

The REMONDIS Group magazine

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Globally mobile

RETHMANN purchases shares in Transdev,
one of the world's leading public transport
operators

REMONDIS looking to acquire DSD

Market dynamics and the new packaging law
should increase packaging recycling rates

Roman Forum in the Vatican

Family business owners meet the Pope to dis-
cuss the importance of running a sustainable
business

Lightweight designs & recycling

In an interview, Dr Ansgar Fendel explains
how the two can – or cannot – be reconciled

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Dear Readers!

2018 has been an extraordinary year for our group. There have been some great business opportunities around – in the area of recycling as well as in the global market for mobility, both in the private and public transport sector. We have been able to make the most of these opportunities by taking steps to acquire DSD (Duales System Deutschland GmbH) – as has the RETHMANN Group, which is intending to purchase shares in Transdev, a leading global operator of mobility solutions based in France. Both transactions must still be approved by the relevant authorities.

As an operator and global integrator of mobility solutions, Transdev – “the mobility company” – provides eleven million passenger trips every day, connecting people and places with its efficient and environmentally friendly transport services. Transdev advises and collaborates with public authorities and private sector firms providing sustainable, safe and innovative transport solutions.

82,000 employees serve the company’s customers and passengers in 20 countries. In 2017, it generated a turnover of 6.6 billion euros. Transdev’s operations, however, not only include trains, trams and buses. People using the ferries in Sydney to get across Sydney Harbour are also Transdev’s customers. And the company’s portfolio also has cable car networks and automated minibuses. With Transdev being so important for our family-run company, it makes absolute sense for the mobility group to become the RETHMANN Group’s fourth main field of business alongside REMONDIS, Rhenus and SARIA.



Ludger Rethmann, REMONDIS Board Chairman

This past year has been one of the driest since records began in Germany. This has, on the one hand, led to the water levels of our rivers being much lower than normal – quite possibly the lowest levels ever – causing huge problems for inland shipping companies and their customers. On the other, it has once again turned the spotlight on the subjects of climate change and resource conservation. The Vatican is also worried about “our Common Home”. Pope Francis made it clear just how worried he is when he wrote his “Laudato si’” encyclical. REMONDIS joined a number of other family business owners to attend the first Roman Forum, which was held in the Holy City and organised by the BDE [Federal Association of the German Waste Management Industry]. During the event, the participants had a moving meeting with the Holy Father who was impressed by the initiatives of these privately run businesses to promote sustainability.

Talking about sustainability: Meyer Werft, a shipbuilding business in Papenburg, is also focusing on sustainable production activities – and on building environmentally friendly ships having recently launched its first gas-fuelled cruise ship. This traditional company is also being supported by REMONDIS. Heading for new shores together, so to speak.

May we take this opportunity to thank you for your great support and collaboration over the last twelve months and wish you a Merry Christmas and a happy, healthy and successful New Year.

Yours

A handwritten signature in black ink that reads "Ludger Rethmann". The script is fluid and cursive.

Ludger Rethmann



RETHMANN moves into mobility

The RETHMANN Group intends to acquire Veolia's shares in the Transdev Group in order to help Caisse des Dépôts develop and grow the company.

"The RETHMANN Group's acquisition of this stake in the company will also strengthen its international dimension, making Transdev a true European mobility champion."

Eric Lombard, CEO Caisse des Dépôts

On 02 October 2018, the RETHMANN Group announced in Paris that it is intending to purchase Veolia's 30% share in the Transdev Group (Transdev) and that its public transport operations in Germany will be integrated into the Transdev Group as part of this agreement. The RETHMANN Group will own a 34% share in Transdev on completion of these two transactions which must first be presented to the companies' respective employee representative groups and be approved by the relevant authorities.

With two-thirds of the voting rights and a 66% share in Transdev, the financial institute Groupe Caisse des Dépôts will continue to own a majority share in Transdev. The RETHMANN Group is REMONDIS' parent company and a 100% family-owned business. Its decision to invest in Transdev reflects the group's long-term strategic goals.

As the parent company of REMONDIS, SARIA and Rhenus, the RETHMANN Group is a key service and utility provider. It works for both the public and private sectors providing water and recycling services as well as logistics and public transport – Transdev's core business. The RETHMANN Group will contribute to this transaction by integrating its German public transport operations (run by its subsidiary Rhenus Veniro) and its technologies and know-how into the Transdev Group.

Having the RETHMANN Group as one of its shareholders will both reinforce and speed up Transdev's future development. What's more, greater focus will also be put on growing the Transdev Group's international operations (60% of its turnover is already generated outside France). This will make Transdev one of the leading mobility companies in Europe. The RETHMANN Group will share its digital solution technologies, tools and know-how, all of which are hugely important for the Transdev Group and its customers both in France and beyond.

As the parent company of REMONDIS, SARIA and Rhenus, the RETHMANN Group is a key service and utility provider. Its operations will now be extended to include Transdev, a pioneer of mobility in Europe and beyond





Eric Lombard, CEO of Caisse des Dépôts, commented: "As the majority shareholder of Transdev, we welcome the arrival of the RETHMANN Group, a long-term industrial partner, as a shareholder in Transdev. Our subsidiary will thus have all the assets to offer even more innovative mobility solutions in France that are adapted to all the specificities of the regions. The RETHMANN Group's acquisition of this stake in the company will also strengthen its international dimension, making Transdev a true European mobility champion."

Ludger Rethmann, board chairman and one of the owners of the RETHMANN Group, said: "We are extremely proud to start a new industrial partnership with the Groupe Caisse des Dépôts that focuses on developing Transdev, the leading company for mobility solutions. The RETHMANN Group believes that climate change and the digital revolution currently taking place in the workplace will create many new opportunities for modern and sustainable mobility solutions. We wish to share both our know-how of international logistics and public services and our long-term family-owned business model with Transdev in order to develop custom-designed mobility solutions that meet the exact requirements of its customers."

Thierry Mallet, board chairman and CEO of Transdev, remarked: "The presence of RETHMANN Group in the capital of Transdev, alongside majority shareholder Groupe Caisse des Dépôts, will allow us to accelerate our development. Our shareholders support our vision of a mobility which is ever more human, inclusive, innovative and sustainable. They will actively support our ambition as a global integrator of all mobilities. From now on, with RETHMANN Group, we will continue to accelerate on this trajectory."

Transdev recently launched its 'Moving You' strategy that aims to transform its business and integrate mobility solutions. This strategy reflects the company's response to the major changes affecting the public transport sector as well as its desire to be able to better meet the needs and expectations of passengers, public authorities and business customers. The change in its shareholder structure will help ensure this strategy is implemented successfully.

"We wish to share both our know-how of international logistics and public services and our long-term family-owned business model with Transdev in order to develop custom-designed mobility solutions that meet the exact requirements of its customers."

Ludger Rethmann, Board Member of the RETHMANN Group



Three companies – one goal: Caisse des Dépôts, REMONDIS and Transdev

Caisse des Dépôts retains its control over Transdev

Caisse des Dépôts is a French state-owned bank whose mission is to finance and support medium-sized businesses as well as social housing and public transport projects. It had been looking for an industrial partner to take over Veolia's 30% share in Transdev. CDC's search for a partner came to an end when it found the RETHMANN Group. With 66% of the shares and more than two-thirds of the voting rights, Caisse des Dépôts will retain its control over Transdev. The board of directors has a total of eleven members: six representing the Caisse des Dépôts Group, one independent member, one representing the employees and three representing the RETHMANN Group – further strengthening the international character of the company's management structure.

As the majority shareholder, the Caisse des Dépôts Group confirmed that it will be helping Transdev to implement its long-term development plans. It supports the company's ambitious industrial project in a sector that is currently undergoing huge changes. By taking these steps, Transdev will be able to establish itself as the leading business for sustainable and innovative mobility solutions, reflecting the Caisse des Dépôts Group's main strategic goals and its role as a partner to local, city and regional authorities.

RETHMANN – a German industrial group with close ties to local authorities and public transport operations: an ideal business for Transdev

RETHMANN is a German industrial group with close ties to local authorities. It also operates in the public transport sector, Transdev's core business. Its decision to invest in Transdev reflects the group's long-term strategic goals. RETHMANN, a family-run business, is one of the global leaders in three different areas: in logistics and transport – Transdev's main business – via its subsidiary Rhenus (29,000 employees); in water, recycling and public and industrial services via its subsidiary REMONDIS (34,000 employees); and in bio-technologies via its subsidiary SARIA (9,000 employees). As part of this deal, the RETHMANN Group's public transport operations run by its subsidiary Rhenus Veniro will be integrated into Transdev. Transdev will, therefore, become the RETHMANN Group's fourth main field of business alongside REMONDIS, Rhenus and SARIA.

All three of the RETHMANN Group's divisions have been operating in France since 1995. It employs around 3,000 people at 60 business locations across the country and generated a turnover of 640 million euros in 2017. With 40% of the Transdev Group's revenue being generated in France, the RETHMANN Group sees this investment as being a great opportunity to grow its transport and logistics operations both on the French market as well as on other international markets.

With around 82,000 employees and a turnover of a good 6.6 billion euros, Transdev is one of the global leaders providing integrated mobility solutions. Following its mission to make people more mobile, Transdev provides its services around the world – especially via its bus and rail networks. It runs, for example, 33 rail networks, 22 tram networks, around 25,000 buses and even 90 ferries, including all the ferries serving Sydney, Australia. Indeed, Transdev even operates cable cars (for example in Bogota, Columbia) and has developed these networks so that they provide passengers with a real alternative to other forms of public transport, taking the pressure off the crowded networks. Transdev leads the shared taxi market in the USA (9 million passengers) and its firm, Connexion, owns a 30% share of the Dutch 'transport on demand' market.

With

82,000
employees



and a turnover
of a good

6.6 billion
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Transdev is one of the global leaders
providing integrated mobility solutions



Fresh momentum for Transdev's development strategy

This latest investment by the RETHMANN Group will help reinforce and speed up Transdev's development strategy. The RETHMANN Group's public transport operations (bus and rail) in Germany – a perfect addition to Transdev's business – and its presence in Eastern Europe and Australia will, in particular, provide a strong basis for growth. This merger will also strengthen the Transdev Group's activities in France and facilitate the development of innovative systems to tackle mobility challenges.

