughout this period, XERVON did not have a reportable accident nor did they have a single first aid case. "The performance of the employees here was truly impressive," said Dr Klaus Jaeger,

Covestro's NRW site manager. XERVON holds regular staff training courses, continuously improves its personal protective equipment and systematically implements its work safety management system to make sure that the subject of safety is permanently at the forefront of everyone's minds. "Our number one priority is keeping our employees safe and this is a fundamental part of our business strategy," explained XERVON managing director, Klaus Thiele. "Our collaboration with Covestro is particularly constructive. We often sit down together to discuss how processes can be further improved and then ensure these ideas are integrated into the next project."

Covestro put on a special lunch to thank XERVON's scaffolding team



## A safety award from Evonik

XERVON's scaffolding experts have also been honoured by Evonik in recognition of their excellent cooperation work and their outstanding workplace safety – the first time this award has ever been presented at its plant in Hanau. The performance of the contractors was evaluated by a number of Evonik employees working in the areas of technology, production, work safety and plant security.

# Water for Istanbul

## REMONDIS AQUA TREATS WATER FOR THE TURKISH METROPOLIS

Istanbul has a history that goes back thousands of years and has always been seen as the point where the East meets the West. What's more, it has always been famous for its cultural diversity and lively way of life. As a result, the city has steadily grown since it was founded almost 2,700 years ago – a process that is getting faster and faster as modern Turkey develops. This development, however, has brought with it some huge challenges for the city's planners, engineers, utility companies and environmental service specialists. REMONDIS Aqua is helping out here by managing water services on the Asian side of Istanbul.

14 of Istanbul's 25 city districts are situated on the Asian continent on the east bank of the Bosphorus. More than one third of the people living in the Turkish metropolis have their home here. All in all, Istanbul has 15 million inhabitants putting it in 15<sup>th</sup> place on the list of international megacities. The water authorities responsible for water supply and wastewater treatment in this area recently commissioned REMONDIS Aqua's Turkish subsidiary to manage the wastewater treatment plants in the Asian part of the city for the second time. No small task as the following figures show.

