

The REMONDIS Group magazine

# REMONDIS AKTUELL

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REMONDIS  
AKTUELL

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## The third way

A Europe-wide recycling initiative  
to help curb climate change

### Mobility without borders

Transdev and RETHMANN are getting to know  
each other – and developing new ideas

### Safety on our roads

Setting an example: REMONDIS is retrofitting  
its vehicles with blind spot assist systems

### E-scooter & Co.

Lithium ion batteries are a danger to  
humans and the environment. A solution  
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RETRON wins Innovation Prize

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Dear Readers!

If you look back at the editorial in the last issue of REMONDIS aktuell, then you'll find that the comments made there were almost prophetic. Just one of the topics it mentioned was the droughts in 2018, predicting that we could expect much of the same this year. Here we are, just a few months on, and this prediction has come true. Having analysed empirical evidence and ice cores, the overwhelming majority of climatologists agree that these weather conditions have been caused by industrialised humans – and that they can only be put right by humans. The question here, of course, is how. Most people are focusing on cars, energy generated by fossil fuels and, of course, air travel. Everyone is talking about the electrification of vehicles. You just need to consider the physical facts, however, to realise this will not be easy to implement. Germany's national grid, for example, would be unable to supply the power needed if all vehicle owners tried to recharge their car batteries at the same time. The question must, therefore, be asked whether electromobility is the right solution. The move towards the electrification of vehicles is well underway though, as is the switch from fossil fuels to renewable energy. Scientists, however, are predicting that these measures will not be enough on their own. We have another good idea here and one that is practicable – as can be seen by REMONDIS' daily work. Namely, making the most of the potential of recycling to curb climate change, preferably on a global scale. If humans were to succeed in systematically recovering raw materials and returning them to production cycles and if they were to stop sending waste to landfill (so methane is not produced there), then this would be the third most effective way of reducing greenhouse gas emissions. Germany made this move back in 2005 when it passed the 'TASi' [Technical Directive on the Recycling, Treatment and Disposal of Municipal Waste]. It is high time that a European TASi is drawn up or – even better – a global TASi. We are systematically implementing this law at REMONDIS every single day.



Max Köttgen, REMONDIS Board Member

Looking at the international stage, Russia is intensifying its efforts to reduce the amount of waste it takes to landfill by creating a well-functioning circular economy. The Russian government has launched an initiative that has made it obligatory for all 80 Russian regions to appoint a general operator to modernise their regional waste management sector and set up more recycling systems. For many years now, REMONDIS has been running just such a system in Saransk, the capital city of the Russian Republic of Mordovia and – according to a 2010 survey – one of the best cities to live in in Russia. The city is, therefore, acting as a role model, showing the direction that the Russian waste management sector could move in in the future.

A number of our new apprentices joined the 'Fridays for Future' movement when they were at school, calling for more to be done to stop climate change. And so it was a logical decision for them to do their apprenticeship at REMONDIS where they can carve out a sustainable career for themselves, "Every Day for Future" so to speak. REMONDIS' systematic recycling operations ensure waste is transformed into raw materials, energy and heat and play a considerable role in conserving natural resources and tackling climate change. Welcome to the climate professionals.

Yours

Max Köttgen

# Climate change and recycling in Europe

THE CIRCULAR ECONOMY – A VITAL COMPONENT TO ACHIEVING THE PARIS CLIMATE TARGETS

Every Friday, schoolchildren from many Western countries skip school to demonstrate for more effective climate protection, an initiative begun by the Swedish climate activist Greta Thunberg. Looking at the slogans on the protest signs, these pupils obviously have a sense of humour as well. “There’s less hope for the future of our planet than there is for my maths final!” and “The Titanic wouldn’t have had a problem today!” are just two of the signs being held up. However, neither the ‘Fridays for Future’ movement nor the general public seem to be aware of the connection between climate protection and recycling. Many politicians do not seem to realise either just what a positive impact a systematic, well-functioning and resource-friendly circular economy can have on combatting climate change. REMONDIS has taken a closer look at the many studies and calculations that have been published recently, including those from the BMU [Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety]. This information coupled with its own experience of materials recycling has led it to come up with a very promising theory. Besides the switch from fossil to renewable fuels (which is already ongoing) and the drive towards clean mobility, one of the biggest single measures for ensuring the Paris climate targets are met would be to introduce and systematically implement a landfill ban across Europe.



If the results achieved in Germany from banning landfilling and promoting recycling were to be extrapolated to Europe or even the world, then climate change could be slowed down, if not halted

In December 2015, the 195 countries attending the Paris Climate Conference voted to adopt a global, legally binding agreement to tackle climate change. The Paris Agreement builds on the plans set out in the Kyoto Protocol, which came into force in 2005 and aimed to create binding targets for greenhouse gas emissions in the industrial nations. The goal of the new global action plan signed in Paris is to keep a global temperature rise well below 2°C above pre-industrial levels to prevent the major damage that can be expected from climate change and reduce its impact. Since the Paris Agreement, the majority of industrial nations have begun

taking more or less substantial measures to reduce their carbon emissions. Right from the start, they have focused on the energy sector and the mobility sector. And yet the news that hit the headlines this June came as a real bombshell: “2050 climate targets rejected at EU summit.” Energy supply, which should be generated from wind, sun and biofuels rather than oil, coal and gas, would no longer be enough to reach the climate targets. Well insulated homes and efficient, low-emission e-mobility would not enable this promise to be kept either.

**"Fighting global warming and environmental crises is the most urgent challenge of our time. Strengthening the circular economy is one of the most powerful tools in our arsenal. It will not only help achieve the Paris Agreement targets but also bring huge benefits for the economy and society."**

Werner Hoyer, President of the European Investment Bank Group

### And where is the EU's Circular Economy Package in all of this?

It would appear that, in their search for solutions, the EU has once again completely ignored the huge potential of recycling. Simply increasing the volumes of recycled raw materials used by industrial businesses from the present 15% to 30% in Germany alone would reduce CO<sub>2</sub> emissions by 60 million tonnes, the equivalent of approx. one third of the potential of renewable energy.

If humanity wishes to make sure that global temperatures have not risen by more than 1.5°C by 2050, then carbon emissions may not exceed 420 gigatonnes during this period. Looking at current emission levels and the lack of speed that climate protection measures are being implemented, this budget will have been used up in just ten years' time. The EU Commission's Circular Economy Action Plan and its legislative proposals regarding the handling of waste are promising and certainly seem to be heading in the right direction.

Recycling still plays a minor role in the climate debate



### Climate change: a few facts & figures

Having looked at the empirical evidence, the overwhelming majority of scientists agree that the rising temperatures and the catastrophic consequences this brings with it are man-made. This has been proven in a number of ways, including analysing ice cores from the Antarctic and Greenland. The following takes a more detailed look at the facts:

- Atmospheric CO<sub>2</sub> concentrations before industrial emissions began: 260 to 280 ppm (parts per million); by and large, these concentration levels remained stable in the 10,000-year period before the Industrial Revolution
- Measurements taken since 1850 show concentration levels have been rising at an ever faster rate
- Atmospheric CO<sub>2</sub> concentrations reached 400 ppm for the first time in March 2015; this figure was 412 ppm in 2019 – i.e. 40% above the pre-industrial level and 33% above the highest CO<sub>2</sub> level ever reached in the past 800,000 years
- The amount of CO<sub>2</sub> emitted by volcanoes is less than 1% of that produced by humans
- Annual increase between 2000 and 2009: 2 ppm
- Global rise in temperature since the beginning of the industrial age: 1.1°C; no other period of warming has been as fast as this over the last 66 million years
- The 20 warmest years since records began have been in the last 22 years; the four warmest years on record (in descending order): 2016, 2015, 2017 and 2018
- Expected rise in temperature caused by man-made emissions by the end of the 21st Century = 4 – 5°C; the only comparable period over the last 10,000 years is the postglacial temperature increase
- The speed of global warming is ca. 100 times greater than was the case with naturally occurring climate changes in the past



Methane is 25 times more damaging than CO<sub>2</sub> making it the most potent greenhouse gas.

**The key elements of the revised waste proposal for the European Union include**

- Recycling 65% of municipal waste by 2030
- Recycling 75% of packaging waste by 2030
- Reducing the landfilling of waste to a maximum 10% of municipal waste by 2030
- Banning the landfill of separately collected waste and promoting economic instruments to discourage landfilling.

Besides increasing recycling rates, the EU Commission has taken a critical look at landfilling for the very first time.

**How exactly can a landfill ban help prevent climate change?**

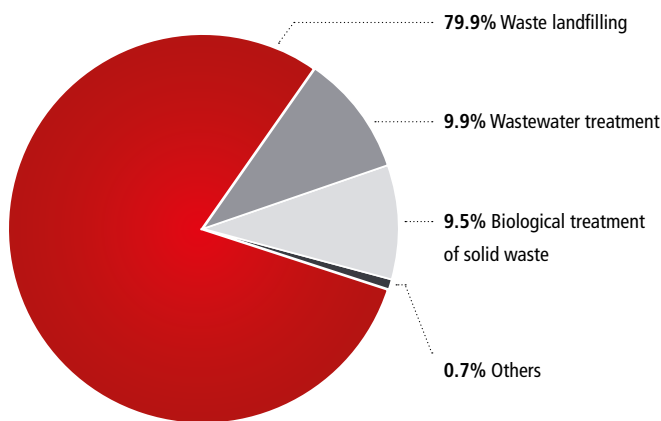
The article, "Methan – die unterschätzte Gefahr" [Methane – an underrated risk], appeared in the German magazine, DER SPIEGEL, on 06 June this year. It quotes two climate research scientists from the National Institute of Water and Atmospheric Research in Wellington, New Zealand, who conclude that there is a distinct lack of public awareness regarding methane emissions. This is particularly surprising as this trace gas is 25 times more harmful for the climate than carbon dioxide and its concentration in the atmosphere is rising rapidly. According to the scientists, methane emissions are caused by any process that involves the decomposition of organic material in an airtight environment such as large-scale animal husbandry, forestry and sewage treatment plants. The study also specifically mentions landfills as being a major source of methane.

Methane also plays a major role in the latest analysis published by the Intergovernmental Panel on Climate Change (IPCC), which looks at the chances of being able to restrict climate change to 1.5°C above pre-industrial levels in the period running up to 2100. The report concludes that the volumes of methane in the atmosphere must sink by 35% between 2010 and 2050 if the climate goal is to be achieved.

**How much CO<sub>2</sub> can be saved by a European TASI?**

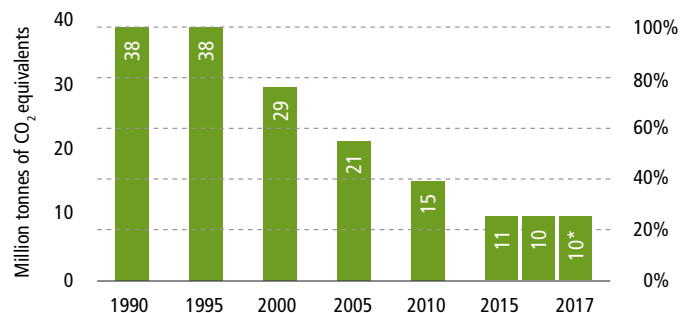
And this is precisely where the circular economy has a role to play as a ban on landfilling waste with organic content would prevent significant volumes of the climate-damaging gas methane being produced in the first place. One of Germany's laws is a perfect example of what can be achieved in this area, namely the 'TASI' [Technical Directive on the Recycling, Treatment and Disposal of Municipal Waste], which came into force in 2005. While the law's original aim was to promote materials recycling rather than to reduce greenhouse gases, this wished-for side-effect has been well documented. The BMU has put a concrete figure on the positive impact of materials recycling and the landfill ban in its status analysis "Abfallwirtschaft in Deutschland 2018" [The waste management economy in Germany 2018]. It reveals that this law has led to the annual emissions of carbon dioxide equivalents generated by the waste management sector falling by around 56 million tonnes since 1990. A carbon dioxide equivalent describes the global warming potential of a greenhouse gas in comparison with that of carbon dioxide. More than 20% of the Kyoto targets promised by Germany were reached as a result of this reduction.

Emission sources in waste management in 2016 (excluding CO<sub>2</sub> from biomass)



Source: UBA (2018a)

Emissions development in waste management and other\*\*



\* Estimate

\*\* Without credits from recycling and energy generation

Source: UBA (2018a); 2017 estimate based on press release 09 / 2018

Furthermore, the German government's latest 'National Inventory Report for the German Greenhouse Gas Inventory' establishes that greenhouse gas emissions across the country dropped by around 350 million tonnes of CO<sub>2</sub> equivalents between 1990 and 2015. It states that the biggest reduction by far – namely 67% – can be put down to the waste management sector, primarily as a result of the TAsI (landfill ban) coming into force in 2005. Today, the German waste management sector causes just 1% of all emissions in Germany – a figure that continues to fall.

Were this to be extrapolated to Europe, then the following could be surmised: assuming that the average volume of waste generated in the European member states is 482kg per capita and the number of inhabitants 513 million, then a systematically enforced landfill ban and recycling obligation across Europe would also reduce emissions of climate-damaging gases by 67% compared to the levels in 1990. Apart from the transition to renewable energy (for the mobility sector as well), this would be the biggest single measure for cutting greenhouse gases. While municipal waste only makes up around 10% of all wastes generated, it contains a disproportionately high amount of organic material and it is this material that emits methane in landfills during the decomposition process. As methane is 25 times more damaging to the climate than CO<sub>2</sub>, a ban on landfilling would have a correspondingly high impact on preventing climate change. Just imagine what could be achieved if there were a global landfill ban and all raw materials were recovered for reuse. The Paris Agreement would be met. Climate change could be halted.