The RETHMANN Group operates buses (urban, national) and trains via its subsidiary Rhenus Veniro. Rhenus Veniro runs bus networks in seven German states, three regional rail networks and is in charge of all public transport in the City of Zwickau. All in all, the company employs more than 2,200 people and has 1,617 buses, 32 trams and eight regional trains, which together cover 65 million kilometres and carry over 100 million passengers a year.

Transdev Germany – top quality bus & train services

This merger of operations will strengthen Transdev's position as one of the leading private-sector providers of public transport services in Germany without the deal impacting negatively on its business results. Transdev already has a strong presence in Germany where it employs around 5,000 people in 43 subsidiaries across 15 German states. The company can be proud of its fleet: 375 railcars, 4 locomotives, 1,200 company-owned buses and 14 trams are already run under Transdev's flag – and often under a different flag so that the passengers do not actually realise that Transdev is the owner. Who knows, for example, that Bayerische Regiobahn BRB, NordWestBahn and Württembergische Eisenbahn – to name just three of Transdev's nine German railway companies – belong to Transdev? And whoever gets on a bus run by Alpina, MittelWeserBus, Stadtbusschwäbisch Hall or Norddeutsche Verkehrsbetriebe NVB benefits from the same high quality Transdev services as those using a bus operated by one of its other 20 bus companies in Germany.

Strengthening Transdev's international operations, which already make up over 60% of its business

Transdev has big ambitions and is looking to grow its operations in Germany where it already has a turnover of almost 900 million euros and is the second-biggest player on the regional rail market after the state-owned rail operator, Deutsche Bahn. What's more, Transdev wishes to expand its networks in Eastern Europe, where the RETHMANN Group is already well established.

By making long-term investments in key innovative technologies, such as autonomous vehicles, digitalisation, robotics and sustainable mobility, the new Transdev will – with the help of its new shareholder RETHMANN – develop into a sustainable and modern mobility operator. This development will be perfectly in tune with Transdev's innovation priorities, known simply as P.A.C.E: personalised (personnalisé), autonomous (autonome), connected (connecté) and environmentally friendly (écologique).

The Transdev Group's mission is to offer its customers – passengers, local inhabitants, cities, regions and companies – the best possible services and mobility solutions that are inclusive, innovative, sustainable and adapted to their needs. Which is why Transdev not only wishes to be an operator but also a global integrator of mobility solutions that meet its customers' daily needs today and in the future. Together with the RETHMANN Group, it will now be able to continue working towards this goal. Both companies would like it to become the partner of choice for both the public and private sectors.



24,600 vehicles in 13 countries

Leader in intercity transport in France

A pioneer in the field, with TEOR in Rouen (France)

90 ferries, 13 networks in 5 countries

Connexion, lead in transport on demand in the Netherlands with 30 % of market share

World leader with 22 networks in 9 countries

2 services in France: Nice and La Rochelle

Transdev worldwide: from mass transport systems to 13 individualised mobility solutions

Witte Kruis, the first ambulance service provider in the Netherlands with 130,000 patients carried every year

3 metro lines in Mumbai (India), Seoul (South Korea) and Paris-CDG airport (France)

33 networks in 6 countries

130,000 off-street and on-street parking spaces in France

16 cities in France

Leader in the USA with 9 million passengers

About Transdev:

As an operator and global integrator of mobility solutions, Transdev – “the mobility company” – provides over three billion passenger trips every year, connecting people and places with its efficient and environmentally friendly transport services. Transdev advises and collaborates with public authorities and private sector firms providing sustainable, safe and innovative transport solutions. Its 82,000 employees serve the company’s customers and passengers in 20 countries. In 2017, it generated a turnover of 6.6 billion euros.

To find out more, go to transdev.com



REMONDIS on the verge of acquiring Der Grüne Punkt

HOPE THAT THE NEW PACKAGING LAW WILL INCREASE PACKAGING RECYCLING RATES

No matter whether it be a yoghurt pot, drinks carton or a Christmas treat: the 'dual system' is responsible for the licensing of the packaging



“We really need to make every effort to ensure packaging becomes smarter and more environmentally friendly. The new Packaging Law aims to do just this. It has also set higher recycling rates and makes sure the costs are spread fairly among all distributors of packaging.”

Svenja Schulze, Environment Minister

On 27 September 2018, REMONDIS and Duales System Deutschland Holding GmbH & Co. KG (‘DSD – Der Grüne Punkt’) finally put an end to the rumours circulating around the industry. Having purchased all shares in DSD, this Lünen-based family-run company has re-entered the ‘dual system’ market after a four-year break. The acquisition must still be approved by the monopolies commission.

REMONDIS decided to re-enter this particular market as it believes there are now good opportunities to grow packaging recycling rates, especially against the backdrop of the new Packaging Law, which is coming into force on 01 January 2019. In the future, all manufacturers – no matter whether they sell their packed products via online or ‘bricks-and-mortar’ shops – must have registered at a newly established Central Agency before placing their products on the market. People who fail to register may no longer sell their packed products from this day onwards.

The manufacturers must also provide the Central Agency with information about their packaging, for example which packaging compliance scheme they are part of. The same is true for the operators of the different packaging compliance schemes. This will create a transparent system as the agency can simply compare the data submitted.

Manufacturers have been able to sign up to the online LUCID Packaging Register since September (i.e. four months before the new law comes into force). “We really need to make every effort to ensure packaging becomes smarter and more environmentally friendly. The new Packaging Law aims to do just this. It has also set higher recycling rates and makes sure the costs are spread fairly among all distributors of packaging,” explained Environment Minister Svenja Schulze. The Central Agency, which must act impartially, will also monitor what is happening on the market. Moreover, it should ensure that the market is fairer and that there is more competition between the market players. This is important as the agency will also be in charge of determining which companies collect sales packaging and glass.



Duales System Deutschland generates an annual turnover of

490 million
euros



employs around

220
people



and is one of a total of

9 
‘dual systems’

"All around the world, politicians are – with good reason – talking about plastics recycling. DSD's global standing will help open up new opportunities here, too – we will be on a level playing field with the other competitors in this market which means we will also be able to grow our business abroad."

Ludger Rethmann, Board Chairman of REMONDIS

New momentum in the 'dual system' market

Originally founded as a non-profit company, the packaging compliance scheme, Duales System Deutschland, now employs approx. 220 people and generates an annual turnover of 490 million euros. It is one of a total of nine 'dual systems' operating on the market for licensed waste packaging. Der Grüne Punkt has been recycling used sales packaging and recovering raw materials for re-use since 1991. A number of new firms have entered the 'dual system' market over the last few years, which has resulted in the company not only losing a good three-quarters of its original turnover but also changing hands several times.

As a result, its annual results are well below the figures generally generated by medium-sized private sector firms operating in the industry and indeed below those of medium-sized public sector businesses, such as those owned by the City of Dortmund.

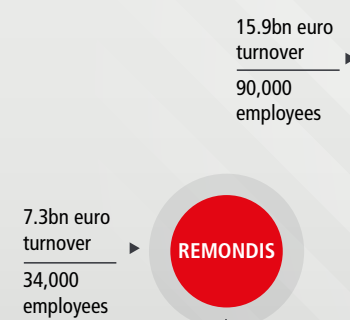
Contrary to general belief, DSD no longer dominates the market as it did in the past. What's more, the two large French companies, SUEZ (turnover: 15.9bn euros / workforce: 90,000) and Veolia (turnover: 25.125bn euros / workforce: 168,000), have both been operating their own 'dual system' packaging compliance scheme for a long while now, as do a number of medium-sized recycling firms who together own their own compliance scheme. Even Chinese companies have a considerable share of the market via their German associated company, ALBA / Interseroh.

A changing recycling industry

In fact, the recycling sector as a whole has undergone some major changes just recently. The decision of Chinese investors to purchase shares in the Scholz Group (1.634bn euros turnover), EEW (541m euros turnover) and Alba/Interseroh (1.28bn euros turnover) has led to a further diversification of the market over the last two years as well.

