

The REMONDIS Group magazine

## REMONDIS AKTUELL

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### Al and data analysis encounter resource protection and recycling

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### Everything you ever wanted to know about humus

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### Almost nothing is impossible

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RECYCLED

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#### **Dear Readers!**

Everyone's greatest wish at the moment is for life to return to normal. So let us take a look at the positive things that have happened. And there have been a great deal of them, many of which can be put down to the very good collaboration with you — our partners, friends and employees. As the year draws to a close, it is traditionally a time to take stock of the last twelve months and happily 2020 was not as bad as may have been expected considering the overall situation. At the same time, we can look ahead to 2021 with hope and optimism.

One example is our return to the Dual System, the scheme in Germany for managing old sales packaging. Maybe some of you may remember when we withdrew our own Dual System, EKO-PUNKT, from the market in the summer of 2014 as it had become impossible to predict the legal and business risks at the time. But then the Packaging Law came into force - finally putting an end to the infinite number of amendments that were being made to the old Packaging Ordinance. Which means that the necessary framework conditions are now in place for us to return to the Dual System market. Following its first attempt (the acquisition of DSD which was unfortunately turned down by the monopolies commission), REMONDIS has now purchased RK, a Dual System that owns a full set of valid licences but, as yet, has no share of the market. Ideal conditions for us to play a role in this market again - something that is as natural for a recycling firm to do as it is for Father Christmas to wear a red hat. And so RK will become the new EKO-PUNKT Dual System. In the style of that famous film from the 80s, we're going "Back to the future!"



Christmas is also a time where we may traditionally make a wish. The European Commission and the German government wish to have so-called green steel, i.e. steel that is produced without fossil fuels and so emits as little CO<sub>2</sub> as possible. Focus is being put here on "green hydrogen" as a potential climate-neutral source of energy. As with so many wishes, however, the first question is where should this green energy come from? And, above all, who should pay for it? Leaving aside the fact that there is as yet no official definition for green steel, the chances of there being sufficient supplies of green hydrogen available on the market any time soon would appear to be slim with the development towards renewable electricity generation moving so slowly. And yet, this sought-after green steel has been around for ages. It is produced from high quality scrap steel, over eight million tonnes of which is recovered and returned to production cycles by TSR using a process that is for the most part climate neutral - without having to consume land, without having to use additional resources and without having to needlessly transport material half way around the globe. Sounds almost like Christmas, but it's true.

Against the backdrop of all this good news, we would like to thank you all for the great collaboration work. May we take this opportunity to wish you a happy Christmas and all the very best for the coming year.

Yours

Thomas Conzendorf



The vision of "green steel", which sees all steel production energy requirements being covered by renewable hydrogen, is one that we are perhaps unlikely to see in the near future considering the huge volumes of green electricity that would be needed to achieve this. And yet "green steel" has been around for ages – its potential is simply not being sufficiently exploited. Actually, using hydrogen in industrial production processes is not really a novel idea. German industry already consumes around 1.7 million tonnes of pure hydrogen either as a raw material or as energy every year. The snag here: producing this hydrogen also creates over 5 million tonnes of CO<sub>2</sub> emissions each year. If this volume is to be replaced with green hydrogen in the future, then an additional 24 TWh/a of renewable electricity would be needed to produce it. This is the equivalent, for example, of the output of approx. 18 large-scale offshore wind farms. You just need to look at the sea around Borkum, which currently has only two wind farms and a total of 72 wind turbines, to predict how difficult such a development will be. A red tape nightmare and a project that would be impossible to reconcile with nature and species conservation. With this in mind, it makes perhaps more sense to focus on climate-friendly metal recycling.



German industry already consumes around

**1.7m tonnes**of pure hydrogen either as a raw material or as energy every year

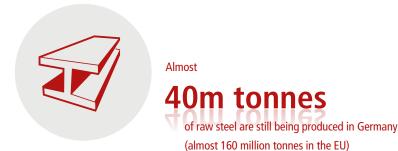
This is the equivalent of the output of ca.



Metal recycling has been around since the ancient times. While TSR Recycling's history certainly doesn't stretch back that far, the company's contribution to promoting climate-friendly steel production is growing all the time. This REMONDIS Group firm currently returns around 8.5 million tonnes of recycled metal to production cycles — without having to use additional natural resources or long transport routes. Two aspects that would appear to be very important considering the way climate change is progressing at the moment. And yet public discussions are heading in a different direction.

Here in Germany, people are primarily looking at so-called "green steel" as a way to decarbonise steel production. While there is as yet no official definition for "green steel", it is seen as being steel that is produced (both during the smelting and processing stages) with preferably no CO<sub>2</sub> emissions whatsoever. To be able to achieve this, companies cannot use coal and coke as their source of energy or as a reducing agent in the smelting process and all of the electricity they need must come from renewable sources. Which brings us right back to the previously mentioned problem of supply.

Approx. one-third of all steel produced around the globe is made using electric arc furnaces — a figure that is growing all the time. This process is primarily deployed to melt down metal scrap and to produce high quality specialty alloys. A major step towards achieving climate neutrality would be made if the electricity needed for this process were to come exclusively from renewable sources. However, looking at the numbers (almost 40 million tonnes of raw steel are still being produced in Germany and almost 160 million tonnes in the EU) and at the problem of generating the required volumes of green hydrogen, it would seem unlikely that it will be this route that will enable all steel production processes to become climate neutral.



If the objectives of the Green Deal are to be fulfilled and if steel is to become a far more climate-neutral product, then one solution is to not only systematically use high quality scrap steel in electric arc furnaces but also to increase the volumes used in integrated steelworks. According to figures published by Georgsmarienhütte, producing steel from high quality scrap steel using electric arc furnaces emits around 0.12t of CO<sub>2</sub> per tonne of raw steel. Even when the carbon footprint of the current electricity mix is added to the equation, the amount of CO<sub>2</sub> from direct and indirect emissions is approx. 0.4t of CO<sub>2</sub> per tonne of raw steel.

The Fraunhofer Institute for Ceramic Technologies and Systems (IKTS) in Dresden has calculated that ca. 28% of all steel produced around the world is made using recycled steel. Estimations from serious sources believe this figure could be increased to approx. 50% — which would be a huge step towards tackling climate change and conserving natural resources. This would require the introduction of comprehensive metal collection schemes across the globe, the use of efficient mechanical recycling systems to guarantee the quality of the recycled material as well as to use as few — and preferably no — fossil fuels in the smelting process. TSR is already heading down this path and is making a major contribution towards climate-neutral steel production with its ca. 8 million tonnes of scrap steel.



Instead of trying to produce as much green steel as possible using already established scrap metal smelting processes, focus is, therefore, being put on generating green hydrogen as a climate-neutral fuel. A step that, it would be appear, cannot realistically be realised before 2035 according to industry experts and in light of the slow-moving development towards renewable electricity generation. It is, however, also an undeniable fact that the quality of steel produced in electric arc furnaces — which are becoming ever more popular — can only match the quality of steel from conventional furnaces, if the input quality of scrap steel is improved. Electric arc furnaces already use up to 100% scrap steel.

The decarbonisation of steel production can only be fully achieved by deploying a combination of different approaches. First of all, steel producers that deploy furnaces fired with coke and other fossil fuels must not only shift towards climate-neutral fuels but must replace their plants with systems based on green hydrogen. This will not only involve large investments but also smart political regulations to steer the direction of the market to make this technology cost effective and sustainable over a long period of time. Secondly, natural gas should be allowed to be used as a fuel as an interim solution, as around 65% of carbon emissions can be cut when gas is deployed to reduce iron ore and produce sponge iron. This transitional technology is already making a major contribution towards curbing climate change and is an alternative until, some point in the future, sufficient volumes of green hydrogen are available from national production activities and/or can be imported from partner countries.

"'Green steel' is already being supplied today – by using high quality recycled scrap steel in steel production processes. With the right targeted support and quality assurance measures, recycled raw materials can cover a considerable amount of the raw materials needed by European industrial businesses today."

Bernd Fleschenberg, Managing Director of TSR

Thirdly, more scrap steel needs to be collected, more high quality recycling systems need to be operated and more recycled raw materials need to be used to produce steel. One environmental plus that is often overlooked and underestimated here is the regional availability of the recycled raw materials. Producing recycled steel requires fewer and shorter transport routes and hardly any land is needed - two factors that further increase the carbon and environmental footprint of high quality scrap steel. The goal here, therefore, must be for this material to be used by local industry and not for it to be exported. Politicians are called on here to support all of the processes and solutions mentioned above so that the climate goals can be reached. At the end of the day, more CO, savings can be achieved this way than with electromobility or hydrogen cells for private transport.

With its 3,000+ employees and 80 recycling facilities at

150 business locations across 13 countries, TSR is already





TSR
THE METAL COMPANY



Aurubis and TSR are merging their cable recycling activities. Owning 60% of the shares in the new company, TSR shall be in charge of running its operations; Aurubis holds the remaining 40%. The new firm will unite TSR's activities at its site in Gelsenkirchen and Aurubis' business at its plant in Fehrbellin.

The ultimate goal behind the merger of these operations is to mutually grow and further develop today's recycling technologies and, by doing so, promote this field of recycling so that material cycles can be closed even more effectively in the future. TSR managing director Bernd Fleschenberg explained: "One of the main goals of the EU Commission's Green Deal is to transform our linear economy into a circular economy. Our joint venture will make an important contribution towards driving forward the circular economy – and act as a role model for other material streams."

Founded back in 1949, Aurubis' subsidiary Cablo specialises in separating metal and plastics from each other. It produces a variety of metal granules, primarily from leftover material from cable manufacturers as well as from different types of old cables. TSR will bring a wealth of information to the table with its nationwide collection schemes, logistics and



Norbert Rethmann, Honorary Chairman of the Supervisory Board of the REMONDIS Group (right), visited the branch in Gelsenkirchen in September where he was shown the new cable processing line by Branch Manager Marc Werner

recycling know-how as will Aurubis, which has in-depth knowledge of both metallurgy and processing a wide range of recyclable raw materials.