Day by day, REMONDIS shows that this theory really can be put into practice. The company's Lippe Plant alone cuts emissions by just under half a million tonnes of CO<sub>2</sub> equivalents every year – something that has been proven by independent analyses and certified in part by Klimaexpo NRW. And the Lippe Plant is just one of 800 recycling locations operated by REMONDIS worldwide.

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## Municipal waste: EU targets & member state statistics

EU target for the re-use and recycling of household waste by 2025

≥ 55%

EU target for landfilling municipal waste by 2035

≤ 10%

| Data from 2016 | Volume of municipal waste (in kg per person) | Share of recycled or composted municipal waste | Share of landfilled municipal waste |
|----------------|--|--|-------------------------------------|
| EU28           | 482  | 47%  | 25%                                 |
| Denmark        | 777  | 48%  | 1%                                  |
| Malta          | 647  | 8%   | 92%                                 |
| Cyprus         | 640  | 19%  | 81%                                 |
| Germany        | 626  | 66%  | 1%                                  |
| Luxembourg     | 614  | 48%  | 17%                                 |
| Ireland*       | 567  | 42%  | 22%                                 |
| Austria        | 564  | 59%  | 3%                                  |
| Netherlands    | 520  | 53%  | 1%                                  |
| France         | 510  | 42%  | 22%                                 |
| Finland        | 504  | 42%  | 3%                                  |
| Greece         | 497  | 17%  | 82%                                 |
| Italy          | 497  | 51%  | 28%                                 |
| UK*            | 482  | 45%  | 28%                                 |
| Portugal*      | 453  | 30%  | 49%                                 |
| Slovenia**     | 449  | 58%  | 24%                                 |
| Lithuania      | 444  | 50%  | 31%                                 |
| Spain          | 443  | 30%  | 57%                                 |
| Sweden         | 443  | 49%  | 1%                                  |
| Belgium        | 420  | 54%  | 1%                                  |
| Latvia         | 410  | 28%  | 72%                                 |
| Bulgaria       | 404  | 32%  | 64%                                 |
| Croatia        | 403  | 21%  | 78%                                 |
| Hungary        | 379  | 35%  | 51%                                 |
| Estonia        | 376  | 32%  | 12%                                 |
| Slovakia       | 348  | 23%  | 66%                                 |
| Czechia        | 339  | 34%  | 50%                                 |
| Poland         | 307  | 44%  | 37%                                 |
| Romania        | 261  | 15%  | 80%                                 |

\* Data from 2014

\*\* Data from 2015

The overall figure reaches 100% when other waste treatment methods, such as incineration, are included in the calculation

Sources: Eurostat, EPRS, European Commission

# Mobility without borders

A NEW PHASE BEGINS AS TRANSDEV AND RETHMANN GET TO KNOW EACH OTHER AND DEVELOP NEW IDEAS

Following the RETHMANN Group's acquisition of shares in the international mobility company Transdev at the end of last year, both companies spent the beginning of 2019 taking every opportunity to get to know each other. Managers from REMONDIS, Saria, Rhenus and Transdev have been meeting each other in many regions around the world to discuss business, take tours around each other's facilities and look at the possible ways they might be able to collaborate. The new RETHMANN representatives appointed to the TRANSDEV Group's board of directors also began a tour in the spring that took them to cities across five continents, a number of which have been described in more detail below:

Vice President of Transdev and board chairman of REMONDIS, Ludger Rethmann, travelled to Santiago de Chile at the beginning of May. His priority here was to take a closer look

at Transdev's organisation in the Chilean capital, which includes 800 public transport buses and a B2B shuttle service for numerous airlines and other business partners.



Vice President of Transdev and Board Chairman of REMONDIS, Ludger Rethmann, visited Transdev in Santiago de Chile





Dr Werner Kook (REMONDIS), Jean-Louis Hurel (REMONDIS) and Virginie Fernandés (CDC) learned more about Transdev's New York operations and North American activities

Dr Werner Kook (REMONDIS), Jean-Louis Hurel (REMONDIS) and Virginie Fernandés (CDC) spent time in the USA inspecting Transdev's activities in the country, primarily those in and around New York City. Their discussions focused on getting to know each other as well as to swap experiences of the mobility services across the whole of North America. Transdev has over 20,000 employees in the United States and Canada and is held in high regard by both its public sector and commercial clients. More than 200 towns and districts currently use Transdev's public transport services.

REMONDIS board member Egbert Tölle flew to Australia and New Zealand to learn more about the company's road and rail operations in Auckland, Perth, Melbourne and Wellington. Accompanied by Luke Agati, Transdev's managing director responsible for Australia and New Zealand, he made the most of this opportunity to meet the staff and tour their depots, workshops, railway stations and training centres. One of the highlights of this trip was their visit to see the ferries and trams in Sydney. With a combined workforce of just under 6,000 employees, Transdev provides over 145 million passenger trips in the two countries every year – a number that can be expected to grow following the company's various acquisitions. The Transdev and REMONDIS teams made the very most of this time to discuss business and explore ways of working together to create a win-win situation.



REMONDIS Board Member Egbert Tölle visited a number of locations during his trip to Australia and New Zealand, including a training centre with a tram simulator in Auckland



Dr Winno Freiherr von Wangenheim (REMONDIS) and Rhenus Managing Directors, Vivek and Parikshit Arya, took a closer look at Transdev's activities in Mumbai

Transdev manager Louis-Guillaume Francois presented the company's operations in Mumbai to Vivek and Parikshit Arya, Rhenus' managing directors and joint venture partners in India, as well as to Dr Winno Freiherr von Wangenheim (REMONDIS). Transdev helped build Line 1 of Mumbai's metro system (an extremely important service for the approx. 30 million inhabitants living in the city) and operated a BOT model as the joint venture partner. They were also responsible for the maintenance and repair work for many years. At peak times, the line carries up to 1.7 million people a day.

Patrick Dargel, RHENUS' managing director in South Korea, and Dr Winno Freiherr von Wangenheim met Transdev's Korean team led by Christophe Beuillé. The metro is by far the most popular form of transport (39%) in the country's capital city, Seoul. As in Mumbai, Transdev set up the metro's most important line (Line 9) here in 2007 and has been responsible for operating the line and servicing and repairing the trains as part of a joint venture for over ten years now. At times, this 30km line has transported almost 500,000 passengers a day.



Dr Winno Freiherr von Wangenheim visited Korea to meet Transdev's Seoul-based team, which is led by Christophe Beuillé

Honorary chairman of the supervisory board of the RETHMANN Group, Norbert Rethmann, travelled to a number of cities in the Netherlands, Belgium and France to find out more about Transdev's activities in these countries. His itinerary included, for example, the Dutch towns of Apeldoorn, Arnhem and Eindhoven. Eindhoven is well known for running one of the world's cleanest bus services. The city is Europe's centre of excellence for electromobility, although the buses there are run on biogas in cooperation with REMONDIS. Norbert Rethmann then went to Rouen to visit the 'autonomous lab' and see for himself how self-drive vehicles have already been integrated into the town's public transport system.

The final stop of his trip took him to Transdev's "Grand Est" region that includes Alsace, Lorraine, Champagne and the Ardennes. The Transdev Group employs 34,000 people in France alone.

Both companies plan to promote and intensify the contact between the REMONDIS, Rhenus, Saria and Transdev employees. There are already many areas, especially in the public sector, where they can collaborate to offer an even better range of services – to the benefit of both the partners and their customers.

The Transdev Group  
employs

**34,000**



people in France alone



Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, travelled to the Netherlands, Belgium and France to learn more about Transdev's operations in these countries

# REMONDIS continues to grow in the UK

NEW CONSTRUCTION AND DEMOLITION WASTE PLANT BEGINS OPERATIONS NEAR NEWCASTLE



While the whole of Europe is waiting with bated breath to see how the Brexit drama will play out, REMONDIS UK has made it very clear that it intends to further strengthen and expand its operations in the country. To this effect, REMONDIS' British subsidiary recently opened a revamped construction and demolition waste plant at a site in Chester-le-Street, County Durham, approx. 10km south of Newcastle upon Tyne. The site had been acquired by REMONDIS back in 2016 following its acquisition of JBT Waste Services Limited. Now that the 18-month redevelopment stage has been completed, the facility can now recycle mixed construction and demolition waste from the North East of England so that the raw materials can be recovered for reuse.



Councillor Simon Henig, Leader of Durham County Council, and Steve Patterson, Regional Director of REMONDIS UK, opening the new facility



Thanks to the facility's cutting-edge technology, the commercial waste recycling rates in the region will rise considerably

The new sorting technology for the facility was installed by the equipment supplier Kiverco with a number of components also being supplied by Walair, Spaleck and Steinert. The actual building construction work was carried out by a locally based contract NCS. With the plant now able to process 45 tonnes of mixed construction and demolition waste per hour, it has the capacity to handle up to 300,000 tonnes per year. A number of systems have been installed to process the material including mechanical screening, magnet separators and density separators (for separating light and heavy waste streams) as well as near-infrared sorting technology to ensure quality of the output. The incoming materials will come from building sites in the North East of England, primarily those within a 30km radius of the plant. Its customers are mainly construction companies, local councils and householders.

Dave Hughes, regional director for REMONDIS UK, emphasised the quality and significance of the new facility, saying: "This project is a testament to the team that have worked on it. The quality in the execution is obvious to see and this plant will ensure we can deliver the very best levels of service and environmental performance to our customers for years to come." During an interview with letsrecycle.com, Councillor Simon Henig, leader of Durham county council, added: "It is great to see a business investing for the future in our region and in such an essential industry. This investment will support improvement in our local environment and our local economy."

Up to  
**300,000t**  
can be processed  
every year

# Keeping Rotterdam clean

REMONDIS NIEDERLANDE ACQUIRES RIJNMOND MILIEU IN OUD-BEIJERLAND

REMONDIS Niederlande has taken over its industry partner Rijnmond Milieu B.V. in Oud-Beijerland with retro-active effect from 01 January 2019, with a special signing ceremony being held to mark the occasion. Rijnmond Milieu specialises in collecting industrial waste, paper and other material streams from across the whole of the Zuid-Holland Province. Its long-standing focus on this region and its smart investments in highly motivated employees, state-of-the-art technology and sustainable customer relationships have meant that Rijnmond Milieu has always been able to collect waste and raw materials from its customers and remain competitive – and steer its business in the right direction. This direction is recycling.

With Rijnmond Milieu being a waste management specialist for both SMEs and large firms, its customers benefit from its high levels of flexibility, transparency and reliability. The company has a well-established team of employees that have been delivering waste management services for over ten years now. It has found a partner in REMONDIS that not only has extensive knowledge of the sector but also wishes to further grow the business.

Pim Verhage, founder and director of Rijnmond Milieu, explained that it was a very deliberate decision to go with REMONDIS. "REMONDIS is a family-run business and showed great respect for what our company has achieved so far as well as for the people working here. Now that we have an even wider range of services, we will be able to serve our current and future customers even better and underline our desire to further innovate and develop the business."

The new manager at Rijnmond Milieu is Pieter-Balth Linders, who has worked at REMONDIS as regional director responsible for the south west of the Netherlands and MHW since 2018. With over 25 years of industry experience, he – and the team already working at Rijnmond Milieu – will strengthen REMONDIS' presence in the region. Dr Andreas Krawczik, managing director of REMONDIS Niederlande, is also really pleased with the acquisition: "This takeover of Rijnmond Milieu fits in perfectly with our goal, namely to operate a network of effective business locations that can offer the Dutch private and public sectors as wide a range of recycling services as possible. We will further strengthen the branches in the region with qualified employees and sustainable environmental technology to better serve the business' customers. Indeed, Rijnmond Milieu's customer base is already perfect for our activities in the region. What's more, the employees and resources suit each other really well so that we can guarantee there will continue to be work for everyone. We are all winners here."

Thanks to this acquisition, REMONDIS Niederlande has further expanded its already very extensive recycling portfolio



# Those all important three seconds



REMONDIS IS RETROFITTING ALL OF ITS VEHICLES IN THE NORTH OF THE COUNTRY WITH BLIND SPOT ASSIST SYSTEMS



Pedestrians and cyclists are in a lorry's blind spot for not much longer than three seconds. Unfortunately, though, this is more than enough time for an accident to happen especially when a truck is turning a corner. These accidents are all too often fatal and the chances of such an accident happening are increasing all the time as the number of people on our roads continues to grow. More lorries, more cyclists, more pedestrians and, added to the mix just recently, the new e-scooters – our streets are getting busier and busier. REMONDIS GmbH & Co. KG, Region Nord (REMONDIS' north division), has decided to retrofit the whole of its fleet with blind spot assist systems to make sure all road users are kept as safe as possible.

"Everyone's on the same page at our company when it comes to safety," explained Andreas Abraham, manager of Region Nord's workshop in Melsdorf. "If we can minimise the damage caused then the investment was worth every penny!" he continued. He recently ordered 350 LUIS blind spot assist systems for the whole of the region. It is now obligatory for all of REMONDIS' branches in the region to use

this system. Managing director Matthias Hartung has also been holding meetings at the company's public private partnerships (PPP), such as SAS in Schwerin, to try and persuade them to retrofit their vehicles as well. "Such an investment had obviously not been factored in to the PPPs' annual plans but our municipal partners seemed very interested in the idea," Matthias Hartung concluded.