The market share of the 'dual systems' and the size of the shareholder companies

TURNOVER OF THE SHAREHOLDER COMPANIES



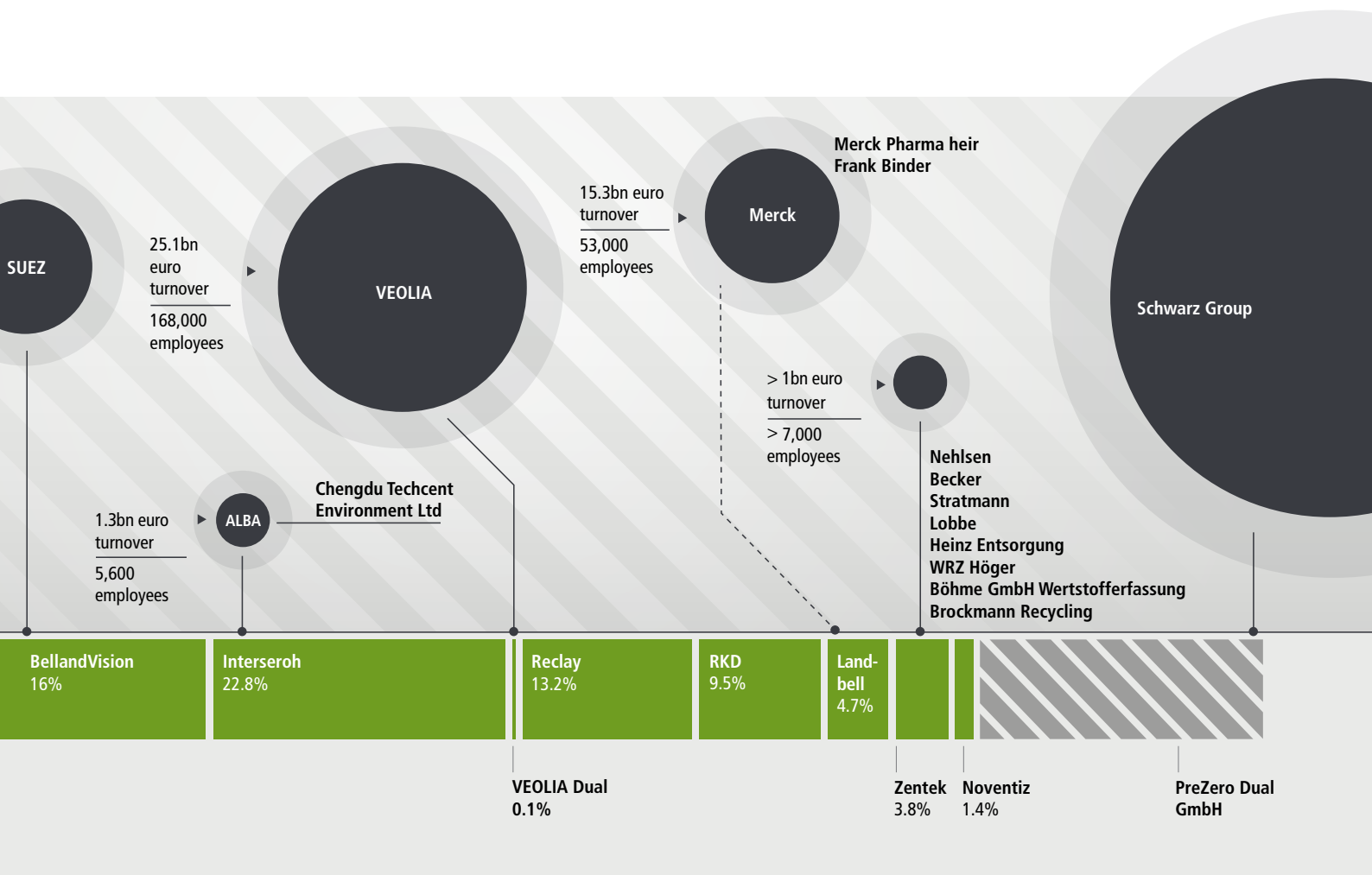
THE 'DUAL SYSTEMS' AND THEIR SHARE OF THE LICENSED WASTE PACKAGING MARKET (SALES PACKAGING Q2/2018)

A new market player has also joined the recycling industry: the Schwarz Group (Lidl/Kaufland), which had a turnover of 96.9 billion euros in 2017, thirteen times that of REMONDIS. Its workforce comprises 400,000 employees, making it larger than the whole of the German recycling sector put together. In July, the Schwarz Group's subsidiary, GreenCycle, purchased Tönsmeier, the fifth-largest recycling company in Germany, acquiring a volume of sales three times bigger than all of the acquisitions made by REMONDIS in 2016 and 2017. Moreover, this retail group will become a major competitor on the 'dual system' market via its subsidiary PreZero Dual GmbH, a company previously run under the name SDL Sigma GmbH.

The increase of digitisation has also added momentum to the market. A number of firms belonging to the Schwarz Group, for example, offer online platforms for business customers and a contract platform for 'dual system' companies and their customers.

Improved conditions for international growth

Thanks to its acquisition of DSD, REMONDIS will now be able to offer its customers even more services – closed-loop systems, sustainable product designs and a better position regarding packaging licensing thanks to recyclable packaging to name just a few. What's more, most of the other EU member states still need to introduce packaging compliance schemes similar to the German 'dual system' as do countries beyond Europe, such as Russia and China. If REMONDIS is to be able to operate on these markets as a reliable and expert partner, then it must also play a role on its own packaging recycling market. "All around the world, politicians are – with good reason – talking about plastics recycling. DSD's global standing will help open up new opportunities here, too – we will be on a level playing field with the other competitors in this market which means we will also be able to grow our business abroad," explained Ludger Rethmann, board chairman of REMONDIS.



“On the Care for our Common Home”

REMONDIS ATTENDS THE ROMAN FORUM AT THE VATICAN

In June 2015, during the third year of his papacy, Pope Francis published an encyclical letter on the complex subject of the environment and its development. Entitled “Laudato si’ – On the Care for our Common Home”, it takes a close look at environmental protection, climate change and the depletion of our planet’s natural resources. In his encyclical, the Pope also laments the social injustices caused by the thoughtless way people handle natural resources. With this in mind, 60 well-known family business owners were invited by the BDE [Federal Association of the German Waste Management Industry] to attend a special conference in Rome at the beginning of September. With the help of the FBN [Family Business Network] and the Malteser Charity, the BDE hosted the Roman Forum to discuss with the Pope and other dignitaries about the responsibility of companies to further sustainability and resource conservation. Norbert Rethmann, honorary chairman of the supervisory board of the RETHMANN Group, and Herwart Wilms, REMONDIS managing director, travelled to the Vatican on behalf of REMONDIS.





This event shone the spotlight on Pope Francis' concern for our environment and was held on 01 September, the "World Day of Prayer for the Care of Creation". Right from the start of his papacy, Pope Francis has been urging us to treat our planet's resources more responsibly and to distribute them fairly among the world's population. The participants echoed this plea and all agreed that – for the good of mankind – sustainable production processes and a truly circular economy were needed to break the link between economic growth and the consumption of natural resources.

"We welcome Pope Francis' warnings and appeal to the international community. It is vital that people recognise how important recycling is for conserving natural resources and curbing climate change," commented Peter Kurth, BDE President.

Being a family-run recycling business, REMONDIS is well aware that its business activities involve work that affects many generations and that priority must be put on finding pioneering ideas to ensure future generations also have sufficient supplies of natural resources. "Just looking at the current and future problems caused by waste packaging makes it clear how important it is to increase recycling rates. We are doing everything in our power to achieve this. In line with our motto: Whatever people put together – should be able to be taken apart again," explained Herwart Wilms, underlining REMONDIS' call for packaging to be designed so that preferably all the materials can be recovered, recycled and reused.

Sustainable designs that enable products to be recycled are an important way to protect our "common home".

The Vatican's Casina Pio IV opens its doors for the first time

Besides a podium discussion, there were also a number of talks on the programme which were held by high-calibre speakers. These included, for example, the chancellor of the Pontifical Academy of Sciences, Archbishop Dr Marcelo Sánchez Sorondo, and Prefect of the Papal Household, Archbishop Dr Georg Gänswein, as well as the President of the EU Parliament, Antonio Tajani, Prof. Martin Faulstich from the Clausthal University of Technology and the President of the European Ethics Commission, Prof. Christiane Woopen.

The highlight of the Forum was a private audience with Pope Francis in the Sala Clementina. In his address, he praised the initiative of the companies and called on all those participating to increase their efforts to create recycling structures and ensure natural resources were fairly distributed around the globe. During the event, the companies also presented three key projects to the head of the Catholic Church. Organised jointly by the firms, these projects have an international focus and aim to improve local living conditions.

The World Day of Prayer was not the only reason for holding this event. Earth Overshoot Day, which fell on 01 August this year, also warns that humans are consuming too many raw materials. At the moment, we need 1.7 planets to meet our annual demand for raw materials – and this figure will continue to rise. The latest report published by the UN Intergovernmental Panel on Climate Change (IPCC) takes a detailed look at global warming. If emissions remain as they are and do not increase – a fairly optimistic assumption – then global warming is likely to reach 1.5°C between 2030 and 2052. In contrast, sustainable production processes and recycling reduce carbon emissions and help to curb climate change. And so, spurred on by their visit to Rome, the companies will now work on their projects to promote the circular economy and to break the link between economic growth and the consumption of natural resources – for the good of mankind and our common home.



Norbert Rethmann wrote a letter to the Pope in response to his "Laudato si'" encyclical and gladly accepted Pope Francis' invitation to meet and discuss it with him



Humans have been living beyond their means since 01 August



The Special Report on Global Warming of 1.5°C can be found here

The 2018 Essen Light Festival was opened by Herwart Wilms, REMONDIS Managing Director, and the Mayor of Essen Thomas Kufen



REMONDIS turns on the lights

REMONDIS HELPS LIGHT FESTIVAL TO ILLUMINATE ESSEN'S CITY CENTRE

Essen Illumination Weeks help to bring a sparkle to Essen's city centre as the days get shorter and darker. The beautiful illuminations will be lighting up the city until 06 January 2019 – creating a very special atmosphere to the run up to Christmas as well as adding a sparkle to the visitors' eyes. This year, the Essen Illumination Weeks kicked off with the Essen Light Festival. Around 300,000 people travelled to the city centre between 26 October and 04 November 2018 to take in the sight of the 18 wonderful illuminations and video mappings put together by local and international artists.

Following the successful start to the 3rd Essen Light Festival on Friday, 26 October 2018, REMONDIS renewed its commitment to the Light Festival as a partner for sustainable projects. "We love the idea of using light art to raise awareness of sustainability in our everyday lives," commented Guido Hanning, managing director of REMONDIS West GmbH.

Three sustainable projects were presented at this year's Essen Light Festival, which ended on 04 November. Canadian artists Caitlind r.c. Brown and Wayne Garret set up their light installation, "The Cloud", on the Kennedyplatz, Essen's main square. This illuminated cloud was made up of over 2,000 old light bulbs. Olivia d'Aboville, a French-Philippine

artist, erected her "Giant Dandelions" installation (made up of old PET bottles) in the 'grüne mitte Essen' park. And Dirk Heindl from Essen built his "La Tüchten" installation from old water dispenser bottles.

Thanks to REMONDIS' support, sustainable light art will also be displayed at future Essen Light Festivals. Richard Röhrhoff, managing director of EMG – Essen Marketing GmbH, which organised the light festival, said: "We really appreciate the support the company has given us as it makes it possible for us to motivate both local and international artists to build light art from consumable materials. Perhaps we can succeed in positioning the Essen Light Festival as a particularly sustainable light festival following on from Essen's role as the European Green Capital in 2017."

"We love the idea of using light art to raise awareness of sustainability in our everyday lives."