#### **AURUBIS AG**

Aurubis AG is the world's leading supplier of nonferrous metals and one of the largest copper recycling businesses. With approx. 7,400 employees, Aurubis processes complex metal concentrates, old metals and recyclable materials containing metal into a range of different metals. Operating plants in Europe and the USA, the company produces over one million tonnes of copper cathodes each year that can then be used to manufacture a variety of products made of copper and copper alloys.

**WWW.AURUBIS.COM** 

#### A centre of excellence for stripping & shredding cables

Before taking this last step, TSR began expanding its site in Gelsenkirchen in 2017 to create a cable recycling centre. Its cable processing line has been continuously improved and its throughput volumes increased over the last few years. Operations there have been run with two shifts since 2018. What's more, a second processing line was added in the summer of 2020 and is currently being trialled. This line focuses on household cables and cables with plugs as well as shredded copper sourced from armatures made of copper and iron, small electric motors and composite materials. The company's goal is for this new facility to handle around 19,000 tonnes a year.

### TSR extends its fields of business

ACQUISITION OF FIVE OF SIMS' EUROPEAN LOCATIONS INCREASES TSR'S CAPABILITIES TO MAXIMISE RESOURCE RECOVERY

TSR, REMONDIS' steel and metal recycling subsidiary, has purchased five business locations in Germany, Belgium, the Netherlands, Austria and Sweden from Sims Metal Management, an Australian-American recycling company. Thanks to this acquisition, TSR has been able to considerably expand its metal recycling operations. In the future, the company will be operating on the market with three different recycling divisions: the first division will comprise its classic ferrous and non-ferrous metal recycling activities, the second division all existing downstream metal recovery activities and the third the recycling of waste electrical and electronic equipment (WEEE).



"By purchasing these businesses, we have succeeded in extending our portfolio to include WEEE recycling as well as to further expand our downstream operations," said Christian Thielen, commercial managing director at TSR, explaining the strategic decision behind this step. "These changes are important and necessary milestones in the development of our company. They will help to strengthen our position on the market and give us a further competitive edge," he concluded.

#### New brands under TSR's roof

The companies have also been given new names to reflect these changes: M&R Recycling Solutions, MIREC and METRADE. M&R Recycling Solutions' business in Bergkamen, a town situated in the German state of North Rhine-Westphalia, primarily focuses on downstream activities. From here, it handles mixed fractions of materials containing metal from a variety of treatment processes to produce concentrates for the iron and steel industry. Covering a surface area of 80,000 square metres and with a workforce of just under 150 people, this is the largest of the five new units. A total of around 185 employees recycle e-waste at MIREC's plants in Eindhoven (Netherlands), Sint-Niklaas (Belgium) and Katrineholm (Sweden). And METRADE's operations at its



Austrian Müllendorf facility also focus on WEEE recycling: approx. 30 people process old electrical devices here.

This transaction is being rounded off by the company's decision to pool together all of REMONDIS' WEEE recycling activities and downstream units under TSR's roof. As a result, REMONDIS Electrorecycling's operations and Indra Recycling in Hockenheim are to be integrated into TSR at the beginning

of next year. This will create additional synergies and make the business processes even more efficient. M&R Recycling Solutions' business in Bergkamen primarily focuses on downstream activities



# Back to the future of packaging recycling

**EKO-PUNKT ONCE AGAIN APPROVED AS A NATIONWIDE DUAL SYSTEM** 



EKO-PUNKT, REMONDIS' Dual System, handed back its licence in 2014 as it considered the business risks to be too great. For a while, it had become impossible for companies genuinely committed to supporting the packaging recycling market to work properly due to the unfair competition that existed at the time. This was primarily being caused by a number of market players who were simply erasing volumes of packaging out of existence and exploiting legal loopholes. Following the introduction and implementation of the new Packaging Law, Thomas Conzendorf, REMONDIS board member and managing director of EKO-PUNKT, believes that the conditions are now right for the company to return to the Dual System market. "Both the new statutory conditions and the work being carried out by the Central Agency's Packaging Register have had a positive impact on the market. The call that we made back then for fair competition and for a central agency has been fulfilled. We're delighted to be able to support our clients again and offer them the opportunity to hand over their packaging obligations to us."



Ecodesign and minimum recycled content are two challenges for the future – and not just in the field of packaging recycling

This has all been made possible by the acquisition of the RK system this summer, which has a licence for the whole of Germany. EKO-PUNKT is being led by an experienced management team with Dr Florian Dühr as the company's second managing director. "It is our aspiration to be a Dual System that offers its customers the best possible opportunities in the circular economy," Dr Dühr explained. Based in Cologne, the company is looking to create long-standing business relationships. EKO-PUNKT's offering is primarily

targeted at companies that are genuinely serious about being sustainable. The ambitious recycling rates set out in the Packaging Law and the implementation of minimum standards have put an end to price dumping. Insiders are well aware that recyclate is scarce and that demand will soon exceed supply. In this regard, too, REMONDIS' Dual System has the perfect set up with the Group's operational collection and recycling network and investment strength.

"Both the new statutory conditions and the work being carried out by the Central Agency's Packaging Register have had a positive impact on the market. The call that we made back then for fair competition and for a central agency has been fulfilled. We're delighted to be able to support our clients again and offer them the opportunity to hand over their packaging obligations to us."

Thomas Conzendorf, REMONDIS Board Member & Managing Director of EKO-PUNKT





EKO-PUNKT's portfolio not only includes the core service of a Dual System, i.e. taking over a client's packaging obligations. It can also, for example, check to see to what extent a client's packaging can be recycled. Depending on the assignment, it can put forward proposals about making their packaging design more sustainable. A major task for the future will be to improve the ecodesign of packaging and efforts will have to be made by everyone involved in the supply chain – from the developers all the way through to the recyclers. This is the only way to close material life cycles. To make the very most of what is possible, EKO-PUNKT also offers its services to packaging manufacturers. Designing sustainable, eco-friendly packaging is one of the biggest challenges they are having to face at the moment as there is often still a big divide between everyone's desire to have greener packaging and what is technically and financially viable. At the moment, it is simply not possible to completely dispense with composite materials that cannot be separated from each other – in the field of food hygiene, for example. Collaborating with EKO-PUNKT as part of an experienced recycling company can help both manufacturers and businesses placing packaging onto the market to better understand how packaging can be designed so that it can be fully recycled when it reaches the end of its useful life.

Working closely with its customers, EKO-PUNKT is pursuing its goal of recycling as many packaging materials as possible and preferably all of them - so they can be returned to production cycles as raw materials again and again.

The sales phase set for 2021 began back in September 2020 for EKO-PUNKT. Having been absent from the market for so long, the first question customers had was whether the company had the official approval needed. EKO-PUNKT has been able to answer this with a resounding yes. Having been issued a licence for all 16 German states in accordance with Section 18 of the Packaging Law on 13.07.2020, EKO-PUNKT's Dual System has the right to conclude contracts to take over a client's packaging obligations across the whole of the country. And so, as far as EKO-PUNKT is concerned, it's back to the future of packaging recycling.



Find out more at eko-punkt.de



EKO-PUNKT is licensed as a Dual System in all 16 German states



# In memoriam: Wolfgang Steinberg

MANAGEMENT DEEPLY AFFECTED BY THE SUDDEN DEATH OF FORMER GROUP WORKS COUNCIL CHAIRMAN WOLFGANG STEINBERG

Mr Wolfgang Steinberg passed away suddenly aged 70 on 27 October 2020. A long-standing member of the RETHMANN Group's Group works council, he had been involved in many different projects, always steadfastly pursuing his goal to positively help shape the development of the company. Ludger Rethmann, board chairman of the REMONDIS Group, was deeply shocked by the news: "We have lost a much appreciated and highly respected partner. His opinion was always extremely important to us. Our thoughts are, in particular, with his two sons." Norbert Rethmann, honorary chairman of the supervisory board of the RETHMANN Group, remembered: "I first met Wolfgang Steinberg in 1972 when he joined Rethmann Städtereinigung – as the company was called back then – as a qualified wholesale specialist. I always very much valued him and all he did on the works council. While dealing with the issues of the employees, Mr Steinberg never lost track of the company's perspective either. He always had a balanced view of company interests and the workforce's interests."



Wolfgang Steinberg visiting Wamckow, Norbert Rethmann's adopted home town, in 2019; (from left to right) Irmgard Rethmann, Julia and Mario Löhr, former mayor of Selm and today District Administrator for the District of Unna, Wolfgang Steinberg, Ulrich Stallmann, Chair of the Group works council, and Norbert Rethmann, Honorary Chairman of the Supervisory Board of the REMONDIS Group

Wolfgang Steinberg's people focus was also evident when he was asked about what his biggest professional challenge had been as a member of the works council: "The most turbulent period that I experienced in my job was the time after the acquisition of RWE Umwelt in February 2005. The people had to go along with the integration of such a large organisation. Employees, who had been competitors on the market for many, many years, suddenly found themselves having to work together in the same company. People always imagine this process to be easier than it actually is. Our task was to create an environment that enabled all employees to do their job well."

Wolfgang Steinberg was a member of the union bargaining committee, on the district board of the ÖTV/Verdi union in Hamm and, from 2007 onwards, an alternating board chairman of BG Verkehr, the employers' liability insurance association for transportation and traffic. "We have lost a wise and self-assured leader, who advocated tirelessly for the well-being of all those covered by our insurance scheme. Our deepest sympathy goes out to his family," said Klaus Peter Röskes, board chair of BG Verkehr, who represents employers.

"We shall always remember Wolfgang Steinberg as a board chairman who unfailingly managed to drive forward occupational safety by working cooperatively with the employers' side," commented Sabine Kudzielka, chair of BG Verkehr's management board.