## SAS: Praise from German Transport Minister Andreas Scheuer

Schweriner Abfallentsorgungs- und Straßenreinigungsgesellschaft (SAS) was presented with a certificate by German minister Andreas Scheuer for retrofitting their vehicles with blind spot assist systems before they actually needed to. SAS managing director Andreas Lange travelled to the Federal Ministry of Transport and Digital Infrastructure (BMVI) in July so that he and the German Minister of Transport could sign a safety partnership between the BMVI and SAS. SAS is one of the first PPP companies to take steps to increase safety on the roads. "A whole number of companies – small and large, public and private – are now joining forces to promote this cause. You are all role models and lifesavers," Andreas Scheuer concluded.

Workshop manager Andreas Abraham is keeping a very close eye on the project to make sure it is being rolled out as scheduled. "The first phase covers all vehicles built between 2013 and 2016 – with priority being given to those used in the city centres," he explained. All of the vehicles purchased by the REMONDIS Group since 2017 have been ordered with a blind spot assist system. EU law has made it obligatory for all vehicles to be equipped with such a system from 2021 onwards. Andreas Abraham, however, is confident that his region will have reached these high safety standards well before this.

The drivers are particularly pleased to be able to use this system. Thanks to an additional screen that has been installed in their cabs, they have their blind spot well under control. First the screen turns red if something moves in this area. An alarm then goes off if the driver turns on his indicator to warn him of the danger. The system does not automatically activate the brake – but Andreas Abraham believes this step is not necessary: "If the system interferes too much in the driver's job or makes too much of a noise, then there's a danger that they'll turn it off because it's getting on their nerves."

German Minister of Transport Andreas Scheuer (centre) handing over the official safety partnership certificate to SAS Managing Director, Andreas Lange (right), and Stephan Wilmer, SAS Project Manager (left)



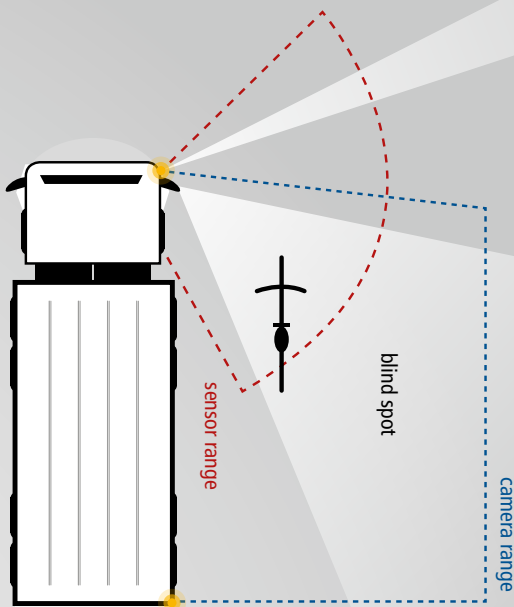
# Keep out of the blind spot!

DORTMUND POLICE FORCE BEGINS A COOPERATION PROJECT WITH REMONDIS AND DEKRA

Members of Dortmund's police force recently teamed up with REMONDIS and DEKRA to visit primary schools in Lünen and Dortmund and teach the children there about a truck's blind spot areas. With the help of one of REMONDIS' skip trucks, the Year 4 pupils were able to see for themselves just how big the areas are that the drivers are unable to see and understand why pedestrians and cyclists should always stay behind rather than next to such vehicles.

"As far as I'm concerned, this is a great way to round off our school cycling courses," explained Rainer Strehl, road safety officer and chief inspector of Dortmund's police force. "We want to prevent the most vulnerable road users from having an accident, which is why we go straight to the youngest people on our roads to make them more aware of road safety – especially of the dangers posed by lorries," he added. One after another, the children climbed into the cab of the skip truck to see the blind spots from a driver's perspective for themselves. They soon discovered that the blind spots were much bigger than they had thought: they were unable to see any of their fellow pupils standing in these areas from the driver's cab. "This is a huge light bulb moment for the kids and it is essential that they learn all about this as so many of them come to school by bike," said Ludger Focke, form teacher of class 4b at the Gottfriedschule primary school in Lünen.

All of the new trucks that have been ordered by REMONDIS since 2017 are equipped with the manufacturer's blind spot assist system to prevent fatal accidents. REMONDIS also arranged for one of their vacuum trucks, which has already been equipped with a blind spot assist system, to take part in these road safety events. "It goes without saying that we want the children to see the latest technology as well. Showing them these vehicles up close helps them to get a grasp of what is effectively an abstract problem," commented Tobias Dornhege, who is in charge of coordinating and purchasing these assist systems at REMONDIS. All of those involved in this initiative have, therefore, made the most of the opportunities available to them to promote road safety and are very pleased with the way it went. "Thanks to this initiative, we have helped to make our roads safer by making even more people aware of lorry drivers' blind spots – especially when the truck is turning a corner," concluded Rainer Strehl.



The LUIS system is proving to be a very good choice with many of the drivers saying it has already been well worth its while. There's no knowing whether such incidents would have actually led to an accident. "What's important though is that both our drivers and all the other road users feel safer in the future," he said.

**"Everyone's on the same page at our company when it comes to safety."**

Andreas Abraham, Manager of Region Nord's workshop in Melsdorf



# RETRON wins Innovation Prize

TRANSPORT SYSTEM FOR DAMAGED LI BATTERIES PRAISED FOR BEING SO SAFE AND EASY TO USE

## RETRON

The trade magazine 'Gefahr/gut' [Hazard/good(s)] recently named REMONDIS Industrie Service the winner of its 2019 Innovation Prize for developing the RETRON transport container system. Jörg Fiebach, deputy head of the Munich Fire Brigade, handed over the award to the company during a special ceremony held on 27<sup>th</sup> May at the 29<sup>th</sup> 'Münchner Gefahrgut-Tage' [Munich Hazardous Goods Transportation Days]. The Innovation Prize, which was launched by the 'Gefahr/gut' magazine back in 2003, is presented to one company each year for developing an innovative solution that makes the transport of hazardous goods safer.

Rudolf Gebhardt, Editor at the 'Gefahr/gut' magazine, Frank Rex, Jury Spokesperson, Robert Sonnenschein, Managing Director at REMONDIS Industrie Service, Christian Kürpick, Project Manager at REMONDIS Industrie Service, Lukas Fast, REMONDIS Industrie Service, and Jörg Fiebach, Deputy Head of Munich Fire Brigade (from left)



### UN-approved steel containers

The RETRON system uses a hazardous waste container made of high-grade steel that has been specifically designed to deal with the danger of battery fires. These steel containers have been issued the necessary approval allowing them to be used for transporting goods presenting high danger (Packing Group I) and are lined with an inner layer of insulation material. If the batteries do cause a fire, then the insulation ensures that the temperature of the outer walls remains below 100°C. Furthermore, the containers are also equipped with textile bags for holding the batteries, packing material containing rock wool and a relief valve for channelling off any fire gases.

### A full service concept from just one company

"The company has developed a full service concept for storing, transporting and processing damaged lithium batteries," jury member Frank Rex, a hazmat specialist on the Lower Saxony police force, said during his speech introducing the prizewinner. He continued, "The system meets all the stipulations set out in the Battery Law regarding the take-back of old batteries. The jury was truly impressed."

The RETRON team is also in the process of working on a container for transporting large traction batteries weighing up to 800 kilogrammes. This project is currently in its prototype phase.

"Our priority as firefighters is to prevent dangerous situations from happening at all," explained Jörg Fiebach during the awards ceremony, adding, "Transporting damaged lithium-ion batteries is particularly hazardous because of the risk of a thermal chain reaction." The best way to prevent such fires starting in the first place is to separate damaged batteries and transport them using a safe and secure system. This year's prizewinner has done some outstanding work in this area.



Watch this video to find out more about the RETRON system's special features



# Deposit return scheme for LI batteries



Major fires are often caused by lithium batteries being thrown into the wrong bin

**FIRES ARE MAKING IT HARDER TO DELIVER RELIABLE RECYCLING SERVICES  
– TOO FEW BATTERIES ARE BEING RETURNED**

German law stipulates that all batteries must be handed back when they are empty. The dustbin, however, would appear to be the route most people are choosing for their old lithium batteries. This can cause huge problems for the companies operating recycling and sorting facilities for residual waste and waste packaging. An ever-increasing number of fires are being caused by damaged lithium batteries. If the recycling plants are to be able to operate as they should, then it is vital that householders are made aware of their obligations. A deposit return scheme could be the answer here.

The number of everyday devices that need a battery is growing all the time. In Germany alone, the use of batteries in devices has risen by 22% since 2009. With old batteries – and especially damaged batteries – posing such a high risk, the Battery Ordinance has already set out in black and white that they may not be thrown into the residual waste bin. Retailers are obliged by law to take back old batteries free of charge – the size of the battery is irrelevant.

Very few people, however, would appear to be meeting their obligations here. At present, 46% of old batteries are actually returned – whereby Germany just manages to meet the EU-wide collection rate of 45%. This figure is not good enough, especially looking at the rapid rise in consumption rates. A whole number of batteries are not being recycled. Even more importantly, in this particular case, throwing batteries into the wrong bin puts both humans and the environment at risk. If further sorting plants are forced to stop operating because of fires, there is a real danger that Germany's recycling sector will suffer a setback that could last for years. If the country no longer has the capacity to sort the volumes of waste generated, then the short-term solution will be to send it to incineration plants or landfills. The former does not have the capacity to handle such volumes, the latter is – quite rightly – forbidden in Germany.

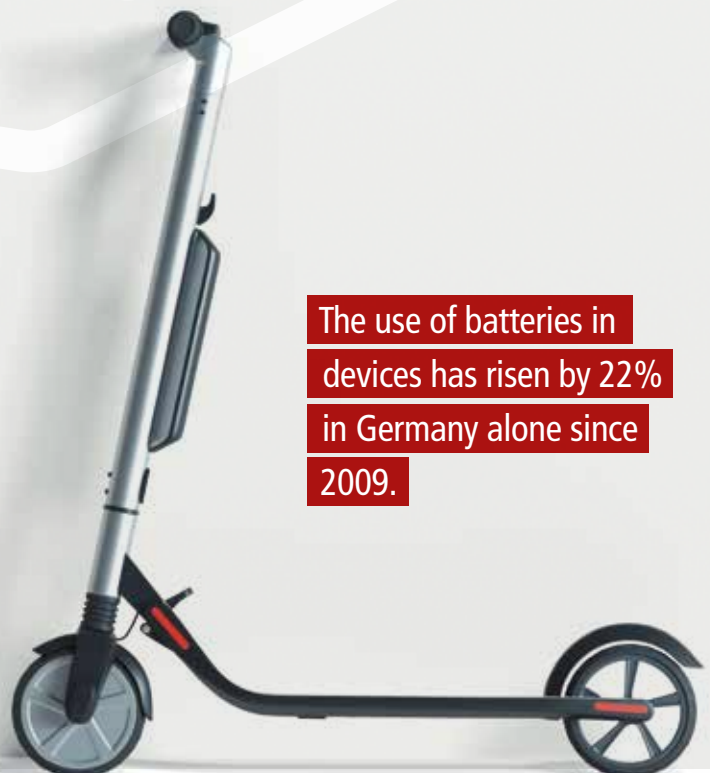
## **The solution: financial incentive via a deposit return scheme**

No other collection scheme in Germany has been as successful as the deposit return scheme for PET bottles. The solution to the conundrum of how to keep batteries apart from the other waste streams is really quite obvious. Returning old lithium batteries to dedicated take-back points simultaneously solves both problems: the safety risks and the low recycling rates. Retailers can simply add a deposit to the sales price, which is then reimbursed when the consumer returns the battery. This can be tied in with the Battery Ordinance that already makes it obligatory to charge a deposit of €7.50 on car batteries.

Just **46%**  
of old batteries  
are returned



The use of batteries in devices has risen by 22% in Germany alone since 2009.



# Many voices, one message: We need more recycling

TSR AND SCHOLZ LOOK TO UNITE BUSINESSES, SCIENTISTS AND TRADE ASSOCIATIONS TO PROMOTE RECYCLED RAW MATERIALS

TSR managing director Bernd Fleschenberg and Scholz managing director Dr Klaus Hauschulte have joined forces with representatives of the copper producers Aurubis to launch the Recycling Initiative. Their primary goal: to create a cross-sector platform to grow and promote a sustainable circular economy in the metal recycling industry.



With the consumption of raw materials increasing at a disproportionate rate due to the growth in the world's population, it is essential that the materials that are already being used are recycled as often as possible – in line with the principle of a circular economy. This not only helps conserve our planet's reserves of raw materials, it also protects our environment as it reduces greenhouse gas emissions. "Recycled raw materials must be the local industries' first choice. By doing so, they help combat climate change and safeguard the future of the industrial sector in Germany – and, of course, the jobs generated by these businesses," Bernd Fleschenberg explained.

"It is not the objective of the Recycling Initiative to take over the important work performed by the trade associations," Bernd Fleschenberg pointed out. On the contrary: the steps that have already been carried out should be united on this platform and the different players brought together.

Representatives from the companies and trade associations met for the first time this June. The focus of this event was primarily on presenting the initiative. The next meeting, which is due to take place in Berlin this autumn, will then be used to try to persuade further companies and associations to join in and promote the use of recycled raw materials. "As can be seen by the logo, this initiative is all about getting things moving," Bernd Fleschenberg continued. This is also reflected in the Recycling Initiative's website, where visitors can learn more about the members and read up on some background information, for example about the current challenges faced by metal recycling businesses. "Looking ahead, we also wish to use this platform to publish the joint positions that the members intend to promote together," he concluded.