Guido Hanning, Managing Director of REMONDIS West GmbH



Two Canadian artists turned 2,000 old light bulbs into the inspiring installation entitled "The Cloud"



Light bulbs, PET bottles and water dispenser bottles were transformed into beautiful light art – illuminating, too, the importance of recycling



Gates open: REMONDIS presents 15 apprenticeships

THE COMPANY TAKES PART IN THE 2018 LÜNEN APPRENTICESHIP EVENING



From professional truck drivers, to chemistry lab technicians and industrial management assistants, all the way through to metalworkers – REMONDIS is the place to go to for anyone looking to do a technical or commercial apprenticeship. 607 young people travelled to the company during this year's 'Lünen Apprenticeship Evening' where, as always, they were able to enjoy a comprehensive and breathtaking programme of events: using VR headsets to take a walk around REMONDIS' scrap metal facility in Duisburg; driving a truck simulator; or trying out the assessment test that applicants have to take for the industrial management assistant course. There was a whole range of things for the visitors to discover at the different stands set up at REMONDIS' head office.

Snacks and drinks were on hand for those wishing to take a break and listen to the interviews held with the company's current apprentices. Throughout the evening, presenter Christian Müller-Espey talked to a number of apprentices, asking them about their work at REMONDIS, their application to the company and their apprenticeship course. The all-in package included a bus shuttle service, with a bus

leaving the centre of Lünen to take the visitors to the plant every ten minutes. "As always, the shuttle service proved to be really popular. Practically all the buses were full despite the cold and windy weather," commented apprenticeship manager, Kristina Rehahn, who was really pleased with the way the evening went.



A new experience for many of the young visitors: sitting behind the wheel of a lorry



The bus tracking system used during the Apprenticeship Evening was developed by the REMONDIS Group's own IT apprentices

The buses were tracked online by none other than REMONDIS IT Services or RITS. It, too, presented its apprenticeship courses for young people wishing to become IT specialists either in the area of applications development or systems integration. Used for the first time a few years ago, this tracking system has been steadily developed and improved with everything running smoothly and a three-figure number of passengers achieved for the very first time. "There were certainly more people interested in IT jobs this year," said Jannik Gensicke. "Our bus tracking system was a hit as it is every year – there are always loads of questions about the software," he added.

The IT department looks for a number of skills in its applicants (such as strong logical and communication skills and the ability to work in a team) and prefers them to have good grades in Maths, German and English. Ideally, they already have some practical experience of working in the area of IT. "Once an applicant has convinced us of their strengths, they are then given their own individual schedule detailing when they get to work in which departments. Our apprentices spend time in all of our departments and are given their own project tasks very early on in their course," explained Sarah Lierz, apprenticeship manager at REMONDIS IT Services. This includes the service desk, the network and security departments, programming and business intelligence.

Paul Gellissen, who is currently training to become an IT specialist, believes this is a huge advantage: "We get to take on our very own tasks as soon as the short induction phase is over and so the job is never boring. This is one of the things that I really like about my apprenticeship as well as the friendly atmosphere and the flexitime." The apprenticeships at RITS very much focus on the practical side of the job. "The majority of the course is practical work – college classes make up just 20% of the apprenticeship. We believe this is really important. At the end of the day, it's all about their work in the company," stressed Sarah Lierz.

Once an apprentice has completed their practical three-year course, they then join one of the teams. RITS is also more than happy for them to take part in a further training course or to study part time at university. "Normally, it's just a matter of talking to your line manager," Paul Gellissen said.

Every year, RITS takes on four new apprentices, training two of them to become an applications developer and two to become a systems integration specialist. At the moment, there are a total of twelve apprentices working towards their goal of becoming an IT specialist.



REMONDIS presented its wide range of apprenticeships: from chemistry lab technicians, to professional truck drivers, all the way through to firefighters



25 years of REMONDIS for Stettin

FUN CELEBRATIONS FOR ALL THOSE LIVING IN THE REGION

REMONDIS has been celebrating its 25th anniversary in Stettin together with all those living and working in the region. The year-long celebrations have been run under the name “REMONDIS for Stettin” and have included a variety of events, such as competitions, concerts and art exhibitions. As far as the local inhabitants are concerned, REMONDIS is not only one of the region’s biggest recycling businesses, it is also a company steeped in tradition with strong ties to the region’s social and cultural environment.



REMONDIS has been making the most of its know-how to help Stettin and its waste management sector since the 90s. The company is now one of the region’s most respected brands.

The main event of this 25th anniversary was a three-part competition – with the winners being presented with tickets to attend a live concert. The participants were able to go to an exclusive concert held by the well-known Polish band Audiofeels at the Stettin philharmonic hall as well as to a special music performance put on by the theatre group Buffo, a household name across the whole of Poland, and a concert with the young pop singer, Margaret. REMONDIS Stettin GmbH, however, felt that it was important that the competition was not only fun but informative as well and so the questions the participants had to answer covered the subjects of waste, recycling and environmental protection. And so, they had the opportunity to take part in an online quiz and guess which waste belonged in which bin.

Each part of the competition focused on a different coloured wheelie bin. At the beginning of the year, the company concentrated on old glass, which is collected in green bins in Poland. The winners were the people who managed to solve the virtual task in the shortest amount of time. The summer months took a detailed look at the yellow bin. This time the participants had to virtually sort plastic and metal waste. The last part of the quiz, the blue bin section, turned the spotlight on how paper and cardboard should be separated and recycled correctly. One of the primary goals the company has set itself is to explain to the local inhabitants about the importance of recycling. And this has proven to be a fun way of doing this – combining information with many great events. There was also much interest in the photo story “I’m just cleaning up here” put together by the Polish photographer, Tomasz Lazar. He spent time with REMONDIS’ employees documenting their day-to-day work and then put on an exhibition which proved popular among tourists and local residents alike.

REMONDIS is well known for the support it has given many local social and cultural initiatives in Stettin over the years. In 2017, the company won first prize in a prestigious competition when it was named “Stettin Employer of the Year 2017” in the category, “Corporate Business Responsibility”.



Switch to recycled raw materials now!

TSR INVITES GUESTS TO ITS PARLIAMENTARY EVENING

This was the message that TSR Recycling and Scholz Recycling GmbH chose for their first joint Parliamentary Evening which was held in Berlin at the beginning of November. Their goal: to make politicians, industrial leaders and associations more aware of the urgent need to use recycled raw materials.

Demand for raw materials is growing. The world's population is expected to have exceeded the 10 billion mark by 2050 with per-capita raw material consumption increasing at an exponential rate. That's the one side of the coin. On the other, we have our finite supplies of natural resources. This development is already having a huge impact on our environment: massive scars on our landscape and higher energy consumption are the high price we have to pay to extract and process raw materials. Which means we all have an obligation to handle natural resources more responsibly.

"This obligation can only be met with systematic recycling," explained Bernd Fleschenberg, managing director at TSR, and Dr Klaus Hauschulte, CEO of Scholz Recycling. United in their cause, these two managing directors made the most of this event – which took place under the patronage of German MP Dr Matthias Heider (CDU) – to make all those attending more aware of the responsibility society has when it comes to recycling. The guests: politicians, business leaders and representatives of trade associations. TSR and Scholz called for three concrete measures to promote the responsible handling of raw materials. "As far as politics is concerned, we believe there is a need for a national council that has the powers to create an economic and statutory framework to promote the use of recycled raw materials," Bernd Fleschenberg continued. In addition, both CEOs called for the EU's Ecodesign Directive to be extended to include the subject of recyclability. At the moment, the regulations set out in the directive are, for the most part, limited to the energy efficiency of individual products. "If the requirements of a modern recycling industry are to be met, then products must be designed so that preferably all of the

raw materials in the product can be recovered and fully recycled," Bernd Fleschenberg said. Both TSR and Scholz are of the opinion that a think tank must be set up if this is to be achieved – a kind of round table that enables key players from the worlds of industry, science and recycling to put their heads together and come up with joint solutions.



TSR
THE METAL COMPANY

SCHOLZ
Recycling. Resources. Responsibility.

Working together to promote recycling: Bernd Fleschenberg (Managing Director of TSR Recycling, far left) and Norbert Rethmann (Honorary Chairman of the Supervisory Board of the REMONDIS Group, far right) together with their fellow campaigners Dr Heider, Dr Hauschulte and H. Wilms

The speech provided much food for thought as could be seen in the podium discussion that followed: politicians, business leaders and trade association members exchanged views on how Germany's current raw materials strategy could be amended to ensure much greater volumes of recycled raw materials were used in the future. And the discussions continued during the get-together afterwards. With this evening proving to be such a success, a similar function has already been organised for January 2019. It was clear that Bernd Fleschenberg is looking forward to the upcoming event: "Federal Minister of the Environment Svenja Schulze has already agreed to take part in the podium discussion."

"As far as politics is concerned, we believe there is a need for a national council that has the powers to create an economic and statutory framework to promote the use of recycled raw materials."

Bernd Fleschenberg, Managing Director at TSR Recycling

(Limited) visions for the future

RECONCILING LIGHTWEIGHT DESIGNS AND RECYCLING – OR NOT

Lightweight construction processes that unite different kinds of technology are driving innovations in many sectors, in particular in the automobile industry. Composite materials make it possible for manufacturers to build high quality vehicle components, their greatest advantage being that they weigh so little. There is no arguing the fact that these materials have a positive impact as they reduce both fuel consumption and carbon emissions. So far, so good. We spoke to Dr Ansgar Fendel, managing director of REMONDIS Assets & Services, to find out to what extent these fibre composites and plastic-metal hybrids can be recycled once they reach the end of their useful lives.

REMONDIS AKTUELL: Do you also think that lightweight construction processes are environmentally friendly technologies?

Dr Fendel: That's an interesting question and there's no one simple answer. The fact is that different makes and models of cars are sent to us for recycling – some much older than others. Each type of vehicle, however, has its own particular mixture of materials. The problem here is that the cars are not sorted by model before they are sent to us; they arrive at our plants all mixed together.

REMONDIS AKTUELL: And it is a well-known fact that the better the materials are sorted, the better they can be recycled.

Dr Fendel: Absolutely and the same is true for industrial recycling. It is not economically practicable to recover the different materials from the scrap vehicles as the volumes of these materials vary so dramatically.

REMONDIS AKTUELL: This problem will probably get worse as the amount of hybrid materials used in cars increases.