Besides working for the RETHMANN Group, Wolfgang Steinberg also became a member of the Sparkasse Lünen bank's supervisory board and risk committee in 2014 and later of the Sparkasse an der Lippe bank's board as well. His extensive expertise earned him great respect on both boards and his in-depth knowledge of the local economy often proved to be of great use in decision-making processes. Mr Steinberg's calm manner was also much appreciated as a member of the board of trustees of the Sparkasse an der Lippe bank's sports foundation. Both the Sparkasse an der Lippe and its sports foundation will always hold his memory in honour.

Furthermore, Wolfgang Steinberg was actively involved in local politics and held a seat on the supervisory boards of a number of municipal businesses, including Gemeinschafts-Müllverbrennungsanlage Oberhausen, Wirtschaftsbetriebe Oberhausen, Wirtschaftsbetriebe Lünen and Stadtwerke Selm. He took up his position on the Group works council when it was founded in 1994 and handed over the baton to his successor Ulrich Stallmann in 2018, after 24 years of being in this role. Wolfgang Steinberg continued supporting the business, advising REMONDIS' regional company, REMONDIS West, on occupational safety issues.

We shall never forget Mr Steinberg and shall always hold his memory in honour.

The RETMANN Group's management team, works council and staff & the Rethmann family

# Al and data analysis encounter resource protection and recycling

AN INTERVIEW WITH LUDGER RETHMANN ON REMONDIS' DECISION TO INVEST IN THE MÜNSTER START-UP COMPANY, WESTPHALIA DATALAB

One of the decisions that REMONDIS has made this year has been to invest in the firm, Westphalia DataLab (WDL). This is the first time that the recycling company has become part of a start-up business that focuses on data science and AI. In a recent interview, Ludger Rethmann, REMONDIS Board Chairman, explained how this decision was reached and what opportunities it will open up for the whole of the circular economy.





Mr Rethmann, it's fairly unusual for REMONDIS to invest in start-ups. What goal are you pursuing by investing in Westphalia DataLab and, in particular, in the fields of AI and data science?

Ludger Rethmann: By investing in the business, we're hoping to set an example und underline just how much we believe in Westphalia DataLab's business model. Both the smart analysis of data and the value of data in general are still vastly underrated today, particularly in our sector. Another goal here is, of course, to work with Westphalia DataLab and use the data that is available to benefit our Group. What's more, we want to strengthen our IT in Münster by involving an IT firm that will treat and analyse our company's wealth of information confidentially so that our processes can become smarter and more efficient.

How do you think smart, technological tools can improve REMONDIS' services?

**Ludger Rethmann:** There's most definitely a great deal of potential in our industry to use IT to further improve

"Both the smart analysis of data and the value of data in general are still vastly underrated today, particularly in our sector."

Ludger Rethmann, REMONDIS Board Chairman

processes, products and services. There is a whole host of opportunities right along the supply chain – starting with refuse collection, to sorting waste, all the way through to the actual recycling processes. Naturally, the first link in our service chain starts on the roads. Using artificial intelligence to improve waste collection routes will not only make our work more efficient but also more environmentally friendly. Another very important subject here is how well waste is segregated. There is a general rule that applies here: namely, that the better the waste materials are separated from each other at source, the higher the quality of the recycled raw materials will be. Recognising outthrow material in waste, therefore, also plays a major role here. With the help of cutting-edge image recognition technology and deep learning algorithms, it is possible to identify, select and remove prohibitive materials - and this makes the whole process fully automated. Al could lead to lower processing costs and genuinely help to preserve natural resources as it would hugely improve the recyclability of the waste streams. What's more, I believe this technology can really benefit our municipal customers. Water supply and wastewater treatment companies are currently having to deal with the impact of heavy rain and droughts on their operations. Al enables more exact weather forecasts to be drawn up, which means pumping stations can be utilised more effectively and are better protected against wear and tear.



This investment is also of great significance for WDL with REMONDIS being the largest recycling firm in Germany. How did this collaboration come about?

Ludger Rethmann: The whole subject of big data is certainly one that many traditional, conservative-leaning, family-run companies are approaching with caution. And most definitely Westphalian family-owned firms like REMONDIS. With our guidelines in mind and with us pursuing our objective to continue to be Germany's largest recycling, service and water company in the future as well, we decided to look for a partner working in this field. WDL, with its down-to-earth and friendly manner, convinced us of the importance of this sometimes complex subject and was accepted and appreciated by those working at our firm within a very short period of time. Despite being far removed from the REMONDIS Group's actual operations, they have succeeded in understanding what our industry is all about and presenting us with ideas that have genuinely increased the value of our products and services.

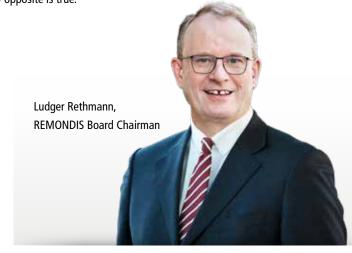
What is it about Westphalia DataLab that makes it so exciting?

Ludger Rethmann: WDL is able to grasp our processes really quickly and to show us where there is potential for improvement. It is amazing what comes to light when something is approached from a different angle and it

makes sense here to have someone from the outside look at our company. We are very open-minded and are grateful to WDL for its feedback and ideas.

Have you got any concrete plans for Westphalia DataLab now that you are an investor in the company?

**Ludger Rethmann:** Working together with WDL and the other family-run business owners, we wish to establish a company on the market that offers know-how that – in the best case scenario – not only benefits the circular economy but many other industries as well. This is all about making the most of AI and data analysis to grow resource conservation and recycling. The two are not mutually exclusive - in fact, the very opposite is true.



# Herwart Wilms the new Chair of the BDI's Raw Materials Committee

REPRESENTATIVES OF TWO RECYCLING FIRMS ELECTED TO THE BOARD OF THE BDI COMMITTEE FOR RAW MATERIAL POLICIES

REMONDIS managing director Herwart Wilms was elected the new chair of the committee for raw material policies at the BDI [Federation of German Industries] in October. Marie-Christine von Hahn, Vice President of Corporate External Affairs at Aurubis AG, was appointed deputy chair of the committee.



(from left to right) Sarah Hillmann,
BDI consultant, Herwart Wilms,
REMONDIS Managing Director and
Chair of the BDI Raw Materials
Committee, Matthias Wachter, Head of
the BDI's Department of Security and
Raw Materials, Hans-Joachim Welsch,
former Chair of the BDI Raw Materials
Committee, Wolfgang Niedermark,
Member of the BDI's management
team, Marie-Christine von Hahn, Vice
President Corporate External Affairs at
Aurubis and Deputy Chair of the BDI
Raw Materials Committee

"I'm delighted to have been elected chair of this important BDI institution. This is the first time that a representative of the recycling industry has held this position. The whole subject of raw materials supply and security is one that is often taken far too much for granted. During the first Covid-related lockdown, it became painfully clear just how dependent some industrial sectors are on getting their supplies of raw materials from abroad," Herwart Wilms explained. "Which is why I feel it is important for me, in my new role, not just to

continue to emphasise how the environment can be protected and climate change curbed when local industry uses recycled raw materials. I also need to underline how this can help the economy to become less dependent on other countries – for example in times of crises," he continued.

The focus of the committee's work shall continue to be on securing supplies of raw materials for German industrial businesses. "Recycling can't replace all the virgin raw materials that are needed. There is still a lot of potential here, though. Our approach to the circular economy, for example, can be further optimised to ensure products and raw materials can be used for as long as possible. What's more, we — the committee — wish to strengthen our call for trade restrictions to be scrapped and for the approval processes for extracting raw materials from local sources to continue to be sped up," Wilms concluded. Herwart Wilms has taken over the board chair from Hans-Joachim Welsch, who led the committee for raw material policies at the BDI for many years.

"Recycling can't replace all the virgin raw materials that are needed. There is still a lot of potential here, though. Our approach to the circular economy, for example, can be further optimised to ensure products and raw materials can be used for as long as possible."

Herwart Wilms, REMONDIS Managing Director and Chair of the BDI Raw Materials Committee





The website, www.humus.de, has been online since October. It is a treasure trove of information for everyone wishing to learn more about this organic soil matter. Attractively designed, the website provides information about the positive effects humus has in the agricultural sector and its increasing importance as a means to curb climate change. The site, for example, takes a look at the role of humus as a carbon store that can trap carbon from the atmosphere and bind it in the soil - making it an important factor in the battle against climate change.

The ability of humus to store water is also relevant and one that is becoming ever more significant as the summers get drier and drier. Farms, in particular, need to maintain the quality of their soils. Deliberately building up the humus in their fields is a sustainable option. This is especially true for organic farms as the range of fertilisers they may use is limited. The website is not only targeted at agricultural, gardening and landscaping businesses but also at hobby gardeners and at people simply interested in learning more about the subject. The information ranges from facts and figures that are needed to get a general overview of the subject all the way through to those required to publish a scientific study. The website will be continuously extended and updated with the latest developments. New facts will be added as well as useful dates and details about changes made to fertiliser legislation. People wanting to find out more, should simply click on the page. It's most certainly well worth a visit.

From helping farms to curbing climate change: the www.humus.de website highlights the importance of this organic soil matter



### **Circular economy continues** to grow in importance

#### INDUSTRY ASSOCIATIONS PRESENT THEIR 2020 STATUS REPORT

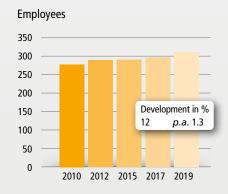
The "2020 Status Report on the German Circular Economy", which was published recently by Prognos and the INFA Institute, is probably the most comprehensive account of the trends, developments, stakeholders and infrastructure of the circular economy in Germany currently available. The report clearly shows how the circular economy continues to be a dynamically growing industry with a strong future.

The continuously growing demands on recycling, the increasing standards regarding the production of secondary raw materials and the technical innovations resulting from this have all led to a positive development over the last few years: the sector had a turnover of around 84.1 billion euros in 2017 (+18% compared to 2010) and employed over 310,000 people in 2019 (+12% compared to 2010). Today, the German circular economy employs almost the same number of people as the energy industry. With a gross added value of around 28.1 billion euros in 2017 (+31% compared to 2010), the sector is one of the heavyweights.