**"Recycled raw materials must be the local industries' first choice. By doing so, they help combat climate change and safeguard the future of the industrial sector in Germany – and, of course, the jobs generated by these businesses."**

Bernd Fleschenberg, TSR Managing Director

He hopes that the Recycling Initiative will generate a robust movement that can promote the market for recycled raw materials. All the different players – from the recycling sector and other industries, trade associations and the world of science – are invited to take part in the initiative to join in the 'dialogue to create a future-proof recycling sector'. Experiences and expertise should be exchanged among those participating and pooled together to create joint positions.

TSR managing director, Bernd Fleschenberg (left), and Scholz Recycling managing director, Dr Klaus Hauschulte (right), launching the Recycling Initiative together



Eine branchenübergreifende Plattform für eine nachhaltige Kreislaufwirtschaft initiiert von Scholz Recycling und TSR Recycling.

# Carbon neutral street-cleaning



## STREETSCOOTER ELECTRIC VAN OUT AND ABOUT ON LENNESTADT'S ROADS

REMONDIS Olpe GmbH has been using a Streetscooter electric van to help keep Lennestadt clean since July. This zero-emissions vehicle is primarily being used for emptying the town's litter bins, in particular those in the city centre and pedestrianised areas. This family-run business is once again spearheading development in this region, underlining REMONDIS' mission – as one of the world's largest recycling, services and water companies – to test out and deploy the most effective climate and resource-friendly solutions.

"Having carried out a short and successful trial run, we decided to purchase one of these electric Streetscooters as a replacement for our standard diesel-run Sprinter," explained Felix Maaßen, managing director of REMONDIS Olpe GmbH. "It is not only carbon neutral, it also has the advantage that it can be loaded up from the side," he added. The Olpe branch team were not the only ones to be won over by the performance of this van whose battery lasts for around 150 kilometres. Theo Melcher, director of the district of Olpe and managing director of the waste management association ZAKO, was also impressed by the investment. During the official presentation of the vehicle in July, he commented: "I can only welcome any vehicle that has low emissions and is able to guarantee that the waste collection services can continue to be carried out safely and according to plan."

This collection van is the first to be used in the field of services offered by REMONDIS Olpe making the company a pioneer across the whole of the region.

**"Having carried out a short and successful trial run, we decided to purchase one of these electric Streetscooters."**

Felix Maaßen, Managing Director of REMONDIS Olpe GmbH

Besides focusing on electromobility, REMONDIS continues to keep a close eye on all other potential fuels, running its own pilot projects to find the cleanest and most resource-friendly alternative.



Director of the District of Olpe, Theo Melcher (left), and Managing Director Felix Maaßen are pleased to be able to offer carbon-neutral street-cleaning services

# Biodegradable plastic? Neither degradable nor plastic!

HOW A NEW TREND IS CREATING ANOTHER PROBLEM FOR THE RECYCLING INDUSTRY

People trying to make plastic from renewable raw materials are looking to create a biodegradable product. And it would appear that an ever growing number of companies like using these supposedly organic materials. From biodegradable packaging, to biodegradable bin liners, all the way through to biodegradable coffee capsules – the range of biodegradable products is steadily increasing. These materials, however, are creating a major problem for the recycling sector – the promise of sustainability ends here.

One advantage of these bioplastics is that they have a positive impact on a company's ecological footprint. This material obviously helps conserve fossil fuel reserves as they are made completely or partially out of renewable raw materials. Another advantage is that if they end up where they shouldn't, i.e. in the countryside, then they will have less of an impact on the environment than conventional plastic as they will eventually decompose. The way these eco-friendly materials are currently being handled and recycled, however, needs to be improved:

■ **Biodegradable materials are not always 100% biodegradable.**

Products may be called "biodegradable" if 90% of their content has decomposed after a period of twelve weeks. This means that organic waste that has been recycled in a composting plant or digester still contains bioplastic particles that have not decomposed. This is because these processes at industrial plants are much shorter than twelve weeks. The particles end up on our fields – as is the case with normal plastic – and find their way into our ecosystem and food chain. Composting is, therefore, not the right way to recycle these materials.

- Recycling these materials **with other types of waste plastic is also problematic.** The presence of biodegradable plastic in volumes of conventional waste plastic actually hampers the process used to recycle genuine plastic. The bioplastics lower the quality of the recycled product.
- Introducing a **separate collection scheme** for bioplastics and setting up a dedicated recycling system for this material **make no sense either from an environmental or economic point of view** as they are not biodegradable when they are batched together on their own.
- **Thermal treatment** is the only sensible way to recycle these biodegradable materials. They have a high-energy content, which at best can be used to generate energy.



Supposedly compostable food packaging and bioplastic bags need far too long to decompose – they often end up back on our fields

# Biogas trend continues unabated

LOWER SAXONY, NRW AND THE WHOLE OF NORTH GERMANY ARE BENEFITING FROM THE NEW PLANT IN BOHMTE

An ever-growing number of local councils are insisting that the separately collected organic waste in their regions should not only be sent for composting but processed in a digester as well. This allows the material to be used to produce biogas as well as compost, making an important contribution towards the country's goal of switching from fossil to renewable fuels. A new co-digestion plant was commissioned in Bohmte at the beginning of July that will serve North Rhine-Westphalia (NRW), Lower Saxony and the north of Germany and make the very most of the potential of organic waste.

Kompostierungsgesellschaft Region Osnabrück mbH or K.R.O., a joint venture involving REMONDIS Nord GmbH, opened up a new organic waste processing facility north-east of Osnabrück in July. Located on the border between the states of North Rhine-Westphalia and Lower Saxony, this new plant uses state-of-the-art technology to recycle organic waste from a number of regions including the District of Osnabrück and the cities of Osnabrück and Bremen. All in all, it has the capacity to process 120,000 tonnes of organic waste and green waste every year. Wolfgang Schöning, managing director of K.R.O., emphasised just how important the new facility is and not just for the immediate region. He explained: "Thanks to our cutting-edge, environmentally sound technology, we are in a position to handle large volumes of organic material from the District of Osnabrück and the surrounding regions in Lower Saxony and North Rhine-Westphalia as well as from areas in the north of Germany."

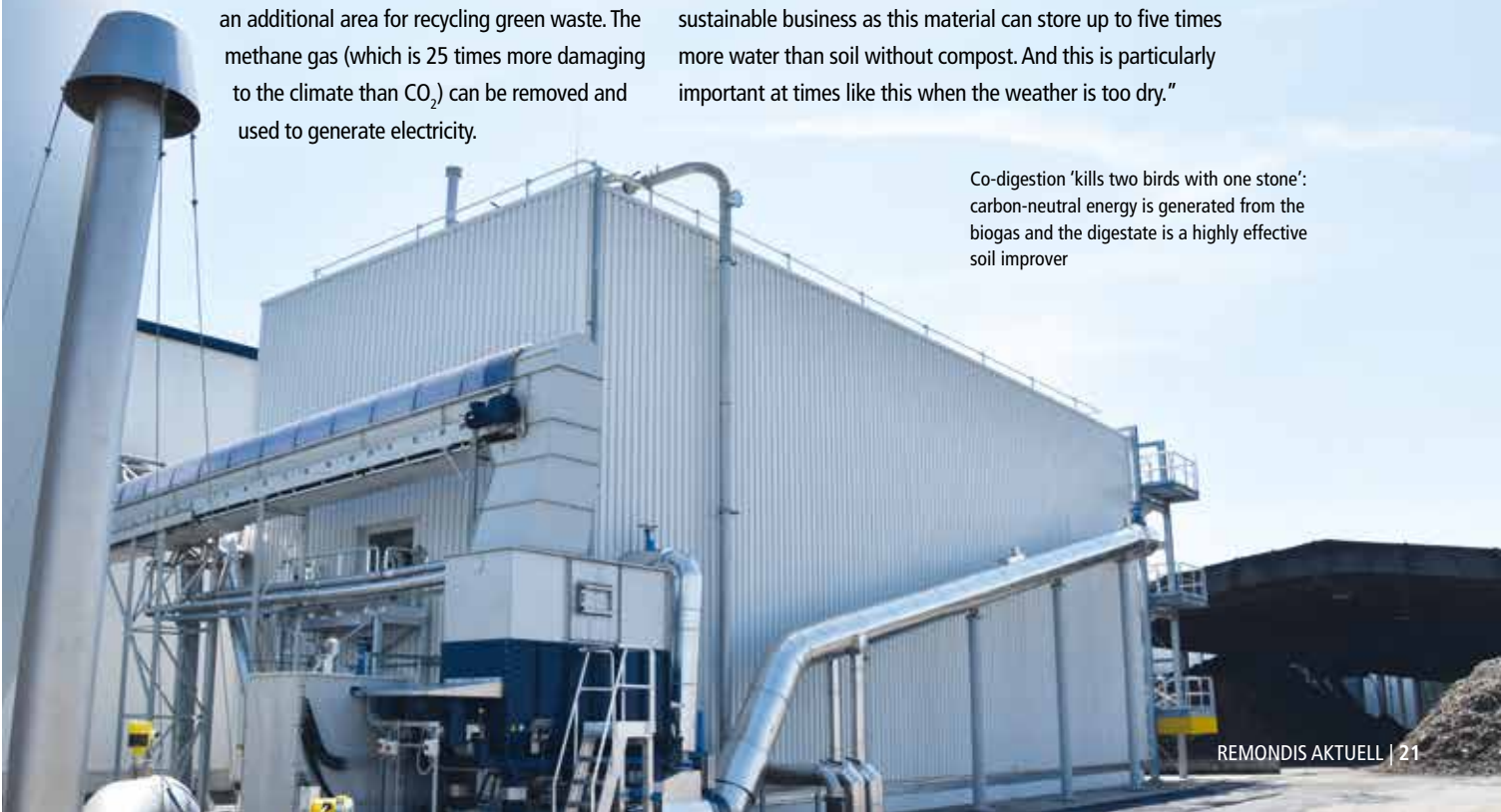
The composting plant, which was renovated and upgraded following a fire in 2014, now has a new digester and an additional area for recycling green waste. The methane gas (which is 25 times more damaging to the climate than CO<sub>2</sub>) can be removed and used to generate electricity.



During his speech at the opening of the facility, Dr Michael Lübbersmann, Head of the District of Osnabrück, praised the future-proof recycling system saying that it will play an important role across the whole of the region and beyond

It is, therefore, increasing the amount of renewable energy produced in the country and helping Germany to reach its climate targets. Managing director, Arne Tiedemann, underlined a further advantage offered by the facility: "Our top quality compost allows farmers and landscaping firms to run a more sustainable business as this material can store up to five times more water than soil without compost. And this is particularly important at times like this when the weather is too dry."

Co-digestion 'kills two birds with one stone': carbon-neutral energy is generated from the biogas and the digestate is a highly effective soil improver



# Fridays for Future? Every Day for Future!

APPRENTICES BEGIN THEIR SUSTAINABLE CAREERS AT REMONDIS, RHENUS LOGISTICS AND SARIA

The majority of young people nowadays want to do their bit to protect the planet and create a more sustainable future for themselves and future generations. The result: more and more school leavers are looking to do an apprenticeship at companies that are, at the very least, running a sustainable business or, ideally, actually protecting the environment and tackling climate change. This is exactly what they have found at the RETHMANN Group companies. Whether it be the recycling pioneers at REMONDIS, the modern logistics specialists at Rhenus or at SARIA, the experts for organic by-products and bioenergy, every single job in this Group is making an effective contribution towards making the world a better place to live in.



The traditional welcome party was held in the reception area of the company's head office building at the Lippe Plant under the patronage of the honorary chairman of the supervisory board, Norbert Rethmann, on 01 August 2019. 88 young people due to start one of 15 different apprenticeships were invited to attend the event on behalf of all the others. They were welcomed by Norbert Rethmann and Frank Dohmen, managing director and head of HR at REMONDIS. During his speech, Norbert Rethmann stressed just how important it is to have young people committed to safeguarding the future of the planet and encouraged the apprentices present to support their local communities beyond their professional lives as well. Frank Dohmen underlined the importance of offering high quality apprenticeships to counteract the current skills shortage and reiterated his belief that all those joining REMONDIS and its sister companies have excellent career prospects. These young professionals were then taken on a tour around the site in Lünen to see for themselves just how big this industrial recycling centre actually is. The fact that this site alone cuts carbon emissions by 488,000 tonnes a year is further proof that they made the right decision joining the RETHMANN Group.

With this in mind, the RETHMANN Group and its associated businesses have once again made the very most of their apprenticeship capacity and are now training a total of 2,011 young people wishing to make a career for themselves in the areas of environmental and climate protection, nutrition or sustainable logistics. Among this number are the 610 new apprentices who joined this year: 383 at REMONDIS, 204 at Rhenus and 23 at SARIA. As has traditionally been the case, the largest number of apprentices joined REMONDIS, a reflection also of the size of the company. This group of recycling experts alone is training 1,264 young people, who are either in the 1st, 2nd or 3rd year of their apprenticeship course. The 'Top 3' apprenticeship jobs at REMONDIS are truck drivers (338 apprentices), industrial management assistants (147 apprentices) and office management assistants (120 apprentices).



Young people are raising awareness of climate change. Concrete solutions as to how to stop global warming have yet to be found



# Russia intensifies its efforts to grow recycling

## FOUNDATION OF AN INITIATIVE FOR MORE RECYCLING AND LESS LANDFILLING

The newly founded Environment and Waste Management Work Group (whose focus is on subjects such as waste segregation, waste collection and recycling) had their inaugural meeting in Moscow on 27 June. Their goal: to help ensure that the reforms that Russia is making to its waste management sector are a success and to promote the use of German technology on the Russian market. The group is headed by Swetlana Bigesse, managing director of REMONDIS' Russian subsidiary. Tatiana Mazidowski, vice-president of the Intertechelectro Group, has been appointed her deputy. They have a lot of work ahead of them.