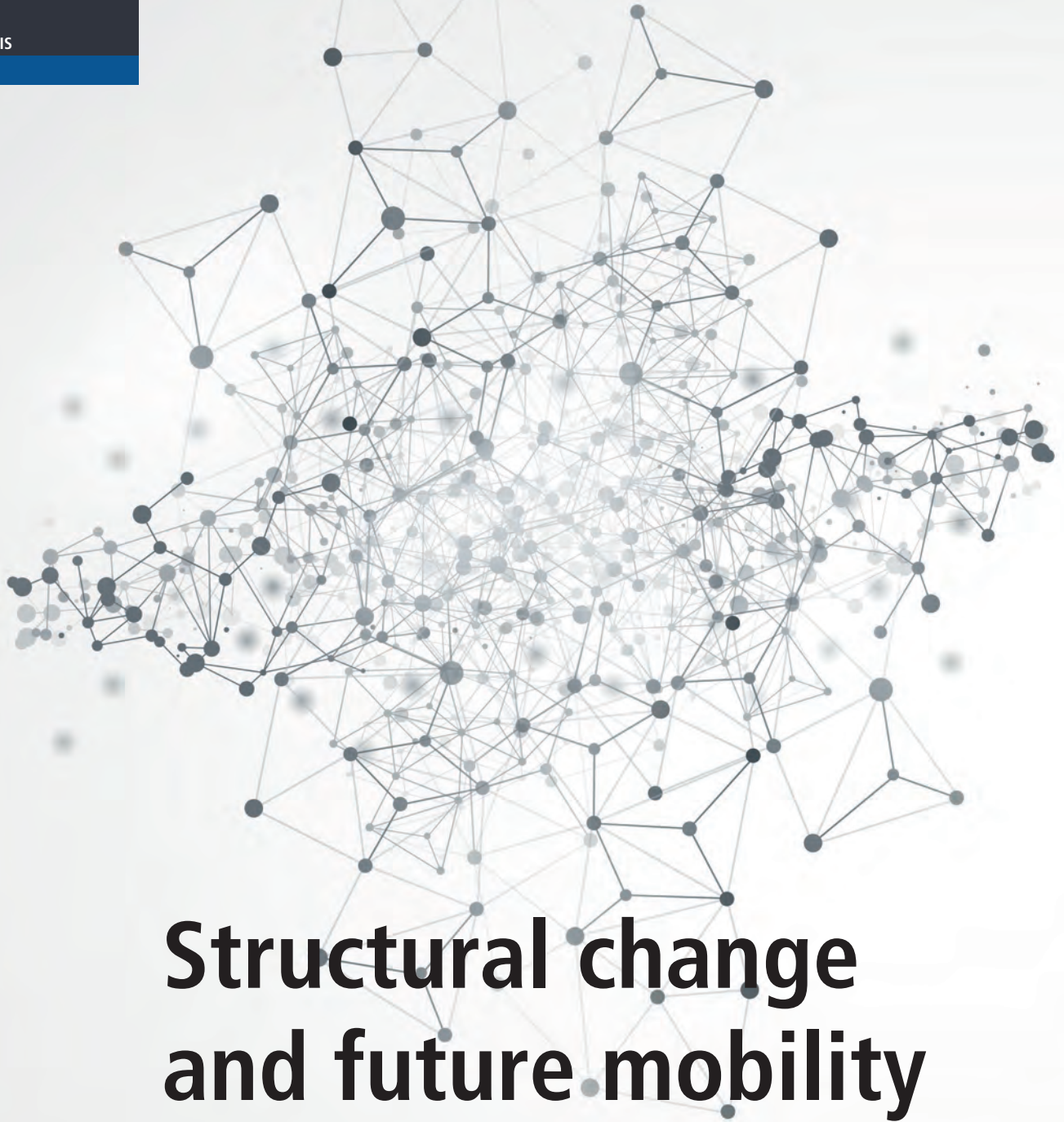
Every single day, around 3.8 million cubic metres of wastewater are processed in a total of 51 plants. These include 27 biological wastewater treatment plants, 5 wastewater pre-treatment plants, 18 transfer stations as well as a facility that treats wastewater using natural processes. The largest plants first remove any pollutants from the wastewater.

The resulting sewage sludge is dewatered, dried and freed of any unpleasant odours before being transformed into heat and electricity in combined heat and power plants. The treated and biologically clean water can then be discharged into the sea via undersea pipelines. A team of 400 employees ensure all these operations run smoothly.

Jens Meier-Klodt, managing director at REMONDIS Aqua International, was delighted that the company had won a further contract from the Istanbul water authorities. "REMONDIS Aqua is doing an excellent job in Istanbul, treating the wastewater generated by a good one third of the city's population. We're really pleased that the authorities have commissioned us again for a further two years – a decision that reflects the quality of our work."



Treating wastewater for the City of Istanbul is a mammoth task that needs a network of 51 different plants and facilities



# Structural change and future mobility



Mobility will also be an important issue for future water resources management

**DISTINGUISHED SPEAKERS FROM THE WORLDS OF POLITICS, SCIENCE AND BUSINESS AT THE 12TH REMONDIS FORUM IN COTTBUS**

Once again, REMONDIS Aqua GmbH & Co. KG invited guests from the worlds of politics, science and business to attend its now traditional REMONDIS Forum, which was held in the German city of Cottbus on 12 and 13 October this year. The venue was chosen to celebrate the cooperation work between the City of Cottbus and LWG Lausitzer Wasser GmbH & Co. KG, a REMONDIS Aqua joint venture. "Thanks to this public private partnership, the city can benefit from the company's expertise. It's great to see just how committed REMONDIS is to the region," commented Holger Kelch, Mayor of Cottbus.