The circular economy comprises far more than simply managing and collecting waste; analyses in the status report reveal just how important upstream and downstream technologies and trade are for the circular economy as well. Of the approx. 10,700 companies working in this industry, ca. 6,100 firms focus on refuse collection and transport, street cleaning and waste treatment and recycling. Just under 1,300 companies concentrate on waste management technology and a further 3,300 businesses trade in old materials. On average, each employee in the circular economy generated a turnover of €285,000 and a gross added value of €95,000 in 2017.

The international dimensions of the industry are particularly significant: for many years now, it has been an important player in the field of international trade – selling plant technology, machinery and secondary raw materials. For a while now, German legislation has been driving technological innovations, creating a solid base for today's successful exports. The subsector "waste management technology" alone generated exports worth 5.1 billion euros in 2018.

#### An overview of the development of the economic indicators in the circular economy







In 2017, the sector had a turnover of around

### 84.1 billion euros



(+18% compared to 2010) and, in 2019, had over

#### **Future activities**

Over the coming years, the circular economy will play an ever more important role in areas that will be key for the future: resource conservation and climate action. It is inevitable, therefore, that the industry will continue to expand and its value increase. The supplies of natural resources available to us are limited — which is why it is essential that they are protected and conserved. Politicians are looking to dramatically reduce consumption of these materials and gradually decouple the use of primary raw materials from population growth and economic growth. Further increasing the volumes of secondary raw materials that are returned to production cycles will be key here. This objective is also reflected in the German government's Raw Materials Strategy, which was published in December 2019.

The circular economy takes recycling a step further: besides bringing about a change in consumption and usage habits and achieving sustainable production activities, it also focuses on making it easier to recover resources by having products with a smart design. The ambitious goals of the circular economy, however, cannot only be reached by reducing volumes of waste. High quality recycling is also a must. What's more, measures must be undertaken to ensure that there is a growing demand for the increasing volumes of recyclates.

310,000 employees

(+12% compared to 2010)



The contribution that the circular economy is making to tackling climate change is already impressive: according to the national greenhouse gas inventory, the emissions generated by the waste management sector have fallen by 75% since 1990, from 38 million tonnes of  $CO_2$  to just under 10 million tonnes of  $CO_2$  in 2018. A further 50 million tonnes of  $CO_2$  are avoided every year thanks to recycling and the use of secondary raw materials. More recycling in the future would further grow the industry's efforts to curb climate change. And the circular economy has a number of other cards up its sleeve: increasing energy efficiency, substituting primary fuels, generating electricity, district heat and process heat in waste to energy plants are just a few examples of how the sector will continue to cut greenhouse gas emissions.

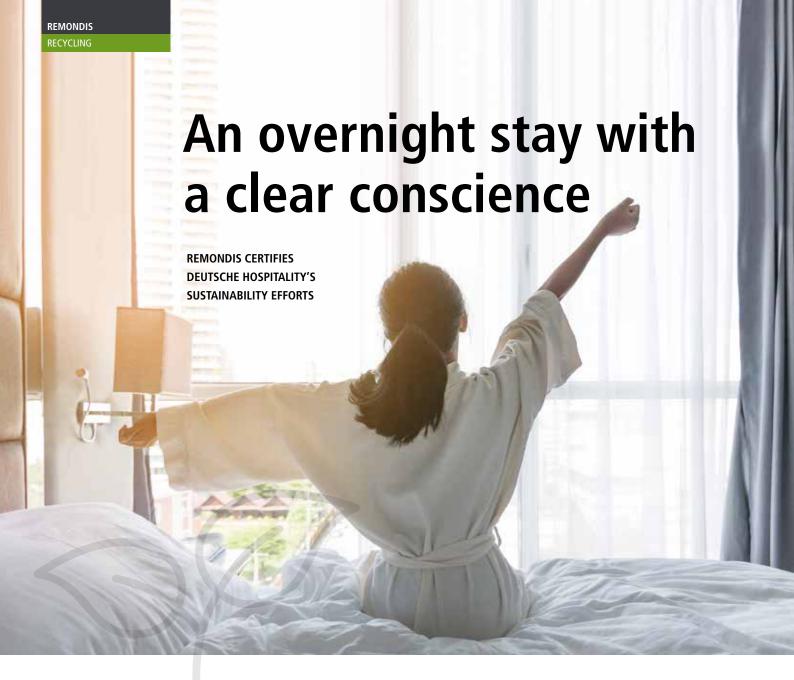
Download the 2020 Status Report on the German Circular Economy here:











Earlier this year, Deutsche Hospitality had its Sustainability Certificate renewed for all of its German hotels. REMONDIS acted as the certifying body for this process. We talked to Lars Wahnschaffe, the hotel group's sustainability manager, about this certificate and its role in the company's sustainability strategy.

REMONDIS AKTUELL: It has been ten years now since Deutsche Hospitality launched its pilot environmental management project in Berlin. What have you achieved since then and how have things changed?

Lars Wahnschaffe: To begin with, it was seen more as being a tool to grow environmental awareness in our hotels and among our staff – for example to improve the way the different waste streams were separated. Nowadays, though, it has gone far beyond being simply an environmental management tool and has become part of our comprehensive sustainability strategy.

**REMONDIS AKTUELL:** A success story then. What have you learned from all of this?

Lars Wahnschaffe: Well, it's most certainly been a success story! As soon as the pilot environmental management certification project had been completed, we then gradually rolled it out across the whole of Germany and professionalised waste management in our hotels with REMONDIS' Sustainability Certificate. To start off with, though, the system was implemented separately in one location after the other. This allowed the hotels to adapt the system to their local circumstances and to take the time they needed. This meant that we were able to add REMONDIS' accreditation to our environmental management system in 2012.

**REMONDIS AKTUELL:** What benefits do you think it offers?

Lars Wahnschaffe: We can use the certificate as an additional control and standardisation tool as well as to compare the progress we have made. More and more of our stakeholders expect us to deliver such transparency.

**REMONDIS AKTUELL:** What has the response of your staff been to the changes that have had to be made for the certification process?

Lars Wahnschaffe: Training courses are very important here and REMONDIS has given us great support in this area. The local management team in each hotel is responsible for this and they can appoint one of their employees to carry out this work as the local officer. So the courses are held at local level and more recently as e-learning as well. The next step is to pass on this knowledge to the housekeeping staff. In this case, it's a question of knowing which waste goes in which bin. The local managers must work out for themselves what the best way is to ensure the system is implemented correctly.

**REMONDIS AKTUELL:** And what things have actually been changed in your hotels?

Lars Wahnschaffe: Our guests can now segregate their waste in our meeting rooms. The next step will be to find a smart way to enable them to do this in the bedrooms as well. Sorting the waste after the guests have left is not an option as it's simply not hygienic — especially the bins in the bathrooms. We've considerably reduced the amount of paper in our rooms by offering digital brochures and magazines.

#### SUSTAINABILITY CERTIFICATE

REMONDIS' Sustainability Certificate is the only tool available in this form that enables a company's efforts towards preserving natural resources and curbing climate change to be measured and certified. Each individual type of waste and the way it is stored, transported and recycled are taken into account to calculate and document to what extent primary raw materials are preserved and energy consumption and carbon emissions cut. At the end of the process, the company

is presented with their Sustainability Certificate – giving them a document that certifies their sustainability efforts and also shows them where there is still room for improvement.

**REMONDIS AKTUELL:** It's not just a question anymore of simply doing something for the circular economy now though, is it? You've also got some concrete sustainability goals as well...

Lars Wahnschaffe: People's understanding of what sustainability is all about has clearly changed over the last few years. We now talk about our carbon footprint as a company, have sustainable supply chains and focus on social and sociopolitical requirements besides environmental issues. As regards our key customers — and indeed the capital market — this is certainly a USP that gives us a competitive edge and is one that is becoming ever more important ...

**REMONDIS AKTUELL:** So, with this in mind, how would you sum up the Sustainability Certificate?

Lars Wahnschaffe: The Sustainability Certificate is a really useful tool not only to measure how a company has improved its carbon footprint but also to help those involved move towards greater sustainability. A great starting point, therefore, with the potential for more.



Lars Wahnschaffe is head of the Corporate Social Responsibility team at Deutsche Hospitality's head office. The hotel chain unites five hotel brands under one roof: Steigenberger Hotels and Resorts, Jaz in the City, IntercityHotel, MAXX by Steigenberger and Zleep Hotels. Deutsche Hospitality has more than 70 hotels in Germany

# Serving the troops

WE WANT YOU FOR THE U.S. ARMY – REMONDIS INDUSTRIE SERVICE HANDLES HAZARDOUS SUBSTANCES ON BEHALF OF THE U.S. MILITARY

From Ramstein, to Incirlik, to Okinawa: U.S. military bases can be found on every continent and each and every one of them expects their waste management services to be sustainable, environmentally sound and of the highest quality. REMONDIS Industrie Service helps to make sure that these expectations are met. A responsible task that requires both comprehensive expertise and in-depth knowledge of logistics processes.

REMONDIS Industrie Service has been working as a partner to the U.S. troops for many years now, managing the hazardous waste at their military bases in many regions of the world. The waste materials that they handle there are no different to the materials REMONDIS Industrie Service manages in the civilian world. These range from typical

workshop waste (such as engine coolant, solvents and oil-contaminated materials), to gas cylinders, batteries, lye and acids, all the way through to medical waste from the military hospitals. The only substances that they do not deal with are warfare agents, explosives and ammunition.



#### Top quality recycling and waste management

Their central client here is the Defense Logistics Agency, a Department of Defense Agency that supports all U.S. combat forces – from the Navy, to the Air Force and Army, to the Marine Corps. This agency provides the divisions located around the world with the products they need and manages around five million items. The Defense Logistics Agency is also in charge of organizing waste management at the military bases and ensuring that the systems used comply with the national regulations of the countries in which the units are located. If the local environmental laws are less stringent than the standard guidelines in the USA, then the higher U.S. standards apply. This means that the sustainable hierarchy of 'reuse, recycling and environmentally sound disposal' governs every U.S. base, no matter where in the world it may be.