In February 2019, the Russian government issued a decree that has led to the foundation of the public sector organisation "Rossijsij Ekologitcheskij Operator" (Russian National Environmental Operator). The Government has commissioned this organisation with the task of modernising the Russian waste management sector and ensuring that the reforms set out in the 2015 Federal Waste Management Law are implemented effectively. This work includes, for example, coordinating all the so-called 'regional waste management operators' and building new waste treatment plants. Moreover, the waste management sector should be completely restructured – from the way the materials are stored and collected all the way through to how they are treated – so that the country's biodiversity can be preserved and healthy natural spaces restored. These regional waste management operators are responsible for all waste management services from transport, to processing, to recycling – or if this is not possible – managing municipal household waste. Those living in the regions are obliged to use their local operator's services – similar to the system that has been used in Germany for many years now. 160 regional operators have already been selected in 65 of Russia's 85 regions. The cities of Moscow and St Petersburg are excluded until 2022 and a number of other regions have been given a year's extension.

"Rossijsij Ekologitcheskij Operator" has been given a budget of one billion euros (taken from the public purse) and will act as the public sector partner in public private



Mayor of Düsseldorf Thomas Geisel (left) and Swetlana Bigesse (2nd right) with members of the Russian delegation in Düsseldorf

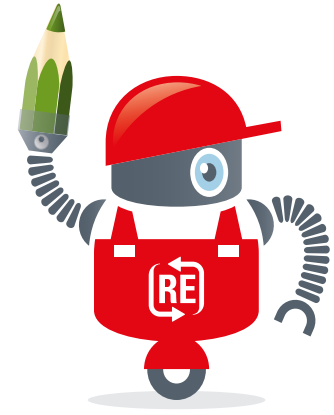


Swetlana Bigesse at the inaugural meeting of the "Rossijsij Ekologitcheskij Operator"

partnership projects. The Government is hoping that private investors will inject a further three billion euros into the project. REMONDIS welcomed the managing director of the organisation and his three deputies during their three-day visit to Germany at the end of May showing them how a modern recycling sector can be run. The Russian delegation toured a number of sites, taking a tour around REMONDIS' Lippe Plant and meeting representatives of Duales System Deutschland GmbH and the Mayor of Düsseldorf, Thomas Geisel. These discussions with the director of the Russian National Environmental Operator were then continued when representatives of REMONDIS travelled to Moscow in June. Many Russian delegations and NGOs, such as Greenpeace Russia, have also been travelling to the capital of the autonomous Republic of Mordovia, Saransk. There, with REMONDIS' help and know-how, the city has already implemented what the Government in Moscow wishes to see across the whole of Russia: a well-functioning circular economy with segregated waste collections.



# Art straight out of a bin



WBL HOLDS A SCHOOL COMPETITION TO PROMOTE ENVIRONMENTAL PROTECTION

Wirtschaftsbetriebe Lünen or WBL held its first ever art competition for Year 3 pupils attending primary schools in Lünen. The motto of the competition was “Our dream playground” – a motto that enabled the children to be as creative as they wished. There was, however, one condition: their artwork had to be made out of the contents of their paper and recycling bins.



The RECYCLING PROFESSIONALS act as a magnet for all children. Info about the educational theatre shows, teaching materials and events can be found at [wertstoffprofis.de](http://wertstoffprofis.de)

There was more to this competition than simply having fun: “Besides promoting an interest in art, we also wanted to teach the kids about the environment. It is so important nowadays to make young children more aware about subjects such as conserving our planet’s natural resources and recycling,” explained Stefan Jonic, managing director of WBL. All the classes had been provided with the ‘RECYCLING PROFESSIONALS’ teaching material beforehand to prepare the children for their task. This collection of worksheets, teacher’s book and parents’ letter was put together by REMONDIS and experienced teaching specialists and is a fun way for pupils to learn about how to separate recyclables correctly.

The works of art were judged by a jury of experts made up of Peter Freudenthal, Förderverein für Kunst und Kultur Lünen e.V. [arts association], Horst Müller-Baß, Lünen town councillor, Marie Hirschberg, an art expert from Lünen, Friedhelm Susok, the RECYCLING PROFESSIONALS presenter, and Carina Hölscher, PR & marketing officer at REMONDIS. All of the participants were then invited to attend a special ceremony held in the Hansesaal [Hansa Hall] in Lünen on 01 July. Jürgen Kleine-Frauns, mayor of Lünen and patron of the competition, praised the contest before presenting a €1,000 cheque and a voucher for a RECYCLING PROFESSIONALS theatre show to the lucky winners: class 3a of the Kardinal-von-Galen-Schule and their teacher Nicola Rother for their “haunted playground”.

By the end of the competition, therefore, the children had not only made some impressive sculptures – as great examples of recycling – they had also learned a lot about the environment and the climate. “The kids really got into the competition and loved coming up with ideas about what they could do with the waste,” commented Helene Berkenheger, class teacher (3c) at the ‘am Lüserbach’ primary school.

No one went home empty handed though. All of the children were given a present to remind them of the competition and all they had learned. “I’m sure that they will separate their recyclables better now – both at home and in their schools – as they have learned just how important it is to recycle and tackle the problem of climate change,” Stefan Jonic said summing up the event.



Class 3b hard at work (‘Schule am Lüserbach’ primary school)



The pupils from class 3c (Schule am Lüserbach) assessing their results so far

The children (here class 3a from the Kardinal-von-Galen-Schule) used the contents of their recycling and paper bins to build their dream playground







The RECYCLING PROFESSIONALS entertained the approx. 300 children taking part in the competition with their educational theatre show



The winning work of art: the haunted playground created by class 3a (Kardinal-von-Galen-Schule)



Friedhelm Susok, RECYCLING PROFESSIONALS, Jürgen Kleine-Frauns, Mayor of Lünen and patron of the competition, Carina Hölscher, RECYCLING PROFESSIONALS Project Manager, and Stefan Jonic, Managing Director of WBL, at the awards ceremony in Lünen's Hansesaal



The jury (from left to right): Peter Freudenthal, Förderverein Kunst & Kultur [arts association], Friedhelm Susok, RECYCLING PROFESSIONALS, Carina Hölscher, REMONDIS, Marie Hirschberg, Horst Müller-Baß, Lünen Town Councillor, appraising the works of art

## THE RECYCLING PROFESSIONALS – a REMONDIS educational project

You're never too young to learn. Which is why REMONDIS has developed its RECYCLING PROFESSIONALS educational project specifically for kindergartens and schools to make children and teenagers more aware about the need to conserve our planet's natural resources. The goal behind this project is to make it clear that waste is not really waste but a mixture of valuable raw materials which can be recycled. And that everyone can help to recover these valuable materials so they can be reused, simply by separating their waste correctly in their homes. This educational project includes a range of age-related teaching materials for schools and kindergartens, a free educational theatre show as well as the 'RECYCLING PROFESSIONALS on Tour' event.

# Closing a gap at the Lippe Plant

NEW FACILITY FOR SORTING MIXED PLASTICS CLOSES EVEN MORE MATERIAL CYCLES

## RE PLANO®

RE Plano GmbH has been running its high quality plastic recycling operations at REMONDIS' Lippe Plant in Lünen for over two decades now. The company's recycling facility, which is located next to the dismantling centre for waste electrical and electronic equipment (WEEE), processes waste plastic into high-grade plastic pellets so that this raw material can be returned to production cycles. Until just recently, the neighbouring WEEE recycling plant had generated volumes of certain types of plastic – for example from the insulation material found in fridges and packaging – that was unable to be processed at the Lippe Plant. Thanks to the opening of the new sorting facility for mixed plastics, this material cycle has now also been successfully closed.

The new plant, located at the REMONDIS Group's largest recycling centre, was officially opened by REMONDIS Electrorecycling GmbH and RE Plano GmbH in March. Mixed plastics removed from collection group 2 e-waste can now be sorted according to type so they can be sent on for further processing. These materials undergo a multi-stage procedure so they can be separated into three groups of plastic: polystyrene (PS), acrylonitrile butadiene styrene (ABS) and polyolefin (PO).

"This facility offers an ideal solution for these materials. It allows them to be further processed in-house, it further extends the Lippe Plant's excellent infrastructure and it makes each processing step more cost effective," explained Gerhard Jokic, managing director of REMONDIS Electrorecycling GmbH. Once they have been sorted, the different types of plastic can be further processed and recycled so that they, too, can be returned to the plastics processing industry as high quality pellets. "Further increasing our plastics sorting expertise gives us a stronger position on the market and opens up additional sales channels for our plastic compounds," commented Ralf Mandelatz, managing director of

"Further increasing our plastics sorting expertise gives us a stronger position on the market and opens up additional sales channels for our plastic compounds."

Ralf Mandelatz,  
Managing Director of REMONDIS Recycling





(from left to right) Ralf Mandelatz, Managing Director REMONDIS Recycling, Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, Ton Emans, Plastics Recyclers Europe, Gerhard Jokic, Managing Director REMONDIS Electrorecycling, and Martin Hemmer, Managing Director RE Plano, at the symbolic opening of the plant



A multi-stage process is used to separate the plastics from the shredded fridges according to type

REMONDIS Recycling. The construction of this new facility reflects the major developments and ongoing efforts being made by REMONDIS to make all types of plastic completely recyclable.

RE Plano, the Group's long-standing expert for refining, processing and recycling plastics, made the most of their existing capacities and in-depth know-how to plan and build this new plant. The sorting process is based on a two-stage density separator system and near infrared technology and is able to handle around 10,000 tonnes of material a year. A roofed area approx. 4,800m<sup>2</sup> in size was also built next to the sorting facility for storing incoming and outgoing materials for both this and RE Plano's other facilities. As a result, the company has succeeded in setting up an efficient materials management system and ensured the plastics are stored safely. Both the store logistics and the new facility have been fully integrated into RE Plano's existing system and are being run by the company's own staff.

REMONDIS has, therefore, closed yet another material cycle as it strives to achieve its goal of seeing all waste plastics recycled. It will not be able to reach this target on its own however. Further measures are needed from both politicians and producers to increase material recycling rates and ensure the very most is made of the materials available. Such measures could involve extending the Ecodesign Directive to include raw material efficiency as well as developing incentives to encourage manufacturers to use recycled raw materials.

Both REMONDIS and the BDE [Federal Association of the German Waste Management Industry] are calling on local authorities to adopt the Green Public Procurement principles. Having invested in a system that improves plastic sorting and processing, REMONDIS has taken an important step towards growing plastic recycling rates.

Plastics such as polystyrene can also be recycled with the right sorting technology



Plastic is a really useful material. Recycling it is an effective way to protect our seas and oceans and tackle climate change. Every tonne of recycled plastic saves a good

**1.2 tonnes CO<sub>2</sub>** 



# Switzerland's first ever asbestos treatment facility

REMEX ENABLES PRODUCTS CONTAINING FRIABLE ASBESTOS TO BE TREATED

**REMEX**<sup>®</sup>

WORKING FOR THE FUTURE

REMEX Recycling AG has been operating this facility – the first of its kind to be approved in Switzerland – in the city of Basel since the beginning of the year, providing a safe way to treat dangerous asbestos containing products. By getting this solution up and running, the company is spearheading the use of cutting-edge technology in its industry.

In the past, any friable asbestos removed during building renovation projects was placed into large double-lined bags and transported to landfills that were permitted to accept and store this material. However, this system had an element of risk as the bags could be damaged while being landfilled and result in the asbestos being released into the environment. With this in mind, most of the landfills in Switzerland no longer accept asbestos in big bags.

Asbestos was commonly used as a building material, for example for fireproofing, up until the 1980s



**The solution? Binding asbestos in a concrete matrix**  
REMEX has been using its own treatment process since the beginning of the year to eliminate the danger of such asbestos pollution and ensure the material can be disposed of safely.

The first step here involves removing any contaminants such as wood, paper, plastics and metals as well as any other materials used as part of the building renovation work. The left-over asbestos material is then transported to a mixer via an enclosed conveyor belt. A concrete slurry mix is created by adding dry mortar and water, which is subsequently poured into formworks where it can harden. The finished concrete blocks (ca. 0.6m<sup>3</sup>) are loaded into skips and transported to the landfill.