(from left to right) Norbert Rethmann, Honorary Chairman of the Supervisory Board of the REMONDIS Group, John C. Kornblum, former US ambassador, Holger Kelch, Mayor of Cottbus, and Andreas Bankamp, Managing Director of REMONDIS Aqua, took a look into the future at the REMONDIS Forum in Cottbus



Christian Baudis, former boss of Google Germany, talked about the future of digitisation

REMONDIS Aqua GmbH & Co. KG had also been invited to officially open an exhibition organised by the Kunst-Wasser-Werk Schwerin e.V. [Art Water Factory] on the eve of the forum. The exhibition was in the turbine hall of an old power station and was open to the public every weekend until 05 November.

The 12<sup>th</sup> REMONDIS Forum focused on the subject of “Smart Cities and Future Mobility” this year. Future urban development will be influenced by a number of factors including technical innovations, the interconnections between science and business and the need to reconcile economic and environmental needs. Local councils will face considerable social responsibilities as the population in their cities continues to grow. The smart, interconnected city will improve the quality of life of its citizens by offering an intelligent, innovative infrastructure that will not only make mobility more efficient but also conserve natural resources and reduce human impact on the environment. As always, the REMONDIS Forum provided an ideal stage for discussing this topic with many interesting speeches being held by politicians, scientists and business people.

John C. Kornblum, former US ambassador, was among the distinguished speakers this year with his talk focusing on how America and Europe will be affected in these times of change. Christian Baudis, former boss of Google Germany, talked about the effect digitisation will have on start-up companies and on the development of national economies. Chief representative of Rhenus SE & Co. KG, Dr Werner Kook, held a speech on the future of public transport – taking a look back to see what we can learn from past developments. He also provided an insight into Rhenus Veniro’s ‘Mobility 4.0.’ and gave a comprehensive picture of what logistics will look like in the future. Moreover, Marco Di Filippo, an IT security expert, took a humorous look at the future and the potential of digitisation in his talk, “The Internet of Things”.

Former US ambassador, John C. Kornblum, holding his speech in Cottbus

The REMONDIS Forum, hosted by REMONDIS Aqua, is held in a different German city every year. Over the years, it has become an important event providing industry specialists, economists, scientists and politicians with an ideal venue to discuss topical subjects. By holding this event, REMONDIS Aqua is further underlining the growing importance of private sector commitment in both the German and international water sectors.

Every year, the REMONDIS Forum attracts a large number of distinguished guests and speakers





# Flash floods hit Goslar

EURAWASSER MAKES THE MOST OF ITS RESOURCES TO TACKLE SEVERE FLOODS

## EURAWASSER

Even if President Trump claims that climate change is a Chinese hoax, there is no denying the fact that countries all over the world have found themselves facing harsher weather conditions over the last few years. Whilst meteorologists stress that the weather and the climate are not the same thing, there is certainly evidence to suggest that we are dealing here with the consequences of the man-made greenhouse effect. The German city of Goslar, situated on the edge of the Harz National Park, was hit by such extreme weather conditions in July 2017. Torrential rain swept through the city on the morning of 24 July causing all rivers and streams to break their banks. With so much rain falling on the Harz within just 48 hours, water levels rose quickly and roads were turned into gushing rivers. Thousands of residents living in this south east region of Lower Saxony were directly affected by the flooding. Working closely together with the fire brigade, THW, the police and local authorities, EURAWASSER had their hands full tackling this emergency.

The THW, fire brigade and EURAWASSER joined forces to tackle the floods in July 2017

### Rapid response thanks to strong partners

It is always a great relief for local authorities if they know they can get the support and help they need from their private sector partners at short notice – especially when they find themselves facing a potentially disastrous situation. EURAWASSER turned up straight away to help the City of Goslar fight the flash floods, providing them with full technical and logistical support. Remaining in close contact with its parent company, REMONDIS Aqua, it also arranged for additional equipment to be brought in from other regions. There are very few companies that are able to respond so quickly, competently and unbureaucratically to economic, technical and environmental crises. When the torrential rains hit the city, EURAWASSER and REMONDIS were able to show that they are definitely the right partners to have at your side in such extreme situations.