Dr Fendel: Exactly. Are you a parent? Then you must have observed the phenomenon that there is a natural tendency for everything to move towards disorder. Energy is needed, however, to create order again. And the same is true when it comes to recycling vehicles. Entropy is showing us where the natural limits to recycling are.

REMONDIS AKTUELL: So, in reality, it's not actually possible to get to the continuous fibres?

Dr Fendel: It's possible to get to them but it's not economically practicable to recycle them. Take a look at conventional recycling systems. You're sent a large volume of materials which undergoes a number of stages to separate the different substances. The materials are cut up, separated from each other using magnets, sorted according to colour and so on. There are no continuous fibres left over at the end.

REMONDIS AKTUELL: So lightweight components are not ready for the circular economy then?

Dr Fendel: These lightweight components are showing us exactly where our limitations are and we haven't been able to find a good solution to this problem yet. We know from Der Grüne Punkt, for example, that the different types of plastic can only be recycled if they have been sorted according to type beforehand and have a purity level of over 90%. The vehicles, however, not only contain plastics but also foam material, wood, pieces of metal and steel-aluminium compounds that are not so easy to separate from each other. In other words: realistically, composite materials can only be recycled if they are made of large parts that can be easily sorted. It would sound more than a little naive though to ask this of manufacturers.

REMONDIS AKTUELL: That sounds as though we must give up, almost as if we must forget the whole idea of a circular economy.

Dr Fendel: No, not at all. We are currently working on some interesting processes that should help us to cope with the increasing heterogeneity of waste streams. One approach, for example, is to break materials down to their atoms so that they can be separated according to type and reused as raw materials. Or look at metals: we can already sort metals according to their particular alloy.

REMONDIS AKTUELL: Progress may be being made with recycling metal alloys but there is still a problem with carbon fibre reinforced polymers or CFRPs. What's the situation with fibreglass-reinforced plastics?

Dr Fendel: We need to be concerned about this material as well. Fibreglass-reinforced plastics have been around for a long while now and yet I've never heard of a process able to recycle GFRPs. It makes you wonder what will happen when the blades on all those wind turbines need replacing.

REMONDIS AKTUELL: The EC Directive on end-of-life vehicles stipulates that 85% of a vehicle must be recycled or reused. Is it going to get more difficult to meet this high recycling rate?

Dr Fendel: Yes, it certainly is. We're not going to be able to achieve this recycling rate in the long run. One of the problems, however, is in the wording of the directive. It says that information must be provided about the recyclability of a vehicle not whether it is actually possible to recycle it at the end.

REMONDIS AKTUELL: It'll probably get more and more difficult to separate different substances from each other. There is a clear trend towards reducing a number of different components into just one component, integrating functions so to speak.

Dr Fendel: No matter where you look, different functions are being integrated all the time. This leads to an even greater mixture of materials and to miniaturisation, i.e. very different substances in the smallest of spaces. In some cases, the components are so compact that it's no longer possible to identify the different compounds. Fortunately, though, the automobile industry is taking this problem seriously. If everyone has the same goal then it should, in principle, make it easier to achieve.

REMONDIS AKTUELL: Dr Fendel, many thanks for the interview.



"These lightweight components are showing us exactly where our limitations are and we haven't been able to find a good solution to this problem yet."

Dr Ansgar Fendel, Managing Director of REMONDIS Assets & Services



Closing the gypsum life cycle

RECYCLING FACILITY IN ZWEIBRÜCKEN GEARS UP FOR THE IMPACT OF THE ENERGY SWITCH

CASEA

WORKING FOR THE FUTURE

Gypsum. Finding ways to recycle this white mineral so that it can be reused will play an ever more important role in the future, as Germany moves away from producing energy from coal and gradually closes down its coal-fired power stations – the recycling sector’s most important source of gypsum. Bad news for the construction sector as gypsum can be found in wall plaster, screed and roof tiles as well as in stud walls made with gypsum plasterboard. More than 230 square kilometres of plasterboard are produced in Germany every year. All in all, the annual demand for calcium sulphate raw materials lies at around 9.5 million tonnes, in particular from the plaster and cement industries.

In 2030, just 30% of gypsum requirements will, in all likelihood, be covered by FGD gypsum

There will be a huge gap in the market once the gypsum from flue gas desulphurisation systems – known as FGD gypsum – can no longer be supplied as a by-product of the chemical process at power stations. In 2010, more than half of all gypsum requirements was covered by FGD gypsum; this figure is expected to have fallen to just 30% by 2030. At the same time, the volume of waste plasterboard is steadily growing. According to a study published by the UBA [Federal Environment Agency], around 280,000 tonnes of this material were discarded in Germany in 2015. Experts believe this figure will have increased to up to 670,000 tonnes by 2030. The situation is being aggravated by the fact that only a fraction of these discarded gypsum-based products are actually being recycled – around seven percent in 2015. Landfill space for this material is also getting scarce. Over the short to medium term, there will be bottlenecks at landfills for category 0 and I substances and there will be less space at mines for depositing this material. The situation can only get worse.

Both a blessing and a curse

REMONDIS believes that these growing volumes of waste plasterboard could present a great opportunity as it gradually becomes more and more difficult to obtain gypsum. Leading manufacturers of gypsum-based products, including REMONDIS’ sister company CASEA GmbH (experts for both natural and FGD gypsum), are looking at alternative ways to get hold of supplies once FGD gypsum is no longer available to the market. One solution is to extend or reopen old quarries so that more natural gypsum can be mined. In Germany, the majority of this resource can be found in the Harz region, in the so-called gypsum karst belt. Mining natural gypsum, however, is still impacting on the environment. One of REMONDIS’ principles is to find and implement solutions that help curb global warming and conserve natural resources. The UBA is also calling for concrete measures that will provide an environmentally friendly solution to this problem.

Waste gypsum from construction & demolition work



Recycling in our stationary treatment plant



Recycled gypsum products for the plaster & cement industries



Every year, the plant in
Zweibrücken produces

72,000t



of pure gypsum that can be directly
reused by industrial businesses



The plant in Zweibrücken was just right for setting up a gypsum recycling facility

The declared goal here is to gradually increase the amount of recycled gypsum used in production chains – both to preserve natural resources and to push forward recycling in this area so that the gypsum can be reused. Reuse is the best form of recycling and this is not a problem for gypsum as our recycling process does not change the raw material in any way whatsoever.

REMONDIS itself offers a sustainable and environmentally friendly solution: every year, its business in Zweibrücken transforms plasterboard and moulded plaster into up to 72,000 tonnes of pure gypsum that can be directly reused by industrial businesses. The facility, which had previously been home to a waste sorting plant until 2009, is one of just four across the whole of Germany – one reason why it is not possible to make the most of the waste plasterboard generated each year. The advantages of this process are obvious. Natural gypsum supplies can be conserved and carbon emissions are also reduced. Free landfill space can be used for materials that really cannot be recycled for reuse. The system that REMONDIS uses makes the very most of the gypsum as the gypsum retains its physical and chemical properties so that it can be recycled endlessly.

Efficiently using residual materials

The facility is run by REMONDIS GmbH & Co. KG, Region Südwest [South-West division], which had been issued a permit to build a production plant back in March 2017. It is currently being trialled and will, in the future, be able to process plasterboard from a large catchment area.

Once the incoming material has been pre-sorted, it is processed into high quality recycled gypsum in a number of steps. The final product, which has official end-of-waste status, stands out thanks to its high level of purity, its low moisture content and the fact that its grain size can be adjusted to meet specific customer requirements. The recycled gypsum can be used by the plaster and cement industries for a whole variety of applications and can be used straight away – further processing is not necessary. Besides recovering the gypsum, the paper can also be extracted from the plasterboard and recycled for reuse in the paper industry. By doing so, REMONDIS has succeeded in closing two different material life cycles.

REMONDIS has built a facility in Zweibrücken that unites the components of different plant suppliers to create a new concept. The state-of-the-art technology ensures that the stringent quality standards set by the Bundesverband der Gipsindustrie [German Gypsum Association] are met at all times.

Top quality recycling will
be taking place in Zwei-
brücken in the future



More sustainability

MEYER WERFT SETS THE BENCHMARK FOR ENVIRONMENTALLY FRIENDLY SHIPBUILDING – NOT LEAST BECAUSE OF THE SERVICES PROVIDED BY REMONDIS

Environmentalists have gradually been increasing their criticism of the cruise industry over the last few years. For the most part, their focus is on the exhaust emissions from the ships' diesel engines and the resulting air pollution in the ports. Meyer Werft unveiled a pioneering solution to this problem in Papenburg this November when it presented its very first gas-fuelled cruise ship. This is not, however, the only step that the shipyard has taken to grow sustainability and environmental protection at its business. If you take a look behind the scenes at Germany's biggest shipbuilders, you will find a comprehensive code of conduct that sets clear sustainability rules that apply to everyone – from its management team all the way through to its suppliers, including REMONDIS Industrie Service GmbH.



Meyer Werft is well known all around the world for its shipbuilding skills and its ability to build highly complex boats, in particular cruise ships. The world's largest shipbuilding hall is in Papenburg – 504 metres long and 125 metres wide. Every ship that leaves this hall has been put together using the so-called "block-building system". Up to 90 individual blocks are pre-fabricated and gradually assembled,

creating a complicated chain of separate processes that need to be perfectly coordinated both in-house and with external partners. 3,450 employees and numerous suppliers and service providers work together hand in hand. This not only gives the company a competitive edge, it also reduces carbon emissions and the consumption of resources.



It is simply not possible to build ships without handling environmentally hazardous substances. They are essential for protecting the boats



The biggest challenge: the launching of a ship is planned to the minute – everything has to go exactly as scheduled

Despite all the company's efforts, however, it is simply not possible to build ships without having to handle environmentally hazardous substances. Paints, solvents and fats are all needed to protect the ships. Which means, of course, that hazardous waste is produced such as paint sludge, used solvents and fatty or oily liquids. While they may only make up eight percent of all the waste produced by the shipyard, they are high on the list of priorities of this environmentally conscious firm because of the harm they could potentially cause. And this is the reason why Meyer Werft has been working together with REMONDIS Industrie Service since last year, choosing to collaborate with a reliable partner who is able to safely manage and recycle or dispose of hazardous substances.