The new facility binds asbestos in concrete blocks that can be placed cleanly into – and retrieved from – a landfill's storage area



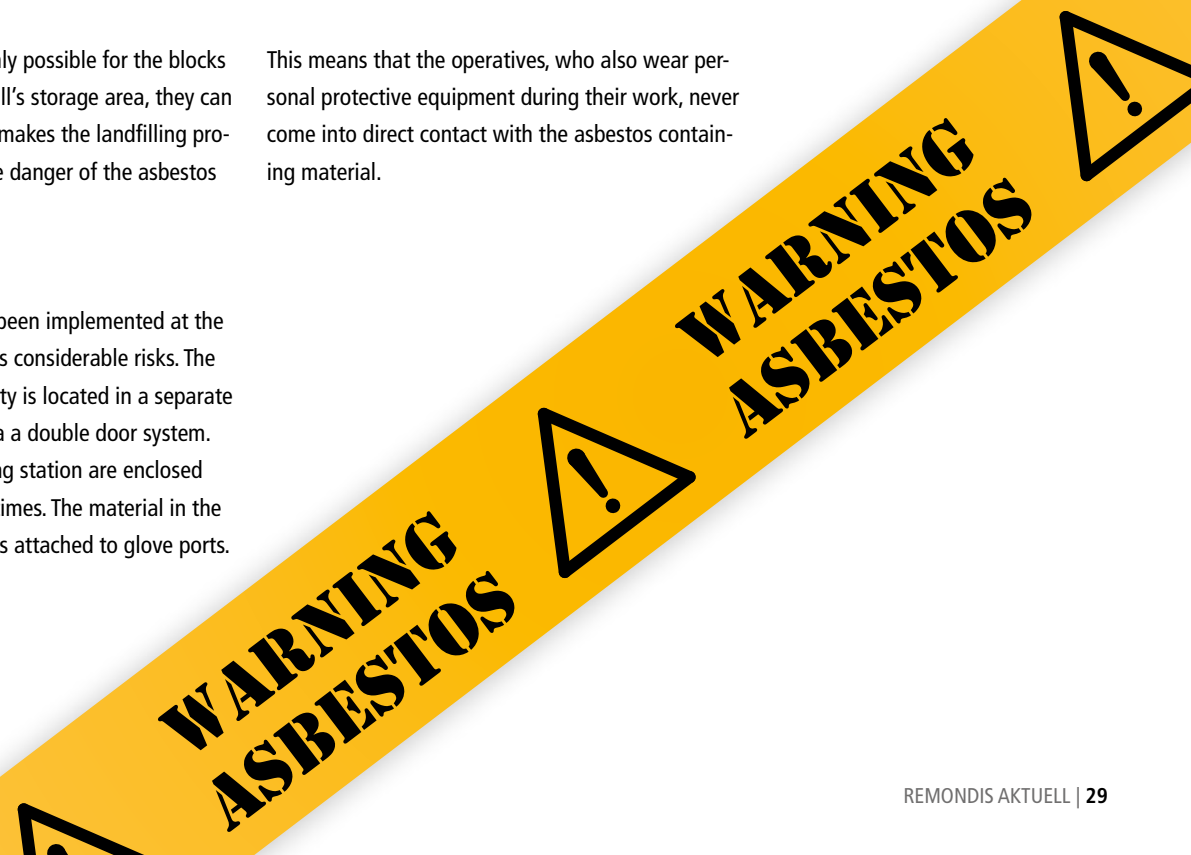
Operatives must wear personal protective equipment and may only handle the material using gloves attached to glove ports

So what's special here? It is not only possible for the blocks to be placed cleanly into the landfill's storage area, they can also be retrieved if necessary. This makes the landfilling process much safer and eliminates the danger of the asbestos escaping into the environment.

This means that the operatives, who also wear personal protective equipment during their work, never come into direct contact with the asbestos containing material.

#### Extensive safety measures

Stringent safety precautions have been implemented at the plant as handling asbestos involves considerable risks. The whole of the concrete mixing facility is located in a separate room that can only be accessed via a double door system. The mixer, conveyor belt and sorting station are enclosed and have negative pressure at all times. The material in the sorting unit is handled using gloves attached to glove ports.



# Europe's biggest inspection of the year

## BUCHEN AND XERVON AT THE TAR 2018 IN GELSENKIRCHEN

The inspection of Ruhr Oel BP's refinery in the German city of Gelsenkirchen took place as planned during the second half of last year – the largest and most extensive TÜV inspection to be held in the European refinery sector in 2018. BUCHEN and XERVON delivered a comprehensive package of services covering six different specialist areas of business and had over 1,000 operatives working on site at the plant during the shutdown.

Ruhr Oel BP operates a complex refinery business at its Horst and Scholven plants in Gelsenkirchen. Around 12 million tonnes of crude oil are processed here every year to manufacture more than 50 different types of product. The work that needs to be carried out when this refinery has to 'make a pit stop' is in a class of its own. Such projects involve huge numbers of facilities and plant components having to be cleaned, checked and – where necessary – repaired or replaced. Two important factors for making such projects a success are good collaboration work between all those taking part and efficiency as this means less time is needed.

Besides having its own team at the site, Ruhr Oel BP also used a large number of external specialists. More than 1,000 of these experts were provided by BUCHEN and XERVON. All in all, these two REMONDIS subsidiaries performed thousands of individual tasks involving industrial cleaning work, catalyst services, scaffolding, maintenance work, surface technology and insulation.

### A wide range of specialist services

BUCHEN travelled to Gelsenkirchen to handle the complex industrial cleaning tasks as well as any vacuum services that were needed. A whole number of heat exchangers, columns, vessels and many other structures were either cleaned in situ or taken to a special washing area set up specifically for the TAR 2018. The reactors were emptied, cleaned, serviced and refilled by the specialists from the catalyst service division, who removed and replaced around 1,500 tonnes of catalyst material during this period.

XERVON erected around 10,000 tonnes of scaffolding material to ensure that everyone at the site was able to perform their work. At the same time, the company delivered a number of scaffolding services involving complex structures that went far beyond the standard industrial scaffolding portfolio. The company's maintenance work included carrying out mechanical tasks in the heart of the refinery's two plants as well as doing piping work. Just one of the jobs here was to install new pipes on a piece of equipment weighing 100 tonnes. The surface technology experts were responsible for protecting the machines and components, such as the pipes and vessels, from corrosion. This was performed either on site or at the company's own branches in Duisburg and Bottrop. What's more, the group's insulation specialists were also called in to carry out a variety of jobs including completely reinsulating a reactor.



10,000t

of scaffolding material were erected by XERVON so everyone was able to do their work



A large number of specialists and an extensive range of technologies are needed to carry out a turnaround



BUCHEN and XERVON had a team of over 1,000 operatives working on site at the plant during the TAR 2018

### **Meticulous preparation work & stringent safety standards**

BUCHEN and XERVON had begun planning this project in detail months in advance. Besides organising the resources, materials and schedule, the team also had to focus on dovetailing the different processes required for the TAR 2018. A number of technical innovations were used during this project. A special automated high pressure jet cleaning system developed by the company, for example, was deployed to clean 23,000 distillation caps, saving time and making the work safer for the operatives.

Quality, time and costs are all key when it comes to performing inspections. Safety, however, is at the very top of the list. BUCHEN and XERVON's 'safety first' strategies have been designed to ensure the highest standards are in place – even when facing the extreme conditions of a turnaround (tight schedules, narrow spaces, different specialists working side by side etc). BUCHEN, for example, had seven life support vehicles at Gelsenkirchen to guarantee there were maximum health and safety levels on site while the catalyst services were being carried out.

### **Teamwork requires perfectly dovetailed processes**

Coordination plays a vital role in projects involving a large number of different participants. This is particularly true for turnarounds as the time needed can be reduced if the individual tasks are dovetailed to fit in perfectly with one another. When BUCHEN and XERVON deliver a range of different specialist services – as was the case in Gelsenkirchen – then fewer companies need to be involved. This means decisions can be made more quickly and it promotes teamwork, creating additional advantages for everyone involved. Once again, the two companies mastered the challenges of this project, Europe's largest refinery TÜV inspection, conscientiously and reliably as always.



Watch the TAR 2018 on YouTube

175 Years  
BUCHEN

# A special year for BUCHEN

A PERFECT BLEND OF TRADITION AND PROGRESS

**BUCHEN®**  
WORKING FOR THE FUTURE

When BUCHEN UmweltService says that its performance and know-how are growing year on year, then it is certainly not exaggerating. This REMONDIS subsidiary, which specialises in high quality industrial services, is celebrating its 175<sup>th</sup> anniversary this year. Founded at the start of the Industrial Revolution, it is now one of the leading industrial service providers in Europe.

BUCHEN's success is based on a number of factors that have stood it in good stead throughout its history: technological experience, systematic specialisation and a high innovative spirit. The processes it uses are constantly being optimised and its machinery, technology and systems further developed. Focus has also been put on automation – something that has led to both a higher standard of work and higher work safety levels. Just one example here is in the area of high-pressure water jetting, where BUCHEN has developed hands-free solutions for all its applications. By designing and building its own closed-loop automated systems, the company is continuously driving progress – for example with its BTS Jet Washer system for cleaning tanks and its Closed Loop system for cleaning heat exchangers.

BUCHEN has a wide and varied portfolio of services. One of its special strengths is its ability to deliver a range of specialist services for cleaning and maintaining industrial facilities and plant parts – from nuclear services and heat exchanger services, to sludge dewatering and safety services, all the way through to carrying out turnarounds and cleaning large-scale tanks.

The spotlight was also on this diverse portfolio during a customer open day that had been organised as part of the company's anniversary celebrations. Held at the firm's head office in Cologne-Niehl, the visitors were able to take a closer look at its latest developments, technologies and safety equipment. What's more, they also had the opportunity to learn more about the complementary services provided by some of its sister companies, such as XERVON's scaffolding solutions and the predictive maintenance solutions offered by XERVON Instandhaltung. The approx. 100 guests, primarily from the chemicals and refinery industries, were obviously impressed by what they saw – by the breadth of the services as well as by the ongoing focus on work safety, in particular by developing automated processes.

The customer open day was also attended by BUCHEN-ICS. This BUCHEN subsidiary, which specialises in reactor services, catalyst handling, chemical cleaning and tank cleaning work, was founded 40 years ago and so is celebrating its own special anniversary this year as well.



**BUCHEN has a wide and varied portfolio of services.**



# A clean tank, high recycling rates

BUCHEN PRACTISES SUSTAINABLE MAINTENANCE WORK  
WITH NEW TECHNOLOGY



Companies looking for green solutions expect industrial cleaning projects to involve recycling as well. A tank cleaning project that is to be carried out at REMONDIS' branch in the Upper Bavarian town of Oberhausen is a perfect example of how residual materials can be recovered for reuse even when the work is extremely complex and requires stringent safety measures. A tank used for storing a solvent at the site is to be cleaned using innovative technology so that the majority of the residue removed can be recycled.

**BUCHEN®**  
WORKING FOR THE FUTURE

REMONDIS operates a facility at its site in Oberhausen that processes solvents and solvent mixtures so they can be used as a refuse derived fuel (RDF). Having acquired the site last year, an above-ground, fixed-roof tank is now due to be cleaned. Most of the tank's contents have already been removed with just around 3 metres of liquid remaining. The team's tasks are now to remove the approx. 1,500m<sup>3</sup> of solvent residue safely, to ensure no emissions are released into the atmosphere and to recover as much of the material as possible. To be able to achieve this, BUCHEN has drawn up a plan that requires calling in specialists from a variety of its industrial cleaning divisions.

As nitrogen must be added to the tank for safety reasons, BUCHEN-ICS will be deploying state-of-the-art technology, such as its Manway Cannon system, to carry out the preliminary cleaning work. This automated tank cleaning system uses a cleaning cannon equipped with headlights and a camera. The actual cleaning work is performed remotely with the cannon's video feed enabling the operatives to follow their progress every step of the way. The tank's liquid content is used for the cleaning work. Once this step has been completed the liquid is then decanted together with the dislodged material. Using the tank's content rather than water means much higher recycling rates can be achieved.



Smart concepts and automated processes enable high recycling rates to be achieved during tank cleaning projects

The first step of this project will involve BUCHEN-ICS homogenising the remaining solvent sludge and pumping it into gas-tight containers. Once this has been completed, FILTRATEC will then take over the residual material and separate it on site into its liquid and solid parts. These experts will be using a mobile ATEX decanter to dewater the sludge, as this equipment enables high volumes of materials to be recovered, guarantees that the whole procedure is safe and ensures no emissions can escape into the air.

Once this closed-loop cleaning stage has been completed, the gas will then be removed and BUCHEN UmweltService's operatives permitted to enter the tank wearing full breathing apparatus. Their job will be to carry out the final cleaning work using, for example, high pressure water jet technology. The used water will then be handed over to REMONDIS so it can process it at its wastewater treatment facility, which is also located at the site.

# Brandenburg's biggest waterworks now even bigger

44,000 CUBIC METRES OF DRINKING WATER PRODUCED AT THE PLANT IN TETTAU EVERY DAY

The Tettau waterworks, situated in the south of the German state of Brandenburg, has been playing a vital role in supplying the Lausitz region with drinking water since 1955. The raw water is extracted from the 'Lausitzer Urstromtal' valley and processed into drinking water for the waterworks' 80,000+ customers, who are both local residents as well as industrial and commercial businesses. REMONDIS Aqua's subsidiary Wasserverband Lausitz Betriebsführungs GmbH (WAL-Betrieb), which has been responsible for the plant since 2006, has now extended the capacity of the waterworks in response to changes to the region's water network – caused in particular by LEAG, Lausitz Energie Bergbau AG, shutting down its water supply services.

The new facility was officially opened during a special ceremony that was attended by a large number of politicians and business leaders including Norbert Rethmann, honorary chairman of the supervisory board of the RETHMANN Group. "Right from the start, we have ensured that the Tettau waterworks provides a reliable supply of drinking water. By extending the facility, we are now able to produce even more top quality water every year," commented both WAL-Betrieb managing directors, Stefan Voß and Thomas Förl.

An in-house work group made up of WAL and WAL-Betrieb employees had begun planning the extension work back in 2014. As a result, the cost of building the new facility was much lower than anticipated. 50% less surface area, fewer internal pipes and half the energy consumption are now needed to ensure large parts of the Lausitz region will have all the drinking water they need over the coming decades.

Brandenburg's largest waterworks certainly has an interesting history:

## 1953

### CONSTRUCTION OF THE TETTAU WATERWORKS

A new waterworks has to be built as the two existing plants in the region are unable to supply the volumes of water needed. The decision is made to locate the new facility in Tettau because of the abundance of groundwater in Lausitzer Urstromtal, which has hardly been impacted at all by the region's mining operations.

## 1955

### COMMISSIONING OF THE TETTAU WATERWORKS

The new facility begins operations producing a record-breaking 48,000m<sup>3</sup> of drinking water a day. Other important components of this regional drinking water supply network are the water tower in Lauchhammer-Ost and the long-distance pipeline to Senftenberg.