Up to 300 litres of rain per square metre had poured down on the Harz region within just 48 hours. By the morning of 26 July, the usually gently-flowing brook, "Abzucht", had turned into a rushing torrent and flooded large sections of the old city. The market place was completely under water; rainwater poured through the streets and into the buildings. Whilst local residents tried to save their houses by covering their front doors and cellar windows with sandbags, plastic covers and anything else they could get their hands on, a team of 350 firefighters from Goslar's fire brigade tirelessly tackled the floods. Whole streets of houses and an old people's home with 124 residents had to be evacuated. Life in the city centre came to a standstill.



By the morning of 26 July, the small brook, "Abzucht", had turned into a rushing torrent



The fire brigade had their hands full and were grateful for all the support they could get from EURAWASSER, the local authorities and the many volunteers



Fire firefighters, the THW, the police, the local authorities and EURAWASSER as well as many volunteers worked around the clock – building up sandbags, blocking off roads and pumping water out of cellars, underground carparks and underpasses. By midday Wednesday, the District of Goslar had issued a "catastrophe" alert. Throughout this time, EURAWASSER's employees made sure that the drains were kept free to allow the water to run off and dealt with any problems that cropped up in this area. This cleaning work was particularly important – if they hadn't done this, rocks, pieces of wood and any other floating debris would have accumulated and further aggravated the situation. The city centre's sewer system had been completely flooded by the "Abzucht" breaking its banks. Debris and mud had found

their way into the pipes and these materials also had to be removed by EURAWASSER as quickly as possible. Thanks to this vital and strenuous work, EURAWASSER's team helped ensure that Goslar's wastewater system was not put at risk. The sewage treatment plant also treated huge volumes of water – always producing the same high quality results so that all threshold values were met. The rivers Gande and Leine in the neighbouring town of Kreiensen (an area also served by EURAWASSER) were close to breaking their banks and practically all of the rainwater channels there were flooded. EURAWASSER replaced broken pumps and removed any blockages to prevent the situation escalating any further.

The last time Goslar had been hit by such massive floods was back in 1898. Public private partnerships had not been invented back then. Fortunately, the situation today is very different thanks to the close cooperation work between the City of Goslar and EURAWASSER. And, with teams of staff from other REMONDIS locations taking their special vehicles to Goslar to help tackle the floodwaters, EURAWASSER was able to provide the local authorities with fast, practical and uncomplicated support throughout

Climate change is making itself felt: the city hadn't been flooded so badly for 119 years



## BDI meets at the Lippe Plant



In October, the members of the BDI committee for raw material policies visited the Lippe Plant in Lünen for the 26<sup>th</sup> meeting of their committee. After REMONDIS managing director Herwart Wilms had given a short presentation



of the company to his committee colleagues, they were all taken on a highly informative tour around the Lippe Plant which made it very clear just how important recycling is for providing a sustainable supply of raw materials. The official committee meeting was then held immediately afterwards. On the agenda this time was a presentation on the latest developments in the recycling sector as well as a general discussion about the coalition negotiations. During the meeting, Dr Otto Lose, board member of K+S AG, and Herwart Wilms were appointed members of the board of the BDI committee for raw materials.

The BDI committee for raw material policies during their tour of REMONDIS' Lippe Plant in Lünen

## BMUB supports TetraPhos®

The BMUB [Federal Ministry for the Environment] is supporting the work being carried out on the TetraPhos® process (currently being operated at the sewage treatment plant in Hamburg) with a grant of three million euros from its environmental innovation programme to drive forward the recovery of phosphorus. According to the BMUB, this is a project that is leading the way – especially as it will be obligatory for sewage treatment plants handling wastewater from 50,000+ inhabitants to recover phosphorus from their sewage sludge from 2029 onwards. Should this project prove to be a success, then it can be assumed that the process will

be replicated across the whole of the wastewater sector. At the moment, the plant incinerates around 125,000 tonnes of sewage sludge a year. The sewage sludge ash contains phosphorus in a relatively concentrated form which has – up to now – ended up in landfill as there has been no technology available that is able to recover it. Thanks to the TetraPhos® process, which is being developed together with REMONDIS Aqua, VERA Klärschlammverbrennung GmbH is now able to recover the phosphorus from the ash. The goal here is to gradually close the life cycle of phosphorus to reduce Germany's dependency on phosphorus imports.