The majority of the residual material that REMONDIS Industrie Service GmbH picks up from Meyer Werft is oily wastewater from the docks or the ships' hulls. This collaboration work with Meyer Werft is also a completely new experience for REMONDIS' branch in Melle, as timing is everything. The biggest challenge here is to ensure that the delivery of these "floating cities" is not delayed. The schedule for sending a ship down the Ems river to the North Sea is planned to the minute. The date the ship is launched depends on a number of factors – in particular on the weather and the water level of the Ems. The company has to stick to a narrow time frame. Work is carried out on the ship right up to the very last moment, which means that a range of different waste materials is also generated. A logistical feat for REMONDIS' employees as both the staff and vehicles have to be available whenever they are needed, also at the weekend. The work at Meyer Werft has to be carried out ad hoc. Failure to provide the services needed would have disastrous consequences.

In September, just a few hours before the gas-fuelled AIDA Nova was due to be launched, REMONDIS' team drove six tankers to the quay to remove the remaining wastewater from the ship – hard work but a great experience at the same time. "Thanks to our company's infrastructure, we're able to provide such specialist services. We're really pleased as it means we are able to serve the shipbuilding industry in the south of Lower Saxony as well," commented Günter Pieperjohanns, REMONDIS Industrie Service Bramsche. It is not without reason that Meyer Werft is considered to be one of the cleanest and most environmentally friendly shipyards in Europe. By processing the company's wastewater and transforming its paint and coating waste into RDF and recycled metal, REMONDIS is helping the shipyard to maintain its exemplary recycling rate of 95%.

Two of RIS' subsidiaries have also been commissioned by Meyer Werft to carry out work at the shipyard: REMONDIS AS-CONTROL to service its fat and oil separators and REMONDIS Medison to handle any healthcare waste produced by the company's doctor

3,450 

employees and numerous suppliers and service providers work together hand in hand on every ship. This not only gives the company a competitive edge, it also reduces carbon emissions and the consumption of resources

Green City: Frankfurt invests in alternative energy

FES' SUBSIDIARY RMB AND ENERGY PROVIDER MAINOVA SUPPLY FRANKFURT WITH BIOGAS PRODUCED FROM MUNICIPAL ORGANIC WASTE



It is becoming an ever greater challenge for large German cities to coordinate, transport and sustainably recycle their volumes of waste. This is also true for Frankfurt am Main where the approx. 400,000 households discard 25,000 tonnes of organic waste into their organic bins every year. This major city – an international finance and exhibition centre that has to cope with roads clogged with traffic and the highest number of commuters in Germany – sees this recycling opportunity as a way to improve their environmental footprint.

Which was why an anaerobic digester was built in Frankfurt's Eastern Harbour district (just a few kilometres from the city centre) to treat organic waste back in the 90s. Since then, the facility has been run by FES' subsidiary, RMB Rhein-Main Biokompost GmbH. FES is a joint venture between the City of Frankfurt (51%) and REMONDIS (49%).

Orange peel, coffee filters and leftover food mixed with garden waste and leaves. This is the mixture of materials that FES' refuse collection lorries take to the organic waste treatment facility

The recycling chain for this material stream has now been perfected: not only has the capacity of the digester plant been extended so that it can now process 60,000 tonnes a year, the Frankfurt-based energy supplier, Mainova, has also built a biogas processing facility on the site. Since the beginning of 2018, the raw biogas generated from processing the organic waste has been transformed into pure biogas, which is being fed into the gas network and supplied to the households. What's more, Frankfurt now has one of the most modern digesters for organic waste in Europe.

Orange peel, coffee filters and leftover food mixed with garden waste and leaves. This is the mixture of materials that FES' refuse collection lorries take to the organic waste treatment facility. This strong-smelling mixture is a source of renewable energy – a source that is unlikely to ever dry up. At the end of the process, this material has been transformed into high-quality, climate-neutral biogas. The heterogeneous biomass, however, has to go through a number of complex stages before this can happen. First it is cut up in the shredder. The conveyor belts then transport the material to a large mixing tank in which huge rollers blend the waste. Following this, water is added to create a thick mass made up of 70% water and 30% dry matter. "We never use fresh water, though – only process water that we keep in the system by catching and condensing it," explained Peter Dumin, plant manager at RMB.



“By transforming organic waste into natural gas, we are helping to push forward both environmental protection and the energy switch in our region.”

Aloys Oechtering, Managing Director of RMB

Once these different stages have been completed, the feedstock is then pumped into two digesters. The digestion process is activated with the help of special bacteria which multiply rapidly at a temperature of 60°C. The raw biogas generated from this process, however, does not yet fulfil the quality required for the gas supply network. And this is where Mainova’s treatment plant comes into play. It uses a multi-stage procedure to clean and process the raw biogas and turn it into bio natural gas. The facility, which is currently being tested, can transform almost 600 cubic metres of raw biogas into green natural gas every hour. Once it is up and running normally, it will be able to produce this environmentally friendly fuel non-stop, i.e. 24 hours a day, 365 days a year. Over the long-term, Mainova and RMB are expecting to produce up to 30,000 megawatt hours of high

quality biogas every year. An amount that will be able to cover the requirements of around 1,500 households.

“By transforming organic waste into natural gas, we are helping to push forward both environmental protection and the energy switch in our region. Thanks to the extension work carried out at the plant, this more sustainable form of recycling has also become more interesting from an economic point of view,” commented Aloys Oechtering, managing director of RMB and the manager responsible for biomass and bioenergy at REMONDIS. He is really pleased with the way the business has developed. It is, he says, an excellent project that clearly demonstrates how the creation of partnerships – for example with local energy providers – can ensure the very most is made of a region’s resources.



Redooo – a digital recycling network

THE NEW B2B PLATFORM REDOOO IS A QUICK AND EFFICIENT TOOL FOR ALL COMPANIES LOOKING FOR OR OFFERING RECYCLING SERVICES

The circular economy is an industry that is pretty much down-home. Bins and containers need to be supplied, waste has to be collected and transported to treatment facilities where the raw materials are recovered and recycled. Non-recyclable materials have to be transformed into energy and any residual substances disposed of. None of this can be described as “rocket science” in the world of high technology. And yet a technical revolution is looming in this business as well – namely a digital revolution.

It was simply a question of time as to when the digital processes would find their way into the recycling sector. Digital platforms offering a quick and simple way for customers and service providers to come together have been used in other industries for a good while now. They have revolutionised the way people and companies do business with one another. The first steps have now been taken in the recycling sector as well. There are two types of platform here: recycling platforms for the classic waste management business for both B2C and B2B and platforms that act as marketplaces for selling recycled raw materials such as paper, plastic film and metal.

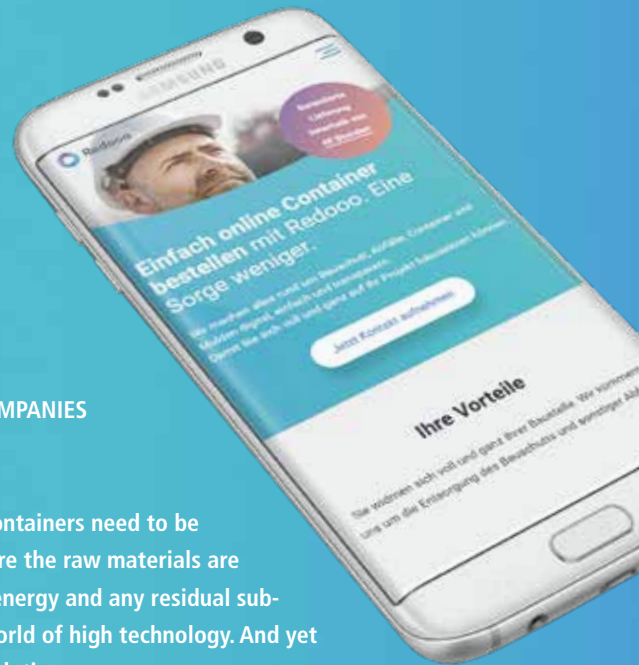
Digital platforms will gradually take over the task of organising the network of suppliers and customers. One of the biggest advantages of such digital marketplaces is that they can, theoretically, give an unlimited number of customers real-time access to a large selection of products and services. And this is where Redooo comes into play. This new digital app covers the whole acquisition process – from the invitation to bid, all the way through to the billing stage. There are no complicated websites to look through which means people do not have to spend time searching around for what they want. The automated processes guarantee impartiality and there is great potential here to grow efficiency as the customers looking for a specific service are directed straight to the companies able to provide it.

Customer enquiries are dealt with on the platform as on a marketplace. The company that acts the fastest gets the job. This means greater flexibility for the customers – they get their skip or service delivered on the exact day they need it.

The customer really benefits here as it is demand that determines the business, not the offerings of the individual providers. Redooo is absolutely impartial throughout. Customer enquiries are sent to all of Redooo’s partners at the same time and with the same conditions. Which means it is not one particular service provider that wins but the business which is the fastest and most cost-effective.

The advantages for the partner firms are obvious. There is no registration fee and no costs whatsoever for the acquisition. The digital processes mean less work and fewer costs and can help ensure that vehicles, drivers and skips are deployed more efficiently. What’s more, there is no danger of companies not getting the money owed to them as Redooo handles the payment with the customers. Redooo’s partners are sent an automatically generated credit note by email as soon as the service has been provided and confirmation sent via the app. This quick digital process creates a win-win situation for Redooo’s customers and partners alike.

The project is developing really well. The system currently works as a B2C service app but this will soon be extended to include B2B business with its own customer portal. Redooo has also gone international. The app has been available in Turkey since 01 September. Preparations are underway for it to be activated in other countries as well.



“Having the private sector help provide public services is a must”

A COLLABORATIVE PROJECT BETWEEN PROF. MICHAEL SCHÄFER AND LUDGER RETHMANN AIMS TO PROMOTE A CULTURE OF PPPS

Prof. Michael Schäfer is well known for his belief that the public sector should provide the services its local inhabitants need – especially essential public services. He and Ludger Rethmann have now got together to write a book on the subject of public private partnerships (PPPs). This project will use examples to show how public and private sector companies can work together successfully. According to Prof. Schäfer, who specialises in public sector economics, PPPs are by no means a long list of flops and failures. In the following interview, he explains why he is now striking up a friendship with the private sector.