## 1957–1960

### LONG-DISTANCE PIPELINE: TETTAU WATERWORKS – HOYERSWERDA

The creation of the "Schwarze Pumpe" industrial estate in Hoyerswerda leads to a massive increase in water consumption. The Tettau waterworks' long-distance pipeline enables it to supply the volumes needed.

Robert Ristow, Managing Director of EURAWASSER GmbH & Co. KG, Dr Roland Socher, Chairman of the Lausitz Water Association, Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, and Andreas Bankamp, Managing Director of REMONDIS Aqua GmbH, at the official opening ceremony in Tettau



"This official opening makes it very clear just how big the Tettau waterworks is. I would use the following analogy to demonstrate its size: the amount of water that it produces every day could fill one of our regional swimming pools at least 50 times over."

Kersten Sickert, Chairman of the Association Meeting and Director of the Ortrand Department



"This official opening represents yet another milestone of the longstanding and successful partnership between the Lausitz Water Association and REMONDIS Aqua. Making the most of the experience gathered from the existing facilities, we have succeeded in extending the waterworks by 20,000m<sup>3</sup> in a most efficient and cost-effective way, almost doubling the plant's capacity."

Dr Roland Socher, Chairman of the Lausitz Water Association and head of the in-house waterworks extension planning group

## 1962

### EXTENSION WORK

By extending the facility, the plant can now produce 72,000m<sup>3</sup> of water a day. This makes it by far the biggest waterworks in the Cottbus region.

## 1995

### SUPPLY CONTRACT TO SAXONY

Rising costs lead to a slump in the demand for drinking water. The contract to supply a large-scale dairy in Leppersdorf (Müller Milch) with water comes just at the right time. Every day, between ten and fifteen thousand cubic metres of drinking water are supplied to the business in Saxony via a 40km pipeline.

## 2007

### RECONSTRUCTION WORK

Having been in operation for almost 50 years, the plant is in need of some urgent renovation work. Taking the demand at the time into account, a smaller facility is built able to produce 23,000m<sup>3</sup> per day. Since then, the plant has been running at over 90% capacity – very unusual for a waterworks – making it a very cost-effective business.

# No water? No economy!

## REMONDIS AQUA'S SUSTAINABLE SOLUTION HELPS INDIAN MANUFACTURERS KEEP THEIR COMPETITIVE EDGE

Water is not a resource that can be taken for granted in India. On the contrary, the volumes of water available to manufacturers are extremely limited. Which is why many are pinning their hopes on a new system that is currently being introduced: the so-called zero liquid discharge concept or ZLD that creates a wastewater-free production cycle. With REMONDIS Aqua offering this system to its customers, it is already proving to be a success in India.

**REMONDIS®**

WORKING FOR THE FUTURE

Many businesses in India have major problems accessing water in the dry months before the monsoon season – a problem that often leads to outages. A number of ideas have been suggested to improve water management in production plants and one in particular is spearheading the way: the ZLD system. This involves an independent, closed-loop water cycle that manages the use and treatment of the water so that it can be recycled on site at the plant. The ZLD solution enables the production water to be processed and recycled after it has been used so that it can once again be returned and reused as treated process water. Many industrial firms in India have helped ensure their business remains competitive over the long term by having the ZLD system installed at their plants.

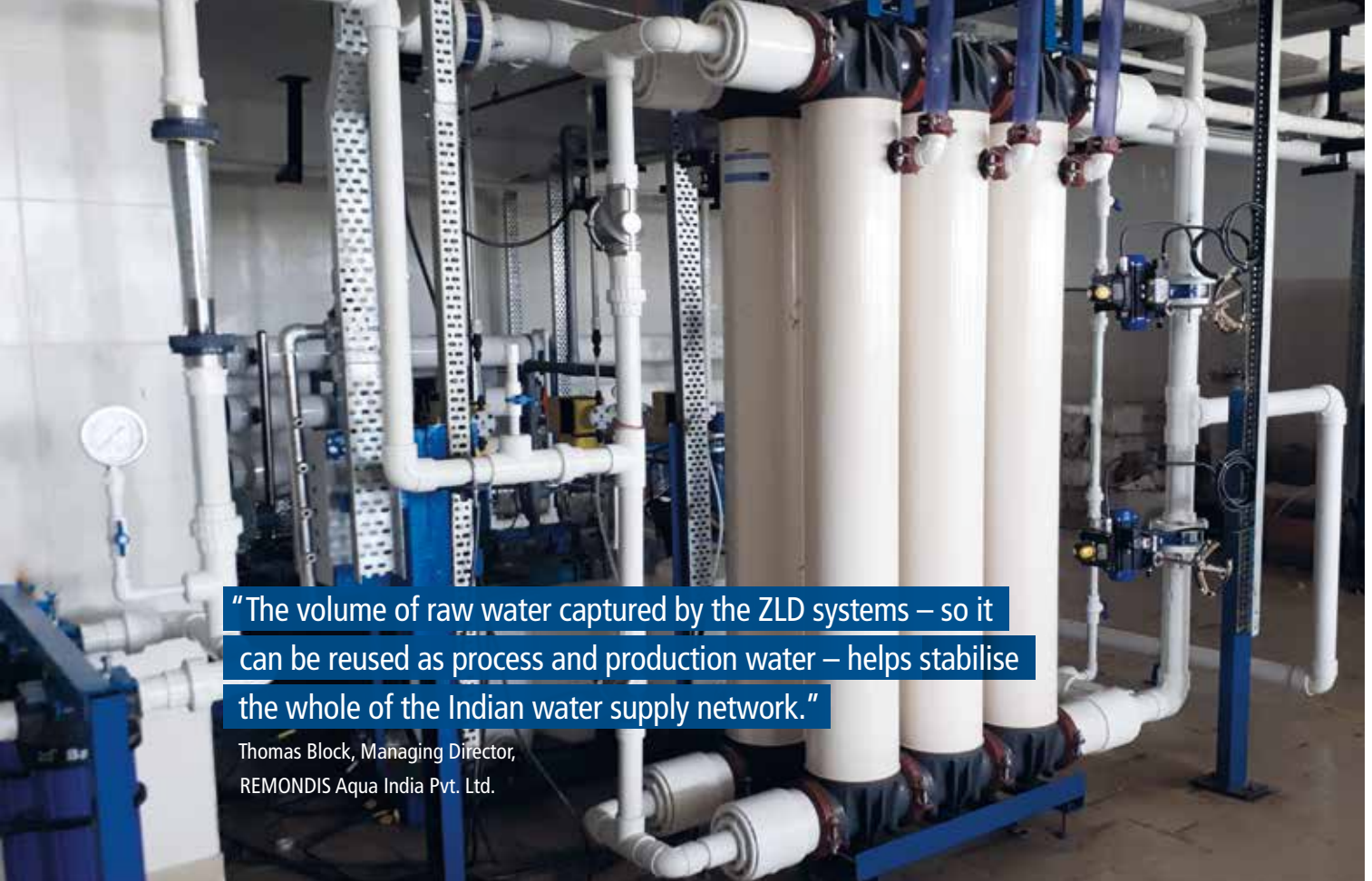
Being an expert in wastewater treatment and drinking water supply, REMONDIS Aqua realised early on that there was a need for ZLD in this region. It has already launched a comprehensive range of services related to this system over the last three years – and this despite the fact that ZLD technology is extremely complex both to design and run.

REMONDIS Aqua is one of just a handful of companies with the necessary expertise and many Indian businesses and international firms based in India have already benefited from its knowledge. The company has now become one of the leading providers of ZLD technology applications. Besides helping to secure the future of industrial firms in India, the system also has a positive impact on the environment. Thomas Block, managing director of REMONDIS Aqua India Pvt. Ltd., explained: "The volume of raw water captured by the ZLD systems – so it can be reused as process and production water – helps stabilise the whole of the Indian water supply network." What's more, the installation of ZLD technology helps grow the local economy and strengthens REMONDIS' position on the Indian market, he continued.

### Polyplastics project

REMONDIS Aqua successfully realised its first ZLD project at Polyplastics' plant in Bhiwadi in 2016. This firm, which manufactures plastic parts for the automobile industry, had REMONDIS plan, build, commission and run a ZLD system at the site. The technology has been up and running since 2017 and is able to recycle a total of 200m<sup>3</sup> of wastewater generated by the surface treatment facility every day. The wastewater, which also contains heavy metals such as chromium, zinc and nickel, first undergoes a chemical-physical pre-treatment stage before being cleaned using ultra-filtration, reverse osmosis (RO) technology and sludge treatment. A further ZLD facility is currently being set up at Polyplastics' new site in Viramgam, which is also being built – and will be run – by REMONDIS.





**“The volume of raw water captured by the ZLD systems – so it can be reused as process and production water – helps stabilise the whole of the Indian water supply network.”**

Thomas Block, Managing Director,  
 REMONDIS Aqua India Pvt. Ltd.

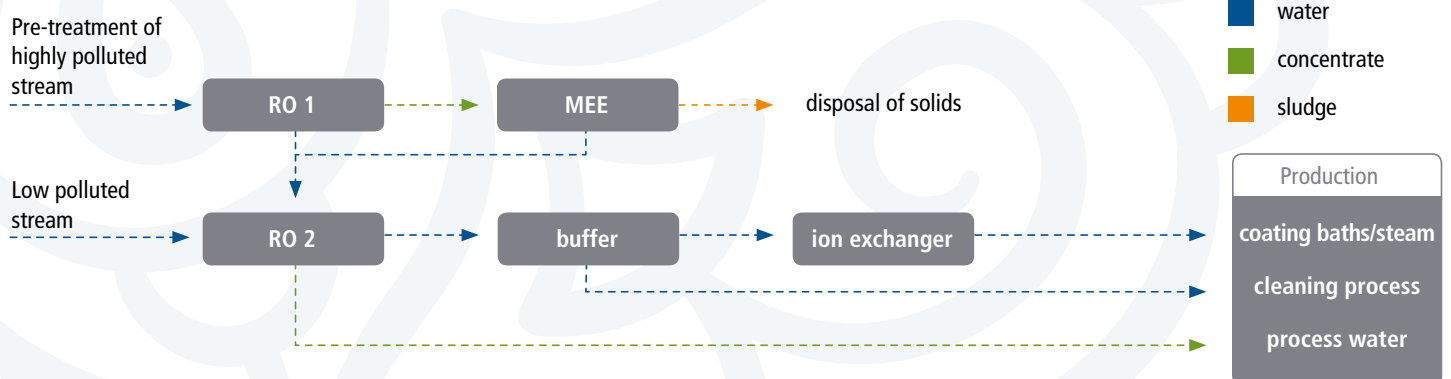
**Evonik project**

A ZLD facility is also in the process of being built for the specialty chemicals company Evonik at its plant in Dombivli. Besides planning, building, commissioning and operating the facility, REMONDIS Aqua’s services for this particular project also include financing the ZLD system. All in all, this facility, which will be able to recycle around 600m<sup>3</sup> of wastewater a day, will comprise a chemical-physical pre-treatment stage, ultra-filtration and reverse osmosis technology as well as a multi-effect evaporation (MEE) system.

**Givaudan project**

In 2018, REMONDIS built its first fully automated ZLD facility for the flavours and fragrances company Givaudan. This system has a throughput of 110m<sup>3</sup> per day. Unlike the other facilities, the production wastewater undergoes a biological rather than a chemical pre-treatment phase. Following this, though, it is also recycled using ultra-filtration and reverse osmosis technology and a multi-effect evaporation system so it can be reused in the production process.

**Membrane filtration stage / Wastewater recycling**  
 Surface technology / Polyplastics



- water
- concentrate
- sludge

Production  
 coating baths/steam  
 cleaning process  
 process water

WAG employees showed the visitors around the plant to explain how the technology, such as the wells, worked

# Schwerin: 20 years' reliable supply of drinking water

## OPEN DAY AT THE MÜHLENSCHARRN WATERWORKS CELEBRATES A SPECIAL ANNIVERSARY

The fact that the people living in Schwerin are able to access such high quality drinking water – their most important foodstuff – is a science of its own and it is the task of Wasserversorgungs- und Abwasserentsorgungsgesellschaft or WAG (a REMONDIS Aqua joint venture) to do just this. The town's public drinking water network was established 129 years ago and the Mühlenscharrn waterworks 20 years ago. The company decided to hold a special event to celebrate both these dates – organising an Open Day that was attended by WAG employees, local politicians and business leaders as well as many local residents.

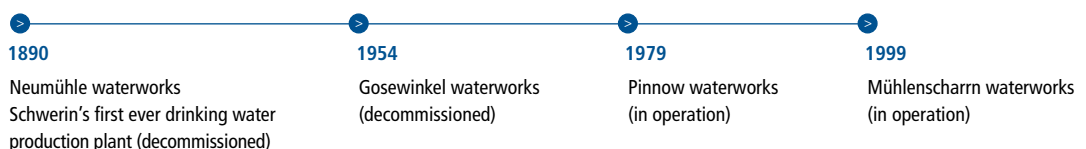
On 5<sup>th</sup> June, World Environment Day, people from across the city of Schwerin were able to take a look behind the scenes to see how their top quality drinking water supply network actually works. With temperatures reaching 34°C on that day, the event attracted large numbers of visitors who not only enjoyed the tours around the waterworks but also appreciated the cooler temperatures inside the plant. A special educational trail had also been set up for the young guests to teach them more about the water cycle.