## REMONDIS supports training exercise on Sylt

Last September, there was an explosion in the gas cylinder warehouse at REMONDIS' site on the Island of Sylt. The fire spread to the truck workshop next door where a vehicle was being repaired. The force of the explosion caused a number of metal containers at the back of the building to topple over – burying a number of employees under them. What's more, a fire broke out in a container in which hazardous substances from households and commercial businesses, such as aerosol cans and tins of paint and varnish, were being stored.

Fortunately, this potentially disastrous scenario was only a training exercise for the local fire brigade and had been organised to test the coordination and, above all, the communication on site between the firefighters under as realistic conditions as possible. The focus of the exercise was on a new digital radio system. "We used to have only one radio channel," explained Wolfgang Kloth, the fire chief in charge of this exercise. "This created an unnecessarily chaotic situation as everyone could hear what everyone else was saying. Now at last we can split the people up into groups."



## REMONDIS experts outline the 'Circular Economy 4.0'

REMONDIS managing directors, Herwart Wilms, Dr Ansgar Fendel and Dr Jörg von Smuda and their colleagues from TSR and REMONDIS, Dr Philipp Kempkes and Herbert Zahn, have written an article for the magazine, 'Chemie Ingenieur Technik' [Chemistry Engineering Technology], in which they depict the digital future of the recycling sector. Entitled 'Circular Economy 4.0 – Technological Changes, Challenges, and Approaches, a Recycler's Point of View', the authors shed light on how the digitisation of industry will impact on the material streams handled by the recycling sector and how the sector should respond.

This article is also available on the Wiley Online Library (see link below) where it can be downloaded or read online:



## Open day at the sorting plant for 'mouse' fans

REMONDIS' team at the sorting plant for sales packaging in Bochum welcomed over 3,000 people to its Open Day on 03 October. Once again, the German children's TV programme 'Die Sendung mit der Maus' [The programme with the mouse] had called on companies, institutions and associations to open up their doors for one day to let children have a look behind the scenes. According to branch manager, Jens Trottenberg, it had certainly been well worth their while to put on this event. Groups of visitors were constantly being shown around the sorting plant and so many people turned up that some of them had to wait up to an hour before they could go round the facility. "Even though we had four employees taking

groups around at the same time," he commented. There were plenty of activities to keep the children occupied while they were waiting though: a huge 3D puzzle, which certainly tested their agility skills, a bouncy castle and a wheelie bin race. An arts and craft stand and a face painting stall were on hand for the kids who were feeling more creative.

The Open Day at REMONDIS' sorting plant attracted over 3,000 visitors; a programme of both informative and fun events had been organised for young and old



# A single shot for greater equality

REMONDIS EMPLOYEE, MITHAT GEDIK, TRIGGERED A POLITICAL DISCUSSION WHEN HE BECAME 'SCHÜTZENKÖNIG' IN SÖNNERN

Mithat Gedik smiles and looks a little embarrassed when he is asked about his "famous story". "That happened a long time ago but it is, of course, still a topical subject," he said – and so he agreed to describe what happened three years ago when he set the ball rolling for greater religious equality.



Mithat Gedik is 36 years old and is German – and he not only grew up in this country, he was born here. The subjects on his high school leaving certificate also include the Catholic religion. He is married, has four children and has been a site manager at REMONDIS for three years now. When he joined the company, REMONDIS' south west regional division had just opened a plastics processing facility in Mannheim and had been looking for an expert who had the know-how and personnel management skills to run this plant. Mithat had already made a name for himself in this sector. He knows all about plastics, gets on really well with all those around him and is a very tactful person. He is also ambitious and has a good head for business. Today, he no longer only manages the plastics plant but is also the operational manager for the whole of REMONDIS' site in Mannheim. Besides running the plastics processing facility, he is in charge of the South West Region's transfer station – which handles 6,000 tonnes of plastics, 25,000 tonnes of old paper and 3,000 tonnes of commercial waste every year – and the central workshop. Mannheim is not his hometown, however: he grew up in Sönnern in the District of Werl 330 kilometres away. All of the 870 people living in Sönnern know Mithat as he has always done everything he can to support the local community – for example by joining the voluntary fire brigade and the 'Schützenverein' (a local voluntary association focusing on shooting as a sport).