Have you changed your opinion about whether the private sector should provide public services or not?

Prof. Schäfer: Having the private sector help provide public services is a must. Joint venture businesses owned by both public and private sector companies play a major role here. I would always argue that the local authorities should have a majority share in any joint venture, i.e. at least 51%. This has always been my opinion ever since I began thinking about this issue. The principle behind this train of thought is that whoever is responsible for the services – and this is always the local authorities – should also have a say in how the services are provided.

What role will the private sector play then in providing public services over the long term?

Prof. Schäfer: The list of public sector services that need to be provided is dynamic. The new services being added to the list, such as supplying broadband, requires specialist levels of know-how. Such requirements can be found across the board – from energy, to waste management, to water. If public sector companies wish to retain their trademark of being close to their local inhabitants – and this will become ever more important as digitisation increases – then they will have to considerably step up their collaboration work. Among each other, just as with the private sector. For the most part, the private sector has very high levels of specialist know-how which is essential to be able to provide high quality public services. Public sector companies – especially the smaller ones – generally don't have full access to such expertise. For example, I simply cannot picture the public sector being able to create a perfect circular economy without having public private partnerships.

What do you hope this collaborative book will achieve over the long term?

Prof. Schäfer: Public sector companies exist in a world shaped and characterised by private ownership. Which is why having the public and private sectors working together is an objective requirement. This, in turn, means everyone has to take off their ideological blinkers. If the different parties' interests can be balanced out to create mutual advantages and if transparency is maintained at all levels and at all times, then cooperation work between the two sectors can be beneficial for both sides – and last for a very long period of time. This needs to be discussed pragmatically and objectively. We wish to promote such a culture.

PROF. MICHAEL SCHÄFER

Professor Michael Schäfer was born in Weimar in 1952 and taught Public Sector Economics at the Eberswalde University for Sustainable Development until 2018. He set up the first and only MSc course in Public Sector Economics in Germany.



He is also the publisher of the magazine, UNTERNEHMERIN KOMMUNE [Entrepreneurship in local authorities], and wrote the first ever standard reference book in Germany for public sector economics.

First ever 'Belarus Days' in North Rhine-Westphalia

FOCUS ON STRENGTHENING BUSINESS TIES BETWEEN GERMANY AND BELARUS

The first 'Belarus Days' ever to take place in the German state of North Rhine-Westphalia were held recently at REMONDIS' Lippe Plant. The lifting of economic sanctions on Belarus three years ago has triggered a dynamic development in the economic relations between Germany and Belarus. The country is now once again being seen as an interesting business location – with an ever growing number of German businesses recognising its potential and investing in its market. Both the increasing volumes of German exports and the country's ideal position, situated between the EU and Russia, are paving the way for further successful cooperation projects.

Egbert Tölle, board member of REMONDIS SE & Co. KG, welcomed around 60 business leaders and politicians from Belarus and Germany to the Lippe Plant in Lünen as part of a special two-day conference. REMONDIS was one of the organisers of the event alongside the OAOEV [German Eastern Business Association], the Deutsch-Belarussischer Unternehmerrat [German Belarusian business council], the Belarusian Embassy in Germany and the Dortmund Chamber of Industry and Commerce.

60 business leaders and politicians from Belarus and Germany visited the Lippe Plant in Lünen



The joint venture between REMONDIS and the City of Minsk, which was established back in 2010, is a good example of the country's determination to improve its ecological footprint – moving away from simply landfilling waste towards a more resource and environmentally friendly system of recovering and recycling materials. "It's given us great pleasure to be able to offer our extensive recycling services to the one million or so people living in the capital Minsk for almost a decade now. Significant progress has been made during this time both in conserving natural resources and helping to curb climate change," Egbert Tölle said during his welcome speech.

Denis Sidorenko, Belarusian Ambassador to Germany, also took the time to praise German-Belarusian business relations such as this joint venture and to stress the importance of the 'Belarus Days' event, seeing it as a milestone for new collaboration opportunities. Indeed, it has already paved the way for new projects. REMONDIS has been commissioned with the task of setting up a modern waste management system in Soligorsk to increase recycling rates and reduce the volumes of material being sent to landfill. This project will include building treatment plants for bulky waste, organic waste and construction waste as well as modernising the town's current sorting facility.

Other plans involve establishing a nationwide deposit return scheme for single-use drinks bottles and cans in Belarus, which should be up and running by 2020. REMONDIS will be helping the future systems operator by planning both the logistics, clearing and counting system as well as the services needed to market the recyclables. Thanks to its operations in Belarus, the company is helping to close material life cycles and promote an innovative circular economy across the country.

Heinz-Herbert Dustmann, President of the Dortmund Chamber of Industry and Commerce, described Belarus as being a partner for the future



Core business: sustainability

RETA STASSFURT ACCREDITED IN LINE WITH THE SUSTAINABILITY CODE

An EU directive came into force in 2017 that makes it obligatory for listed companies with more than 500 employees to disclose non-financial information about their operations – the so-called Corporate Social Responsibility or CSR Directive. At the same time, it is becoming increasingly important for SMEs to voluntarily publish reports about their sustainability performance. No matter whether a business manufactures products or provides services, partners, customers and suppliers all expect the highest possible levels of transparency and to be able to see proof that sustainability criteria are being fulfilled. Which is why REMONDIS Thermische Abfallverwertung (also known as RETA) in Staßfurt recently had their operations reviewed in line with the Sustainability Code.

REMONDIS Thermische Abfallverwertung GmbH in Staßfurt generates electricity and steam from waste. The electricity produced is fed into the grid and used to cover the plant's own requirements. In addition, steam is supplied to the neighbouring soda works as process steam. By combining heat and power, the plant makes the very most of the energy contained in the waste. As efficiency and sustainability are both key criteria at EfW plants, RETA Staßfurt decided to take part in the Sustainability Code project, an initiative of the ITAD [Association of Thermal Waste Treatment Plants in Germany]. The Sustainability Code was developed by the German Council for Sustainable Development (RNE) and contains 20 criteria for an accredited, efficient and high quality sustainability reporting process.

As part of its application, RETA Staßfurt had to complete a declaration of conformity and have two employees trained to become sustainability officers specialising in the thermal treatment of waste.

The process was accompanied throughout by the IfN, an institute in Münster offering sustainability training. The Sustainability Code, however, not only takes a detailed look at environmental issues. It also contains equally important criteria such as equal opportunities, employment and human rights, compliance regulations, political influence, sustainable development responsibilities and the depth of the value chain. With sustainability being at the very heart of RETA Staßfurt's corporate philosophy, it scored points across all areas of its business.

"We soon realised that we already run a very sustainable business," explained Dr Jörg von Smuda, managing director of RETA Staßfurt, who had initiated and accompanied the accreditation process. "Our task is, therefore, to communicate this to others. The Sustainability Code is a useful way to do this," Dr von Smuda continued.



The declaration of conformity issued by the Sustainability Code can be viewed online on the RNE's website. The results can also be found on RETA Staßfurt's website where they are displayed in a so-called 'sustainability calling card', which provides a clear and simple explanation of the process

"We soon realised that we already run a very sustainable business."

Dr Jörg von Smuda, Managing Director RETA Staßfurt



In rough seas

BUCHEN often find themselves working in difficult conditions when they are called out to clean their customers' tanks and containers. Few environments, however, have been as challenging as the one they experienced just recently – an oil rig in the Arctic Ocean. BUCHEN recently carried out a project for the Russian firm Gazprom that involved it cleaning a number of storage tanks on the Prirazlomnoye oil rig, the world's only offshore project producing oil in the Arctic Ocean.



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The Prirazlomnoye platform is located in the far north – in the Pechora Sea on the Arctic Shelf. Here, in the north west of Russia, the sea is covered in ice for seven months of the year. It goes without saying that a very special kind of rig is needed to drill oil in this environment as it has to cope with two-metre-high ice ridges, temperatures falling to minus 40°C and waves reaching ten metres high. Developed specifically for the Arctic Ocean, Prirazlomnoye is able to withstand both extreme weather conditions and maximum ice loads. This platform, which enables oil to be extracted in such a harsh environment, is one of a kind.



Thanks to the way the oil rig has been built, it can withstand extreme weather conditions and maximum ice loads

A number of storage tanks on Prirazlomnoye had to be cleaned in both 2017 and 2018 – a case for the BUCHEN specialists. Working on behalf of their client, Gazprom Neft Shelf, they cleaned three offshore tanks used for storing drilling fluid, drilling mud and brine and able to hold up to 490m³. The first step involved the team removing any deposits from the tanks. Once this had been completed, they then set about cleaning the inside walls with high pressure water jets. There were two main reasons why BUCHEN had been commissioned to carry out the work: its experience (having completed similar projects for companies operating in the Russian energy sector) and its ability to pump out sediment from tanks up to 30 metres deep.

The Russian oil rig, Prirazlomnoye, is the world's only offshore project producing oil in the Arctic Ocean



Safety at sea: all of the BUCHEN employees working on the project had first taken part in a special offshore course



Working in the tightest of spaces

Offshore rigs are certainly considered to be the most difficult of all working environments when it comes to producing oil – especially when they are in the Arctic. Cleaning tanks on an oil rig is also a huge challenge. Well aware of this, BUCHEN had to first meticulously plan the project before it could send in its team. Despite Prirazlomnoye being a very large platform, there is in fact very little room available.

From a practical point of view, this not only meant that the work had to be performed in confined surroundings but also that there was only limited space available for positioning and storing the technical equipment. This equipment was supplied by BUCHEN's Russian branch in Ufa and transported by ship to the rig where it was stored in stackable containers.

Special offshore qualifications

BUCHEN initially sent in a team of twelve and later 18 operatives to carry out the work. Flown in by helicopter, the BUCHEN employees stayed in the platform's residential module throughout the project. All of the team members had special maritime skills as well as their professional qualifications. Each and every one of them had taken part in a special offshore course beforehand that focused on safety at sea and involved both theoretical and hands-on training. Having completed the course and been presented with the relevant certificate, these BUCHEN employees can now be deployed to offshore projects all around the world. Thanks to these qualifications and the work they performed on the Prirazlomnoye platform, they have a level of expertise that is hard to match.