The Defense Logistics Agency has a global network of waste management providers, including REMONDIS Industrie
Service, to ensure this work is executed according to their wishes. The demands on the network partners are high. They must, for example, have a special license to perform these tasks, which must be renewed on a regular basis. Above all, they must have extensive expertise in handling a whole range of different wastes as well as different classes of dangerous goods.

#### Local solutions with international logistics

To date, REMONDIS Industrie Service has worked in a total of 13 countries, including areas of conflict, on behalf of the U.S. military as well as for multinational troops such as ISAF and KFOR. These hazmat specialists draw up a bespoke package of services for each individual military project that covers the whole chain of processes – from sample taking and chemical analyses, to sorting, packaging and transport, all the way through to the treatment, recycling and/or disposal of the materials in the company's own facilities.



REMONDIS Industrie Service has already worked for U.S. troops and multinational associations in Asia, Africa, Europe and Eurasia

REMONDIS Industrie Service has set up a complex logistics network to transport the materials – in most cases this involves crossing at least one if not more borders. Taking all ADR and IMDG regulations into account, it arranges for the freight to reach its destination by road, rail and sea. It is also responsible for making sure it has all the documents, notifications and permits that may be needed. Moreover, REMONDIS Industrie Service handles communications with all competent authorities in the country the materials are being shipped from, in the destination country as well as in the transit countries.

#### Experts for military waste management

REMONDIS Industrie Service has its own Military Service division that is based in the German town of Herne. This coordination center is dedicated entirely to the company's military clients. Besides the U.S. projects, this center also supports the teams delivering services to other troops, such as the German, Austrian, Canadian and Swiss armed forces.

The demand for highly professional services in the area of military hazardous waste management is growing, as climate action and environmental protection become ever more important. The Defense Logistics Agency awarded waste management contracts for Belgium, the Netherlands, Germany and Spain to REMONDIS Industrie Service earlier this year as they were found to be the best value. Frank Kampmann from REMONDIS Industrie Service's international sales department commented: "We not only see this as confirmation of our work but also as an incentive to step up our efforts for the future."

# Smooth operations

SAFER AND CLEANER THANKS TO A TYRE MANAGEMENT SYSTEM: A PILOT PROJECT IN OELDE



Of all the parts of a lorry, it is the tyres that suffer most from wear and tear. Carrying out daily checks using a new technical monitoring system helps to avoid breakdowns and reduce fuel consumption. Levels of safety and environmental protection are also further increased. These are the interim findings of the tests currently being performed on a new technical tyre management system at REMONDIS' branch in the Westphalian town of Oelde. Master mechanic, Thomas Feldhaus, talked to Annette Rojas from Continental Tyres Germany about his experiences with ContiConnect.



#### "Carrying out daily checks helps to avoid breakdowns and reduce fuel consumption."

Thomas Feldhaus, Master Mechanic at REMONDIS' depot in Oelde

Annette Rojas (Continental): An email or a text is sent to you when the sensor mounted on the inside of a tyre detects a drop in tyre pressure. What impact does tyre damage have on your everyday business?

Thomas Feldhaus: Our business is responsible for managing commercial waste, which means that we have to drive through large commercial buildings, to sorting plants and around depots every single day. These places often have screws, splinters, nails and other sharp objects lying around on the ground and these are picked up by our truck tyres almost every day. The ContiConnect tyre management system allows us to detect damaged tyres far more quickly than before. Most damage occurs when the trucks are being unloaded.

You have mounted ContiConnect into 32 of your vehicles. How many breakdowns have you managed to avoid since then?

We've been able to detect a gradual loss in tyre pressure due to tyre damage around twenty times and we've already been able to prevent trucks getting a flat tyre five times.

#### WHAT IS CONTICONNECT?

ContiConnect, the tyre monitoring platform developed by the well-known tyre manufacturer and automobile industry supplier Continental, has been used by REMONDIS' branch in the Westphalian town of Oelde for a number of months now. This platform enables the company to access data about the tyre pressure and tyre temperature of its fleet. The tyre information is updated when a vehicle goes past a yard reader. The benefits: fewer flat tyres, less tyre wear and tear, lower fuel consumption, lower servicing and maintenance costs, greater safety for drivers and vehicles, reduced fleet running costs and compatibility with telematics systems.





All in all, we have saved around 5,000 euros so far. The system has been a huge help with our dual tyres as it really is difficult for the drivers to check the inner tyres. Thanks to ContiConnect, we have been able to increase the vehicles' structural stability and minimise downtime. That, in turn, cuts costs and makes it easier for us to keep to our schedules. I know, when I drive off, that my tyres are in a good condition.

Using less fuel protects the environment. What other advantages does it offer in your opinion?

The fact that our trucks always have the right tyre pressure when they're on the road means we consume less fuel and that the tyres suffer less wear and tear. This is absolutely in line with our concept of sustainability and complements the courses we hold for our drivers about fuel-saving driving. What's more, the tyres last for longer and can be better retreaded. The system also warns me in good time of other defects, such as seizing brakes, as it lets me know when the tyre temperature is higher than normal. This system allows us to concentrate on our core business – providing reliable waste management services.



# An unusual project at Frankfurt-Hahn Airport

REMONDIS PERFORMS A GENERAL OVERHAUL OF THE AIRPORT'S OIL SEPARATOR UNITS

#### **AS-CONTROL**

Airports play an essential role in a country's infrastructure. Passengers, however, very rarely get to see what happens behind the scenes. The system on the ground is like a well-oiled machine and all of the cogs must work together smoothly for the planes to be able to take off and land. And, of course, there are the important issues of having a reliable waste management system and environmental protection measures in place.

It is inconceivable nowadays to operate an airport without a wastewater management system and separator units installed below the sealed surfaces. These systems need to be checked regularly to make sure that they are working properly and that they meet all water management requirements.

The same is true, therefore, for Frankfurt-Hahn Airport, which has to have its waste management infrastructure inspected every five years. This work was put out to tender in 2020 and the contract was awarded to REMONDIS AS-CONTROL GmbH. Three of the company's certified inspectors travelled to the airport in August where they spent eight days checking 19 large-scale light liquid separators and four fat separators, all of which are located below ground.

An extremely complex task. All of the containers, which together can hold up to 400,000 litres of liquid, had to be fully emptied and cleaned before the inspectors could assess their condition and carry out the necessary leak checks. "One of the more unusual challenges here was having to climb down the narrow, seven-metre-deep shafts and place the pipe stoppers in the inlets and outlets of the pipes which have a diameter of up to 60 centimetres," explained Tim Uphues, branch manager of REMONDIS AS-CONTROL GmbH.

REMONDIS AS-CONTROL's managing director Thomas Korba emphasised just how important this project has been as it is such a great reference for the company's capabilities: "We carry out such inspections around 2,500 times a year which means it is part of our everyday work. This was a particularly unusual project, though, simply because of its size. Thanks to the enthusiasm and qualifications of our employees and our excellent technology, we were able to complete the project much earlier than planned."

## REMONDIS AS-CONTROL's inspection vehicle on the runway in front of a cargo plane

#### BACKGROUND INFORMATION

Built as a military air base in 1951, Frankfurt-Hahn Airport is located near Hunsrück, approx. 125 kilometres (by road) west of Frankfurt am Main. It has been used for civil aviation since 1993. Currently the sixth-largest cargo airport in Germany, it has also made a name for itself over the last twenty years as being a central hub for low-cost passenger flights.

# REMONDIS continues to grow in Poland

EXTENSION OF A LONG-STANDING CONTRACT IN POZNAŃ – ACQUISITION IN ŁÓDŹ

REMONDIS is a well-known name in Poland and has been helping the country to set up a well-functioning waste management and recycling sector since entering the Polish market in 1989 after the country changed its political course.

A number of new milestones have been reached this year with the extension of the successful collaboration in the Poznań region and the acquisition of a company in the Łódź region.

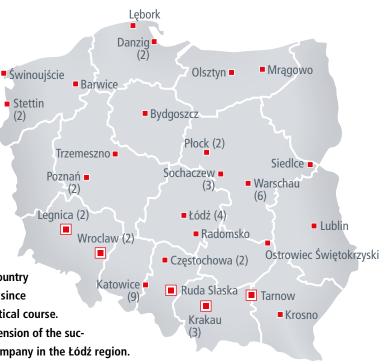
#### Poznań contract extended

The public private partnership (PPP) between the company, the City of Poznań and eight neighbouring districts is to continue its successful work. REMONDIS has been awarded a new two-year contract that puts it in charge of five of the seven waste management districts and gives it a role in the consortium responsible for the sixth district. All in all, it will be managing residual waste from 400,000 households – a volume of around 170,000 tonnes per year. A strong relationship of trust has been built up between the waste management association GOAP and REMONDIS Sanitech Poznań over the last 28 years but this was not the only reason for them opting to work with REMONDIS. The investments that the company has made – and intends to make in the future – in state-of-the-art technology also played a crucial role. It currently operates, for example, 110 modern vehicles equipped with camera systems to ensure it can deliver a reliable service. Moreover, REMONDIS is also planning to continue to invest in safety, IT and digitisation.

#### Takeover in Łódź

In the meantime, REMONDIS has further strengthened its market position in the Łódź region by acquiring the firm, Sanator. Founded 20 years ago, Sanator focuses primarily on collecting waste in two districts north of Łódź, namely in Aleksandrów Łódzki and Głowno, which have a total of 36,000 local residents.

"Our strategy has remained unchanged for years now. We wish to diversify our customer base and to offer them top quality services. Our fundamental principle here is to deploy standardised work processes – irrespective of whether we are serving a small town or the largest city in the region," commented Leszek Pieszczek, a member of REMONDIS Polska's board of directors.