His story hit the national headlines because – and this is what the story is all about – Mithat is also a Moslem. Every year, 'Schützenvereins' across the country hold a shooting contest to determine who will be their new king, their 'Schützenkönig'. A wooden bird is placed at the top of a pole and the person who shoots it down is the new

king. Newspaper articles appeared across the country – in Spiegel Online, Süddeutsche and FAZ to name just a few – when Mithat shot down the wooden bird in the summer of 2014. It wasn't long before the BHDS [Association of historical German shooting fraternities] got to hear of this. The by-laws of these shooting fraternities, which had been written almost 90 years ago, stipulated that a member must be Christian. The association demanded that Mithat stand down as 'Schützenkönig' because of his religion. "I found the whole thing more than a little strange. I am a German citizen with Turkish roots. I was born and brought up in Germany. My family background had never been a problem before," explained Mithat Gedik. His fellow "Schützen" brothers stood by him and announced that they would all leave the club if Mithat was forced to stand down. The story spread through the media like wildfire; even the Federal Anti-Discrimination Agency stepped in. This was a fundamental matter of political importance as it centred on the coexistence and equality of religions.

As a preliminary measure, the association drew up an exemption clause for Mithat Gedik so that he could be 'Schützenkönig'. A proposal to change the by-laws to include non-Christians was not discussed by the BHDS until this year – three years later. Mithat was not at the meeting even though he was the reason for this discussion in the first place. He was, though, very happy to hear that the proposal had been accepted. "At the end of the day, we have only solved one of many problems. This discussion won't end here. Even though we're living in the 21st Century, there are many others who think differently," he concluded summing up his story.

## > Impressions



◀ NRW Minister President Armin Laschet talking to Herwart Wilms, REMONDIS Managing Director, and Elisabeth Winkelmeier-Becker, Member of the German Parliament, about creating a sustainable economy in the German state of NRW

Ludger Rethmann, Board Chairman of the REMONDIS Group (4<sup>th</sup> left), and Egbert Tölle, REMONDIS Board Member (2<sup>nd</sup> right), were part of a delegation that visited REMEX's plant in Singapore



▲ AFS, a company joint venture from Freiburg, visited the Lippe Plant in October. Managing Director Michael Boglin (centre front row) came to Lünen with a number of his employees at the invitation of Ludger Rethmann (centre back row)



▲ All of the REMONDIS Group apprentices working near Lünen came to the 'Apprenticeship Evening' to help Kristina Rehahn and her team



▲ The spotlight was also turned on the apprentices in Kiel. Thanks to the tours and talks given by Jürgen Hahn (front row right) and Thorsten Sengeisen (front row left) from REMONDIS Nord, the newcomers got a real insight into the Melsdorf branch, its different vehicles and the Kiel waste incineration plant during their introduction days



▲ REMONDIS International's Management Meeting was held in Amsterdam this year. Visits were made to a number of locations including a facility run by REMONDIS' sister company, Rhenus



▲ Christian Monreal, Public Affairs REMONDIS, was delighted to receive a visit from Paul Ziemiak, chairman of the 'Junge Union Deutschland' (German Young Conservatives), and Federal Interior Minister Thomas de Maizière during a meeting of the German Young Conservatives in Dresden



## Recycled raw materials are better than raw materials

The best choice for our future: recycled raw materials are not only raw materials, they are often much better than those from primary sources. Why? Because they are of an excellent quality, require less energy and space to produce, are carbon neutral and can be found here on our home market. Recycled raw materials help grow our economy and ensure we continue to have a world worth living in.