WAG's managing directors, Beate Bürger and Hanno Nispel, made the most of this opportunity to mingle with their guests and answer any questions the local residents and colleagues had for them. These two people are responsible for ensuring that the network's fourteen wells and storage tanks (capacity: 13,500m<sup>3</sup>) are able to cover the town's drinking water requirements even in times of drought. "Together the two waterworks have a capacity of 30,000m<sup>3</sup>," Hanno Nispel explained. This means that there are always sufficient drinking water reserves available.

He himself experienced the highest demand ever last year – on 25<sup>th</sup> July 2018 to be precise – when 22,000m<sup>3</sup> were consumed by those living and working in and around Schwerin. "Thanks to our experienced staff, technological set-up and drinking water protected areas, our network will always be able to provide top quality drinking water to the people of Schwerin, no matter how much they need," he continued taking a confident look into the future.

(from left to right) Bernd Nottebaum, Head of the City's Business, Planning and Regulatory Department, and WAG Managing Directors, Beate Bürger and Hanno Nispel, were pleased that the Open Day at the Mühlenscharrn Waterworks was such a success

## A look back at Schwerin's drinking water supply network



# What to do with municipal sewage sludge?

## AMENDMENTS ARE PUTTING SEWAGE TREATMENT PLANTS AND WASTE MANAGEMENT BUSINESSES UNDER INCREASING PRESSURE

Amendments made to two ordinances back in 2017 are having a major impact on how municipal sewage sludge is being recycled. These two ordinances are the 'DüV' [Fertiliser Ordinance] and the 'AbfKlärV' [Federal Sewage Sludge Ordinance]. The new statutory conditions are putting the market under increasing pressure.

These amendments are already impacting heavily on the market, primarily due to the increased demand for thermal treatment. This trend has been further bolstered by the marked fall in the volumes of sewage sludge being spread on agricultural land – a repercussion of the amendment to the Fertiliser Ordinance. Socio-political discussions about subjects such as nitrate levels in groundwater and drinking water, traces of pharmaceuticals, multi-resistant pathogens and microplastics are also tipping the balance. Experts are currently looking at how long the market can cope with this disproportionate increase in the volumes of municipal sewage sludge being sent for thermal treatment. They are certain that demand for thermal treatment will exceed the capacities available in Germany in ten years' time at the latest.

### Averting a crisis – keeping an eye on the future

Given the fact that capacities are limited, priority must be given to averting a bottleneck by building further thermal treatment facilities. While a number of new plants are, in fact, being built at the moment, their focus is entirely on thermal treatment and not at all on phosphorus recovery.

According to experts, it will be extremely difficult – both from a technological and business point of view – to retrofit these facilities with phosphorus recovery systems. This could prove to be problematic in a few years' time looking at the amendments that have been made to the laws. As the legislator has made it obligatory for phosphorus to be recovered from 2029 onwards, industry specialists believe there really is no other alternative but to design and build new thermal treatment plants that have a system to recover phosphorus from the incineration ash as an integral part of their concept. REMONDIS' TetraPhos process is acting as a role model when it comes to recovering phosphorus and protecting the environment as it offers a viable and innovative system that already meets the future statutory requirements. The world's first industrial-scale phosphorus recovery facility is currently being built at Hamburg's sewage treatment plant and is a collaboration between HamburgWasser and REMONDIS. The project, for which the two partners founded the company Hamburger Phosphorrecyclinggesellschaft mbH, is also acting as a role model for other countries as well. It is due to be commissioned next year.



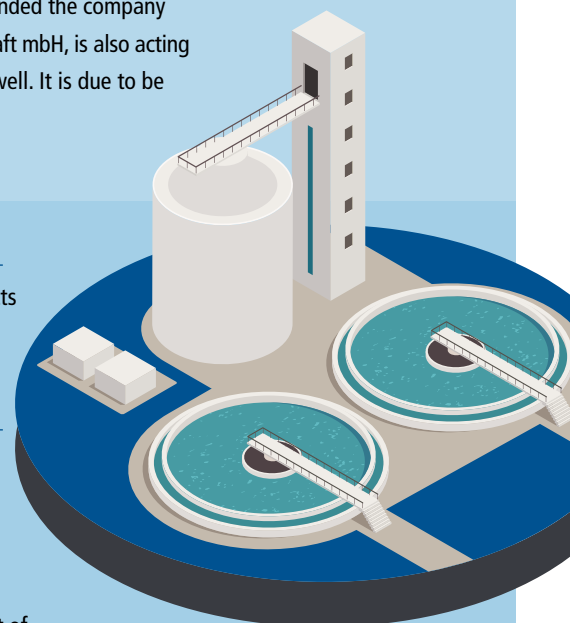
REMONDIS Aqua believes sewage sludge recycling facilities will become an integral part of plant design. This includes the TetraPhos process as a central part of the system.

### DüV amendments affecting sewage sludge

- Limits have been put on the amount of nutrients that may be spread on farms, which severely restricts sewage sludge being recycled on to land.

### AbfKlärV amendments affecting sewage sludge

- A blanket ban on sewage sludge being spread on land located in zone III water protection areas
- From 2029-2032: obligation to thermally treat sewage sludge from sewage treatment plants sized to handle wastewater from > 100,000 / 50,000 PE (population equivalent)
- From 2029: a general obligation to recover phosphorus from sewage sludge  
Steps will have to be taken to recover the phosphorus from sewage sludge with a phosphorus content of  $\geq 20\text{g P / kg dry matter (DM)}$ . If the sludge undergoes thermal treatment in a co-incineration facility, then its phosphorus content (before it is recycled) must be reduced to  $< 20\text{g P / kg DM}$  or at least by 50%. If the phosphorus is to be recovered from the incineration ash following thermal treatment in a mono-incineration system, then the recovery rate must be at least 80%.



## Ansgar Fendel the new Chair of Gesellschaft für Westfälische Wirtschaftsgeschichte e.V.

REMONDIS managing director, Ansgar Fendel, was recently named the new chair of Gesellschaft für Westfälische Wirtschaftsgeschichte e.V. This association was founded on the initiative of the Dortmund Chamber of Industry and Commerce and has almost 600 members from the worlds of science, business, culture and public life. The primary goal of this association is to promote the work of the Westphalian Business Archives. By publishing material and organising events, it aims to make people more aware of historical developments in the areas of business, society and technology.

Furthermore, the association introduced its "Westphalian Business History Prize" in 2018, which is now presented to young scientists from the region who have written an outstanding Master's dissertation.



Ansgar Fendel, Managing Director of REMONDIS Assets & Services and Chair of Gesellschaft für Westfälische Wirtschaftsgeschichte e.V.



## Ellrich gypsum facility celebrates its 150<sup>th</sup> anniversary

Last June, the gypsum plant in Ellrich celebrated 150 years of business. CASEA, the company running the plant, invited employees, long-standing customers and suppliers as well as its neighbours to attend a special party held on the grounds. It all began in 1869 when Friedrich Euling founded the firm

Vereinigte Gipswerke Ellrich am Harz GmbH at the site. Having got hold of the raw materials he needed, he then set up Germany's first ever gypsum factory, which – under a number of different owners – has been producing high quality gypsum-based products ever since.





## 589 kilometres for a good cause

Approx. 200 cyclists took part in the four-day Hanse Tour this June. Together, they covered almost 600 kilometres, stopping at around 26 different places between Rostock and Lübeck – and all in support of a good cause. Once again, the participants made the most of this tour to raise funds for children suffering from cancer and other chronic diseases. This charitable organisation has already raised over two million euros since its foundation in 1997. Among the cyclists was the newly elected Mayor of Rostock, Claus Ruhe Madsen, who has been organising this cycling tour for a number of years now. REMONDIS Aqua's subsidiary WAG was also there to support Mr Madsen during the event. WAG's managing director, Hanno Nispel, welcomed the cyclists to Schwerin and presented Mr Madsen with a cheque for 500 euros. "This is a campaign that is very close to our hearts. I hope it will continue for many years to come," Hanno Nispel said.



## BDE video clip on climate change published across the recycling industry

The BDE's video clip "Zeit zum Handeln – Klimaschutz durch Kreislaufwirtschaft" [Time to act – How the circular economy can combat climate change] has been available to view since the end of June and the response has been great.

Lasting just under three minutes, the film shows the challenges that society must face as a result of dwindling raw material supplies and climate change and demonstrates how a well-functioning circular economy can help combat these problems. The clip also emphasises the close connection between having good framework conditions for the recycling industry and achieving a country's ambitious climate goals.



[Watch the video clip here](#)



# Four drivers, three generations, one family

THE VERCH FAMILY ARE A HUGE ASSET FOR THE COMPANY AND THEIR PROFESSION AS A WHOLE



‘Take your shoes off!’ is the first thing you hear when you enter Sascha Verch’s cab. “I don’t walk around my living-room at home with shoes on either,” the 38-year-old says with a twinkle in his eye. His brother, father and son all agree with him. They are all truck drivers at REMONDIS Industrie Service’s branch in Lübeck – this is not just a job to them but a passion that they have turned into a career.

Hans Verch (58) began transporting industrial waste safely around the streets of Schleswig-Holstein 28 years ago. His son Sascha then joined him two years ago, and his second son, Pascal (32), just last year. His grandson Luca (16) started an apprenticeship at the company to train to become a lorry driver this August. Anyone who has kept a close eye on the logistics sector knows that this is something that is very rare indeed. There is a shortage of truck drivers across all industries at the moment.

All four had wanted to become a lorry driver since they were toddlers. And Hans’ father had also worked as a truck driver. Just like their ‘old man’, Hans and his two sons first went into long-haul freight transport. They have seen much of the world since then. Even 16-year-old Luca remembers how, while still knee high to a grasshopper, he sat next to his dad in his cab. Over the years, he has been to every European country except Greece.

“No-one wants to do the job anymore!” Hans says. “Hours sat in traffic jams, overcrowded rest areas and dilapidated shower rooms. And let’s be honest. It is possible to have a family and be a long-haul truck driver but it’s not easy,” he continued. None of them wants to be ‘on the road’ day in day out anymore. “We’re happy where we are. We get to see our family every day, have far more free time and can meet up with friends,” Pascal said, comparing the two. “I meet up regularly with about 30 people nowadays. In the past it was just one,” his brother Sascha added. And, at the end of the day, the money is right, too. In his old job, Pascal spent an extra 150 to 200 euros a month on shower facilities and lorry parks and buying all kinds of fast food. He can now save that money and eat healthy meals as well. “You won’t find me going anywhere else soon,” he concluded.

It is obvious that the lorries they drive are much more than simply a means to do their work. Each has a different way of demonstrating their passion for their truck. Hans, for example, cleans his four walls every single day. He always has a spare pair of shoes and a change of clothes with him so that his cab is always spotless. Sascha and Pascal have gone for a more comfortable look, hanging curtains up on the windows. Luca, who must learn from the passenger seat until he turns 18, intends to be just like them. And their love of their job can be seen in their homes as well. With over 600 model trucks, they have all managed to transport their profession into their living rooms – no dirt, but a whole load of fascination.



All four have succeeded in turning their fascination for lorries into a profession



# IMPRESSIONS

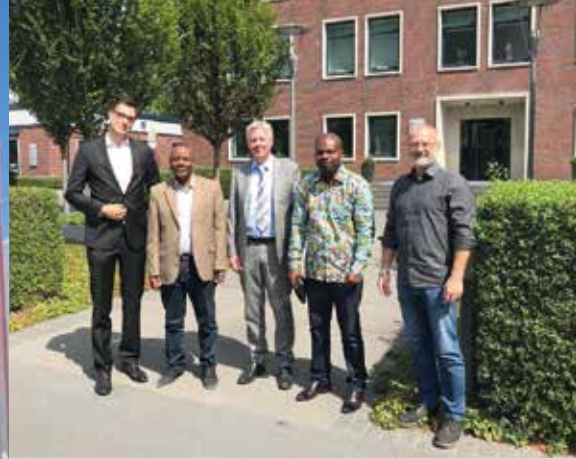


◀ (from left to right) Annette Specht, Managing Director of the local DIE GRÜNEN [Green Party] association, Anna Kebschull, District Administrator of the Osnabrück DIE GRÜNEN [Green Party] association, Wolfgang Schöning, Managing Director of K.R.O. Bohmte, Wolfgang Steen, Managing Director of REMONDIS Region Nord, and Georg Jungen, Managing Director of REMONDIS Region Nord, at the opening of the facility in Bohmte

▶ Being a member of the Friend's Association, REMONDIS Region Nord was also at this year's Kiel Week



▲ Hendrik Schurig, HAMBURG WASSER, Christoph Lasek, HPHOR, and Dr Johannes Brunner, HPHOR, (from left to right) crossing the finishing line of the Hamburg Wasser World Triathlon, which was held in Hamburg at the beginning of July



▲ During his visit to the Lippe Plant, the Ghanaian Minister for Water Resources, Works and Housing, Abu-Bakar Saddique Boniface, was clearly impressed by just how effective recycling is in Germany (from left to right: Tim Wilms, TSR Key Account Manager, Minister Abu-Bakar Saddique Boniface, Michael J. Schneider, Senior Press Officer at REMONDIS, Nana Yaw Konadu, Hans-Werner Müller, Managing Director of Elorex GmbH)

▼ Visiting the Lippe Plant, Europe's largest industrial recycling centre: NRW Environment Minister Ursula Heinen-Esser (CDU)



◀ Once again, the schoolchildren visiting the Children's Climate Day event in Iserlohn were enthralled by the RECYCLING PROFESSIONALS' educational theatre show

▼ Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, welcoming 88 new apprentices



## For us, it's always Friday

Taking action to prevent climate change: we are calling for a Europe-wide landfill ban. Why? Because systematically recycling materials can significantly reduce emissions of greenhouse gases in Europe.

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