REMONDIS' business locations in Poland



Playing it safe: kicking off the next chapter of the collaboration in Poznań: (from left to right) Rafał Jędrzejczak, Board Chair of REMONDIS Sanitech Poznań and Hanna Surma, Board Vice Chair of REMONDIS Sanitech Poznań

#### **BACKGROUND INFORMATION**

REMONDIS Polska currently employs around 3,600 people. In 2019, it collected and treated over one million tonnes of waste from a whole range of different categories. In addition to this, it collected more than 680,000 tonnes of waste materials as part of logistics tender contracts. 670,000 tonnes of residual materials were treated in the company's own plants and facilities.

# Reliable landfill services for almost three decades

HAUS FORST IN KERPEN: REMEX CREATES MORE SPACE FOR LANDFILL CATEGORY 1 (DK I) WASTE AT A DECOMMISSIONED MUNICIPAL WASTE LANDFILL



Using cutting-edge technologies and developing pioneering solutions, REMEX's ultimate goal is to recover as many materials as possible so they can be reused. However, not all types of mineral waste can be recycled. Which is why REMEX also offers sites where non-recyclable substances can be deposited. For example, at its Haus Forst landfill in Kerpen – a facility that guarantees a reliable service without having to encroach onto new land.

The Kerpen landfill, whose first section officially began operations in April, offers a reliable location for businesses wishing to deposit volumes of waste with low levels of contamination. Such materials include non-recyclable construction waste, earth, slag and roadwork waste containing tar. The site's catchment area covers a number of regions including Cologne, Bonn, Leverkusen, Aachen and neighbouring districts.

Construction, commercial and industrial firms will all be able to benefit from Haus Forst's reliable landfilling services for many years As with all the landfills operated by REMEX, Haus Forst has been a long-term project that has involved meticulously planned, carefully implemented and officially approved engineering work. One interesting technical fact about this location is that it is a "landfill on a landfill" — as the site is not new. The Haus Forst landfill has been around since the 70s and used to be run as a category II landfill accepting municipal waste from a variety of regions, including the Rhine-Erft district. The active sections of the landfill had to be closed down in 2005, however, after a law came into force banning the landfilling of municipal waste that had not been pre-treated. At this point, just half of the volume approved for the landfill (8.2m cubic metres) had actually been filled.

The most can now be made of the remaining volume thanks to this newly approved category I landfill. A bi-functional intermediate seal liner has been installed where the old and new sections of the landfill meet. On the one hand, it seals the surface of the old landfill and, on the other, seals the base of the new landfill.

By enabling an old landfill site to be recommissioned, REMEX has succeeded in providing a safe place where old materials can be deposited without having to use new, unspoiled land. All in all, REMEX's new landfill in Kerpen has the capacity to hold around 4.4 million cubic metres of material. With approx. 250,000 tonnes being delivered to the site each year, it can expect to remain open until 2049.

All in all, REMEX's new landfill in Kerpen has the capacity to hold around



4.4m cubic metres

of material



# REMEX celebrates a milestone anniversary

#### SUSTAINABLE GROWTH AND A STRONG BRAND

Reputation is not just of value in people's personal lives. It is important for firms to make a good name for themselves as well – as a badge of recognition, a factor for success and as a guarantee for the promise of quality linked to this. The brand does not necessarily have to be as old as the company. REMEX, for example, has been celebrating the 30th anniversary of its brand; the company itself, however, was founded around 40 years ago.

REMEX is firmly established on the recycling market as a specialist for professionally managing construction and industrial mineral waste. With over 60 business locations at home and abroad and more than 800 employees, the company has a portfolio that covers all areas of mineral waste management - from processing the materials in its own facilities, to recycling, to disposal. Its primary goal is always to recover resources in a sustainable and cost-effective way.

With REMEX's international activities continuing to steadily increase, it decided to change its company name, which had, up to then, had a more national feel about it: since 15 October, REMEX Mineralstoff GmbH has been run under the name REMEX GmbH. Dropping the German word, "Mineralstoff", not only reflects its growing internationality but also its wider range of services.



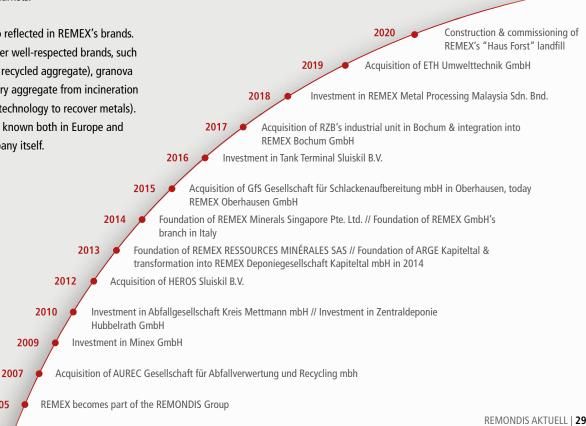
The company's business activities began in Düsseldorf in 1981 as B+R Baustoff-Handel und Recycling GmbH. The REMEX name was officially registered as the business's brand name nine years later. The company was a success right from the very start. Over the years, REMEX has added numerous related fields of business to its portfolio and gradually expanded geographically - both in Germany as well as into international markets.

This ongoing growth is also reflected in REMEX's brands. Nowadays, it includes further well-respected brands, such as remexit (quality assured recycled aggregate), granova (quality-controlled secondary aggregate from incineration bottom ash) and MERIT (a technology to recover metals). All of these names are well known both in Europe and overseas, just like the company itself.

2005

"Together with the other milestones we have enjoyed over the last decades, this anniversary of our brand is a further landmark in our company's lively history."

Michael Stoll, Managing Director of REMEX GmbH



# Digital scaffolding

XERVON DEVELOPS ITS OWN SOFTWARE SOLUTION COVERING ALL ASPECTS OF SCAFFOLDING WORK





Looking at the field of scaffolding, one might well get the impression that this is a business that relies very much on manpower and is far removed from the world of digitisation and Industry 4.0. But, in fact, the opposite is true. It has been using bits and bytes for a long while now – and not just in the office but on the worksites as well. MULTISCAFF, a project being developed and implemented by XERVON Gerüstbau, the company's scaffolding specialists, illustrates perfectly how bespoke IT solutions can benefit this field as well.

Scaffolding projects involve a large number of individual stages – and manually erecting and dismantling the scaffold are just two of them. Numerous other processes are involved such as planning work, structural engineering tasks, obtaining permits, managing materials and organising the logistics. It goes without saying that digitising

all these stages create both advantages and optimisation opportunities. Especially for companies like XERVON that not only carry out several hundred complex scaffolding projects every year but also deliver regular scaffolding services to their customers as part of service agreements.



Four years ago, XERVON, one of the leading scaffolding businesses in Europe, decided to use a digital basis for their many tasks. The goal: to optimise interfaces, promote exchange of data, reduce the complexity of their system and minimise system breakdowns. It took a detailed look at what the market had to offer - and came back disappointed. While there were a whole range of individual data solutions, there wasn't a single platform around that could cope with the extensive set-up of this scaffolding specialist with its wide-ranging activities, customers and projects. This meant that the company had to develop a comprehensive, future-oriented and mobile solution itself. And this is precisely what XERVON has achieved with MULTISCAFF a program that covers each and every aspect of a scaffolding project.

Input from a wide range of experts

A project team of scaffolding, commercial and IT specialists was set up in 2017 to develop MULTISCAFF. Step by step, they tackled each individual stage of scaffolding work, gradually integrating them into the project. An extremely complicated task as it had been clear right from the start that this future IT solution should not only interconnect in-house departments. Interfaces would need to be set up or taken into account for public authorities, customers and procurement platforms. The first pilot tests were carried out using real projects in 2018. The findings of these tests were then used to further optimise the system. At the same time, the team continued to further develop the program, integrating more and more areas of this complex field. A task the team is still doing today.

MULTISCAFF was rolled out for the first time for the company's service agreements. Its project business was added in 2020. This stage involved a complex development phase and will not be fully implemented until the end of the year. One thing is already clear: this SAP-based IT solution is a success. The MULTISCAFF apps are also proving to be very helpful as users can access the data they need via their mobile devices. These apps may just be the tip of the iceberg looking at the project as a whole, but they fulfil an important function bridging the gap between the office and worksite.

MULTISCAFF offers users a whole number of advantages, from being able to remotely enter data into the system all the way through to accessing documents in real time from any place and at any time.

A high-end process across the whole workflow

MULTISCAFF offers users a whole number of advantages, from being able to remotely enter data into the system all the way through to accessing documents in real time from any place and at any time. Similar to a construction site file, the program provides all relevant information as it is needed – from the order, to the measurements, to the documentation and invoicing.

Whether tracking an order, planning daily schedules or taking measurements at the worksite: MULTISCAFF helps people to carry out many different operational tasks

Both XERVON's customers and XERVON itself benefit from MULTISCAFF as it considerably reduces administrative work, further optimises processes and leads to more standardisation. What's more, it increases transparency and improves communications. All these factors help cut costs, reduce the amount of time needed for a project and enable the company to be even more flexible. Moreover, the data can be archived so that it can be accessed quickly and easily years later.

The project has still not been fully completed. To make it as future-oriented as possible, MULTISCAFF will continue to be extended to include additional functionalities. The program will, therefore, grow in step with the tasks, incorporate new developments and integrate technological advances. At the end of the day, digitisation is a never-ending project - and not just in the field of scaffolding.

> Supporting decision-making processes with a single click: customers benefit from having a comprehensive real-time overview of their projects – helping them to monitor work and plan their next steps



For a good twelve months now, BUCHEN has been offering a service that offers many benefits but is extremely rare: rope access and positioning technology. Eleven experienced climbers make their way to hard to reach areas where they carry out complex industrial services and other related tasks. There are practically no limits to where they can work. Large furnaces, chimneys and boilers are on their list of regular job sites as are large buildings, towers and façades.



Industrial climbers are a rare species. According to estimates, there are around just 4,000 of these specialists in Germany — despite there being such a high demand for their work. Rope access technology creates a whole number of advantages. It is, for example, considered to be a particularly plant-friendly way of delivering a service that can be implemented quickly, effectively and cost-efficiently without the need for long lead times. Moreover, it has very little impact on a plant's normal operations and enables work to be performed on areas that are beyond the capabilities of other kinds of access technology, such as cranes, work platforms and scaffolding.

BUCHEN's work at height specialists can be found carrying out cleaning, monitoring, inspection and maintenance projects. They perform sand blasting and insulation work as well as steel construction and corrosion control tasks to name just a few. To be able to do this, the climbers are experts in two completely different fields — holding multiple qualifications so they can work with rope access technology and deliver a specific industrial service.

BUCHEN currently has eleven work at height specialists, six of whom focus entirely on industrial climbing work







It is practically impossible to find operatives that have both these qualifications. Which is why BUCHEN drew up a targeted training programme to create a team that combines a variety of skills. A pre-requirement here is learning to use rope access technology. Building on this, BUCHEN then teaches the specialist knowledge needed to carry out the different kinds of industrial work and trains its operatives to use their climbing skills in the more unusual areas that industrial service providers must travel to.

As with all its service divisions, BUCHEN uses tried and tested technology and has stringent safety standards in place for its rope access work. It has compiled its own comprehensive set of guidelines as the commonly used occupational safety measures are simply not sufficient for this particular area of work. The climbers truly are experts in their field. The rope access supervisors have the paperwork to show that they have already worked with this technology for more than 250 days. The fact that this team of operatives have spent so much time working at height is an additional advantage. Rope technicians do not suddenly become competent at working with this equipment. They have to practise again and again - an opportunity that they get thanks to the company's everyday business.

### "Safety is our number one priority"

The company's industrial climbing/rope access technology division is part of BUCHEN KraftwerkService and is managed by Stefanie Busch. She is herself a rope access technician and has Level 3 qualifications, the highest level of qualification available in line with the prestigious FISAT standards.

Ms Busch, people watching a team of industrial climbers at work may be reminded of mountaineers. Are there any similarities?

That might be the first impression but rope access technology and mountain climbing are worlds apart. Our equipment is far more complex. We are, for example, always secured to two separate ropes to keep us twice as safe. What's more, work at height specialists are always deployed as a team and even in a two-person team, at least one of the climbers must have the highest level of qualifications.

#### So what is an assignment like? Can you just travel to the site and start work right away?

It's not quite that simple. At the end of the day, we always focus on achieving the highest possible levels of safety. Before the work can begin, we must draw up comprehensive access and worksite plans. On top of this, we always develop a precautionary rescue concept and carry out an on-site risk assessment.

#### How do work at height specialists keep fit?

The best way for us to keep fit is simply doing our everyday work. Our climbers also take part in further training courses and annual refresher courses and must practise the safety procedures regularly. We must never forget the safety measures – even when the view from the top of the chimney is so fantastic.



Do you know how important phosphorus is for human life? It is vital. Find out why in this video Valuable and vital substances can sometimes be found in places where we might not expect to find them: sewage sludge at municipal sewage treatment plants contains large volumes of phosphorus. This element is essential for all forms of life on Earth – for example, for our bone tissue, our teeth and even our DNA. It is vital for energy metabolism in human cells. Plant growth is impossible without it. What's more, with the world's population continuously growing, the importance of phosphorus can only increase as it is a central chemical element in food production.

District.

In nature, this element is found as phosphate and around 260 million tonnes are mined every single year. Not in Europe, however, which is almost fully dependent on imports. Which is why the EU Commission added it to its list of 'critical raw materials'. Two years before this, the German government had included it in its German Resource Efficiency

Programme (ProgRess) and, in 2017, it determined that phosphorus will have to be recovered from sewage sludge in the future.

Successful participation in a Europe-wide tender

#### BACKGROUND INFORMATION

Natural reserves of phosphate ore can be found in just a few countries: Morocco, China, USA, Algeria, Jordan, Russia and South Africa mine this raw material. Europe is dependent on imports and is facing a growing problem: increasingly, the virgin raw material is contaminated with heavy metals and uranium, which are imported as 'by-products'.

REMONDIS Aqua Stoffstrom GmbH & Co. KG has been working with local authorities and water and wastewater associations for decades now and is well-known both in Germany and Germany's neighbouring countries for its expertise in the field of sewage sludge recycling. From 2021 onwards, the company will be responsible for managing

and recycling around 30,000 tonnes of sewage sludge from

the sewage treatment plants located in the Rhine-Neckar



This contract was awarded to the company after it submitted the most cost-effective bid during the district's Europe-wide tender process. "We deploy state-of-the-art technologies, innovative processes and cost-effective concepts to manage and treat sewage sludge," commented Ralf Czarnecki explaining the company's approach. "We help to conserve natural resources and ensure important raw materials can be returned to production cycles for reuse. We also believe that there is great potential here to further develop this partnership, which can be extended until 2030." "Sewage sludge contains large volumes of phosphorus.

Recovering this resource from the sludge on a regional and ultimately national basis will help cover local demand for this product and reduce our dependency on imported material," said Peter Mülbaier, looking ahead into the future. He is the spokesperson for the management team at Rhein-Neckar-Phosphor-Recycling GmbH & Co. KG, the company commissioned to carry out this work. REMONDIS sees this project as a smart blueprint for future sewage sludge recycling operations.

Putting their signature to the new partnership: (from left to right) Ralf Czarnecki (Managing Director of REMONDIS Aqua Stoffstrom GmbH & Co.KG), Peter Mülbaier and Thomas Brümmer (Managing Directors of Rhein-Neckar-Phosphor-Recycling GmbH & Co. KG)





## Unusual times, unusual measures

**EMPLOYEES CREATE A SAFE ENVIRONMENT FOR CUSTOMERS AND COLLEAGUES** 

**ZEURAWASSER** 

Keeping customers, staff and suppliers safe has been right at the top of REMONDIS' priorities throughout the Coronavirus pandemic. As long as employees have the information they need, watch out for each other and are mindful of social distancing and hygiene rules, then key services can continue to be provided uninterrupted. Two examples from Brandenburg and Mecklenburg-Vorpommern demonstrate how it is possible to deliver essential services and keep everyone safe during such difficult times.

The staff working at EURAWASSER Nord GmbH in the German state of Mecklenburg-Vorpommern reacted very quickly to the Coronavirus pandemic. Its team had already adapted its business processes and entered into crisis mode by the beginning of March. The company's Covid task force has been constantly analysing and evaluating the situation since then - making sure that drinking water has been supplied and wastewater treated throughout this period.

Andrea Wagenknecht, a technician at EURAWASSER Nord responsible for processing household connections, has been carrying out her work remotely

#### Textbook crisis management

This is, of course, simply not possible without a healthy workforce. Every day, EURAWASSER's employees work on delivering services involving the world's most valuable resource: water. Straight away, the company restricted the number of people able to enter its offices and plants, introduced minimum distances between staff workstations, staggered the working times and increased the number of people working from home. Collaborating with others in the REMONDIS Group, Andreas Russ, technical managing director at EURAWASSER Nord GmbH, and his team were able to get hold of the supplies needed to implement the 'handsface-space' rule as well as additional PPE for the technicians operating in the field.



Having work processes digitised has also been very useful. "At the moment, much of my work is carried out by phone or email. Every day, I check out the latest developments and government guidelines so that I can organise customer appointments and building measures and ensure everything continues to run smoothly. The way we procure materials has also changed," said Ronny Genschow, talking about his daily work, which involves planning and preparing the installation of domestic water supply and sewer connections. Andrea Wagenknecht, who plans the household connections with her customers, also believes much progress has been made: "I can now work no matter where I am. The way I plan my appointments and carry out my tasks is really effective. It's no problem for me to work remotely and support the customers in my area."

A big 'Thank You' to everyone

The pandemic has been a challenge for each and every employee. The digital processes may well have made their work easier but the tension can still be felt in many places. Especially when it has to do with such an important task as delivering an essential service.

#### **BACKGROUND INFORMATION**

Operating all plants and facilities on behalf of the Wasserversorgungs- und Abwasserzweckverband Güstrow-Bützow-Sternberg (WAZ) water association, **EURAWASSER Nord GmbH (a fully owned REMONDIS** Aqua subsidiary) is responsible for securing water supply and wastewater treatment across the water association's rural catchment area. This catchment area is the largest in Mecklenburg-Vorpommern in terms of surface area and is home to approx. 50,000 people.

Which is why LWG Lausitzer Wasser GmbH & Co. KG decided to give their staff gift tokens for Cottbus shops this year to thank them for all they have done. "Our employees have worked so hard over the last weeks and months to make sure that drinking water supply and wastewater treatment were never put at risk despite the extraordinary situation brought about by the Coronavirus pandemic," explained Marten Eger, technical managing director at LWG. This crisis has caused quite a bit of inconvenience for the workforce with them having to travel separately to work sites, work in separate teams and take on unusual shifts.

> LWG Lausitzer Wasser GmbH & Co. KG, a public private partnership between the City of Cottbus and REMONDIS Aqua, is one of the largest and most well-known water management businesses in Brandenburg: together with its ca. 1,980 employees, the company makes sure that the approx.



### 130,000 people

living in and around Cottbus always have access to the supplies of drinking water they need. Moreover, the firm is also in charge of wastewater treatment in Cottbus and ten neighbouring districts.

By giving their staff gift tokens from local shops, LWG has also succeeded in making a virtue out of necessity – as they are supporting local retailers who have also been badly impacted by the pandemic. "All in all, we've got off lightly so far and presenting these gift tokens is our way of saying a big 'Thank You' to everyone," concluded Jens Meier-Klodt, commercial managing director at LWG.

# Clean water in the Lausitz

MUCH LOWER LEVELS OF IRON IN THE RIVERS THANKS TO WASSERVERBAND LAUSITZ BETRIEBSFÜHRUNGS GMBH

Mining still continues to affect the environment today. Which is why water supplies in mining regions have to be carefully monitored and regulated both during and after the decommissioning of mines. As is the case in the Lausitz's brown coal mining areas.

Previous mining activities have led to groundwater levels rising in this region and this water, which contains high levels of iron, is getting into the rivers. For example, into the Spree and Kleine Spree rivers. Responsible for all mine remediation work, Lausitzer und Mitteldeutsche Bergbau-Verwaltungsgesellschaft (LMBV) has undertaken a number of measures to improve the situation.

#### Removing the iron from the water

Three modular water treatment facilities located in Burgneudorf, Neustadt and Ruhlmühle (east Saxony) are at the heart of this clean-up process. These facilities remove a substantial amount of the iron from the groundwater before it flows into the rivers. While most of the water contains iron hydroxide when it enters the treatment facilities, almost all traces of it have gone by the time the water treatment process has been completed and the water is discharged into the rivers.

Large, stationary plants are not required to treat the ground-water. Instead, small-scale units are being deployed that contain reaction, flocculation and sedimentation containers as well as a sludge thickener. It is certainly true that these space-saving types of technology are more difficult to service and clean. However, this is more than compensated for by their flexibility as their modular structure means they can be extended in no time at all whenever this may be required.

#### Contract following a Europe-wide tender

Wasserverband Lausitz Betriebsführungs GmbH (WAL-Betrieb) will be in charge of operating, servicing and repairing these three container-supported water treatment facilities from 2021 onwards. The company, a subsidiary of EURAWASSER GmbH & Co. KG, is the leading water management provider in the Lausitz region and recently won a Europe-wide tender to remove the iron from the water entering the rivers. It has been collaborating with LMBV for many years: one of their first cooperation projects involved



## Things are moving in Rotterdam

LONG-STANDING PARTNERSHIP EXTENDED WITH THE WORLD'S LARGEST PVC MANUFACTURER

When the compact disc hit the market at the end of the 80s and became the most popular music medium, everyone believed that LPs were out for good. Around ten years ago, however, vinyl records gradually staged their comeback - sometimes black, sometimes colourful but always made of polyvinyl chloride resins or simply PVC.

About the same time, in 2009 to be exact, REMONDIS Aqua began treating the wastewater generated by one of the biggest PVC production plants. Located at the Botlek Business Park on the site of Europe's largest deep water sea port in Rotterdam, the world's biggest PVC producer Shin-Etsu Chemical Co. Ltd. uses this plant to manufacture the raw material needed to produce PVC, the so-called vinyl chloride monomer. Once transformed into PVC, it can then be used to make a whole range of products such as pipes, window frames, cable sheathing and flooring. And records, of course.

A further eight years of partnership & a complex programme

Shin-Etsu and REMONDIS Aqua have now extended their partnership by a further eight years to ensure that the around 500,000m3 of wastewater generated by the plastic production processes each year continue to be safely treated. Being the operator of the wastewater treatment facilities, REMONDIS' international water and wastewater specialists now face a comprehensive work schedule in Rotterdam.

By providing its services, REMONDIS Aqua helps its customers to produce environmentally friendly raw materials for industrial businesses. And REMONDIS and Shin-Etsu have another thing in common as they strive to protect the environment: both set much store on recycling. Most of the processes operated by REMONDIS involve recovering materials for reuse and Shin-Etsu's global operations use around 771,000 tonnes of recycled PVC – thus ensuring that this material, too, is returned to production cycles.



The composition of the wastewater generated by the plant's chlor alkali product and vinyl chloride production activities is extremely complex. The wastewater treatment system at the Botlek Business Park in Rotterdam, therefore, involves two stages – a chemical-physical flocculation phase and a biological treatment phase – to ensure this water is treated effectively. In 2021, REMONDIS Aqua is to modernise, extend and adapt the facility to the ever increasing discharge requirements in five separate stages. An ambitious project, considering the challenging conditions and requirements of a chemicals production site and the fact that this work will be carried out while the plant remains in operation

#### **Neighbourly help** secures water supply

WAL-Betrieb - a REMONDIS Aqua company - did not hesitate when they heard that a major drinking water pipe belonging to the Elsterwerda water and wastewater association in the south of Brandenburg had burst at the beginning of November. The members of Wasserverband Lausitz Betriebsführungs GmbH's emergency team immediately provided their counterparts from the neighbouring catchment area with drinking water tankers. Thanks to their help, the 16,000 people living in Amt Plessa and the town of Elsterwerda were able to access this most important foodstuff while the pipe was repaired.



#### A REMONDIS Trade and Sales' apprentice is the best in Germany in 2020

The IHK Fulda (Fulda Chamber of Commerce) has named Pascal Krause the best in Germany for his apprenticeship course (management assistant for information and telecommunications systems) in 2020. He was presented with three certificates as the best IT management assistant in the IHK Fulda's region, in the German state of Hesse as well as in the Federal Republic of Germany.





Chamber of Commerce awards for Pascal Krause and REMONDIS Trade and Sales GmbH: (from left to right) Sandro Storch (Head of Apprenticeships, REMONDIS Trade and Sales GmbH), Pascal Krause (Germany's best IT management assistant, REMONDIS Trade and Sales GmbH) and Ralf Drews (Authorised Signatory, REMONDIS Trade and Sales GmbH)

#### REMONDIS Herne supports 'Anpfiff zum Berufsleben'

The sports club, Verein Sportfreunde Wanne-Eickel, is one of the oldest grassroots football clubs in Herne and does much to help young people - and not just on the pitch. In 2014, club members launched the "Anpfiff zum Berufsleben" [Kick off your career] programme and have been helping and accompanying school leavers to find a job ever since. They not only assist club members, however – non-club members can also turn to them for help and advice. This careers programme is now also being supported by REMONDIS' business in Herne.

With the help of the "Anpfiff zum Berufsleben" programme and, above all, thanks to his personality and dedication, the first young footballer has been given the opportunity to do an apprenticeship at REMONDIS to become a professional truck driver. "We are so pleased with this new collaboration and our very first recommendation turned out to be a really lucky find. He's doing a great job and is achieving excellent



(from left to right) Markus Rohmann, 1st Chair of Sportfreunde Wanne-Eickel 04/12 e.V., Henning Schulte-Geldermann, Managing Director of REMONDIS Herne and Dortmund, Former Mayor Erich Leichner and apprentice Laurin Büteröwe

grades at his college. It's all going brilliantly," commented REMONDIS managing director, Henning Schulte-Geldermann. His next apprentice – recommended by "Anpfiff" – has already signed his contract. He will be starting his apprenticeship to become an industrial management assistant in 2021.

#### Waste2Water Technologies and Aquasoil Recycling join the REMONDIS family

Two new companies have been integrated into the REMONDIS Group in Australia: Waste2Water Technologies (W2W) and Aquasoil Recycling. W2W processes non-hazardous liquid residue and operates facilities in Somerton in the north of Melbourne, while Aquasoil Recycling offers mud disposal services for non-destructive drilling and boring projects in the same suburb. The acquisition of the two companies and their experienced personnel will help grow REMONDIS' market presence and enable it to extend its service and treatment portfolio to include the processing of liquid residue in Victoria.



Waste2Water Technologies and Aquasoil Recycling are now part of the REMONDIS Group

# Billerbeck neighbourhood supports eco-friendly refuse collection

DREITELKAMP HOUSING ESTATE IN BILLERBECK BACKS REMONDIS' "COME OVER HERE!" CAMPAIGN

From a neighbourhood in Billerbeck



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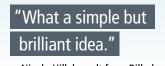
At the beginning of the year, Nicola Hillebrandt noticed a slogan written on the side of one of REMONDIS' refuse collection trucks. The mother of two young boys, it is a must to stand at the window every week – as soon as the truck can be heard – to watch the bins being emptied.

REMONDIS had just had a new advertising slogan printed on the side of their vehicle to encourage local residents to place their bins next to each other on one side of the street and so make the collection process more environmentally friendly.

"What a simple but brilliant idea. It makes absolute sense to do this in our neighbourhood. The trucks don't need to drive up and down the road twice, do three-point turns or keep stopping and starting as they travel from one bin to the next. And so I decided to get in touch with REMONDIS and they sent me the flyer for their "Come over here!" [Komm doch mal rüber!] campaign," explained Nicola Hillebrandt.

She discussed the project with her neighbours and within no time at all they set about implementing the "Come over here!" campaign.

"The reaction has been great. Everyone puts their bin on one side of the street so they are all lined up one next to the other. REMONDIS' drivers are able to empty the bins without having to manoeuvre their vehicles round tight corners or travel up and down the same road twice," said Rita Robert, who also lives on the estate. We would like to encourage other neighbourhoods to join in this campaign. Simply talk to your neighbours and place two same-coloured bins in pairs next to each other, i.e. a yellow bin next to a yellow bin and a brown bin next to a brown bin. A small gesture — but one that really helps to make refuse collection services more environmentally friendly.

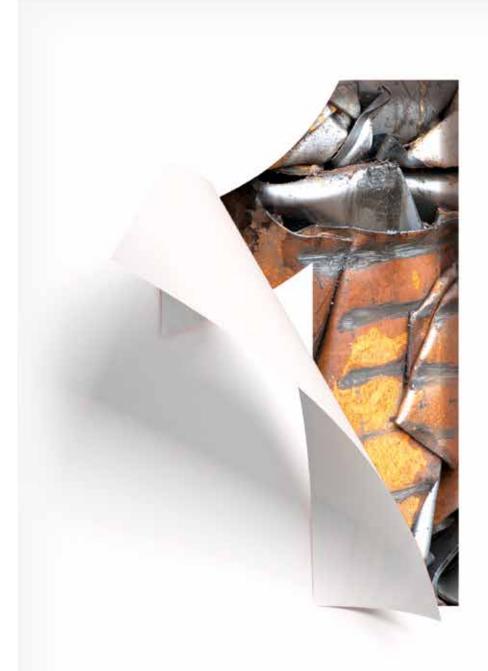




# Merry Christmas & Happy New Year







### 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.

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