Heading towards the future

HOW XERVON INSTANDHALTUNG IS USING INNOVATIVE TECHNOLOGIES TO HELP THEIR CUSTOMERS

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Smart factories, the Internet of Things, artificial intelligence: industrial manufacturing is heading towards the fourth revolution or Industry 4.0. Digitisation and automation are becoming ever more important – also in the areas of service and maintenance. Which is why XERVON Instandhaltung, XERVON's maintenance specialists, is adding forward-looking technologies to its portfolio of services. Its goal: to save time and money and further improve quality and safety by optimising processes.

XERVON Instandhaltung specialises in servicing, maintaining and overhauling production facilities and plant components

Just as is the case with manufacturing, there have been a number of fundamental innovations in the maintenance sector that make it possible to further improve processes and advance the industry. Digitisation has provided the basis for this progress. The next stage is for companies to adapt these new processes and tools to their customers' and their own individual requirements so they can be added to their portfolio. XERVON Instandhaltung has been focusing on new technologies that primarily benefit their customers. Digital solutions, new communication systems and web-based processes all play a central role here.

Greater depth of information thanks to smart glasses

No matter how big or how small a maintenance project may be, it is always complex – often with very tight schedules, a large number of people involved and many interconnected tasks. Just how successful such projects are often depends on how quickly information can be passed on. Mobile communication devices such as smartphones, tablets and laptops have been in use for a long while now. XERVON Instandhaltung recently began testing smart glasses as it believes they can offer some additional benefits. As these glasses transmit information via audio and video stream, the operatives can send images from wherever they are working in real time. Any questions they may have can be quickly clarified by talking to their colleagues and/or their client. A further advantage: as this is wearable technology, the employees have both hands free to do their work while communicating with their colleagues.



Robotic systems are already being used on the ground, such as the AIC robot for automated high pressure water jet cleaning work



Thanks to smart glasses, sound and images can be transmitted straight from the workplace



Real-time communication allows questions to be clarified quickly

Rapid completion with electronic feedback tools

Maintenance projects involve a chain of processes, with each stage needing a number of different tasks. In the past, the employees had to make their way back to a central point to pass on the information that their work had been completed. Nowadays, XERVON Instandhaltung's operatives can use digital devices to provide feedback from wherever they may be. This, of course, saves time as they no longer need to walk to the central point. Instead, the completed tasks are fed into the system and everyone involved in the project can access this information immediately. The result: shorter reaction times.

Greater availability of devices thanks to RFID & Co.

XERVON Instandhaltung has an extensive range of high-performance equipment. Digital solutions are used here, too, to ensure these technical resources are managed efficiently as well as to coordinate their use. What's more, the company is also looking at the possibility of using sensor technology, RFID, chips and barcodes. It could make good business sense to use these modern ID systems for inspections and tracking machine parts. If, for example, a facility or parts of facility have to be dismantled so that a number of tasks can be carried out, then ID technology could show exactly where the individual parts were and how far the work had progressed. In addition, it could further improve the interfaces used for everyday tasks so that less time is needed to carry out chains of services.

Digital tools in HR

XERVON Instandhaltung is also making the most of digital tools for staff recruitment and development. The goal here is to find managers and specialists, to train them and to enable them to use new technologies. This, of course, involves knowledge management, documenting the experience and know-how gained and making it available to as many people in the organisation as possible.

And what about robots? Thomas Kramel, managing director of XERVON Instandhaltung, said: "Unlike industrial robotics, our sector requires robots that are very mobile. Indeed they must be as mobile as a human being to be able to perform work at height. Development has only just begun here." Like Industry 4.0, tomorrow's maintenance is a future project that has only just started. How fast it will progress will, in part, depend on what advances are made in general technology.



XERVON's portfolio of digital services includes tasks such as condition monitoring

"Unlike industrial robotics, our sector requires robots that are very mobile. Indeed they must be as mobile as a human being to be able to perform work at height. Development has only just begun here."

Thomas Kramel, Managing Director of XERVON Instandhaltung



New technology for recovering metal

REMUX IS DEVELOPING SMART TECHNOLOGIES TO INCREASE THE VOLUME OF METALS RECOVERED FROM IBA

REMUX®

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What is the best way to recover as many metals as possible from incinerator bottom ash (IBA)? This is a question that recycling specialists across the world have been looking to solve. The answer has been found by REMUX Mineralstoff GmbH, a company belonging to the REMONDIS Group. It is setting new standards with its smart metal recovery technology, MERIT®, that it unveiled just recently.

REMUX is the market leader in both Germany and the Netherlands for processing IBA

MERIT® is a system that has been developed thanks to REMUX's international research and development activities. This innovative technology, whose name derives from the term "metal recovery intelligence", is already being used in a number of REMUX's recycling facilities. The biggest advantage of this process: even the smallest pieces of non-ferrous metal (two to four millimetres in size) can now be filtered out of the IBA. Conventional treatment plants do not recycle these very small particles because they do not have the technology able to do this.

The volumes of non-ferrous metals (such as aluminium and copper) able to be recovered can now be greatly increased thanks to MERIT®. What's more, the system is environmentally friendly and cost effective as it improves the quality of the recovered metals. Not only REMUX's customers benefit. Other recycling businesses can also make the most of this innovative technology via cooperation agreements.



REMEX LINKS ITS INTERNATIONAL LOCATIONS

REMEX is also expanding its activities in Asia. This August, the company's facility in the Malaysian city of Pasir Gudang began processing metals recovered from incinerator bottom ash (IBA). These ferrous and non-ferrous metals are being supplied by REMEX's metal recovery plant in the neighbouring country of Singapore, which was built back in 2015 and processes around 1,600 tonnes of IBA every day.

An international role model in the Netherlands

HEROS Sluiskil B.V., a company situated in the south west of the Netherlands, demonstrates perfectly how the new MERIT® technology can be used. A subsidiary of REMEX-Mineralstoff GmbH, this firm operates Europe's largest IBA treatment plant, handling around 700,000 tonnes of IBA every year.

A modern metal treatment facility was also built at HEROS' site in Sluiskil at the same time the MERIT® technology was introduced. This facility focuses on cleaning and sorting non-ferrous metal concentrate from REMEX's recycling plants so that it can be returned to production cycles and reused. The concentrate travels over an air conveyor containing a number of different sieves so that the non-ferrous metal can be separated into light and heavy metals. The end product: high-purity metal fractions that can be sent straight to foundries for reuse – further processing is not necessary.

The goal: 100% recycling

This is not the first time that REMEX has succeeded in developing the technology it uses to improve metal recovery rates. When producing its quality-assured aggregate (granova®) from IBA, for example, it is able to recover around 90 percent of the ferrous and non-ferrous metals contained in the ash. These metals are then processed so they can be returned to production cycles. The company continues to set itself ambitious targets, as REMEX managing director Michael Stoll explained: "Our overall goal is to operate a system that makes 100% recycling possible – where smart technology enables absolutely all resources to be recovered and reused."

2.5 million tonnes

Every year, REMEX handles more than 2.5 million tonnes of IBA in its recycling plants – a volume equivalent to the household waste generated by ca. 23 million people.



REMEX's series of 3D animations show how the different metals are recovered and processed:



<https://remex-processing.com/technological-competence/>



Good for the climate and still cost effective – the balancing act for the future?

OVER 300 POLITICIANS, SCIENTISTS AND BUSINESS LEADERS ATTEND THIS YEAR'S REMONDIS FORUM

300 guests from the worlds of politics, science and business travelled to the CongressCentrum in Oberhausen to attend the 2018 REMONDIS Forum which had been given the motto: "Resource conservation – responsibility as an economic opportunity".

This year's event focused on the challenges associated with the recycling of resources. How can we protect our climate? Where are we going to get affordable raw materials from in the future? Will these be enough to cover the needs of 10 billion people? It will not just be our planet that will have

to tackle these challenges but each and every local authority, no matter how small their town or district may be. This will involve a delicate balancing act – ensuring they have climate-friendly structures in place while still managing their council operations cost effectively.

Among the guests: Michael Sachs, Managing Director of Spezial- und Bergbau-Servicegesellschaft Lauchhammer, Susan Bandorski, Authorised Signatory of WAL Betrieb, and Bert von Garrel, Managing Director of EnergieSystemeNord (from left to right)



This was the 13th time that the REMONDIS Forum has been held and the second time in North Rhine-Westphalia, the most heavily populated state in Germany. Other venues over the years have included Berlin, Schwerin, Hagen and Cottbus. Oberhausen is the town where Wirtschaftsbetriebe Oberhausen GmbH & Co. KG (WBO) is based – a company which has been running a public private partnership with REMONDIS since 1995. This very successful collaboration offers a number of core services including waste management, street building and cleaning work as well as wastewater, drainage and flood protection services. This city was, therefore, the backdrop for this year's forum which brought together people with a political, business or scientific background to take a closer look at some of these future issues.



Thomas Bergner, a Department Head at the City of Cottbus, Andreas Bankamp, Managing Director of REMONDIS Aqua, and Jörg Lange, a member of the Lausitzer Wasser Supervisory Board, enjoyed their time at the 13th REMONDIS Forum (from left to right)

A number of speeches had been organised which covered both specialist subjects and the current challenges facing our society. The speakers included the Parliamentary State Secretary at the Federal Ministry of Economic Affairs and Energy, Oliver Wittke, who talked about the question: "Is it possible to work cost effectively and conserve resources at the same time?". In his speech "City 4.0: PPPs as a motor for creating climate-friendly cities", Burkhard Ulrich Drescher, former mayor of Oberhausen and managing director of Innovation City GmbH, stressed the importance of having strong collaborations between the public and private sectors to ensure that operations were transparent and that all the services needed could be delivered.

The final speech, held by 20-year-old Felix Flinkbeiner, was one that was both inspiring and motivating. He had been awarded the Bundesverdienstkreuz [The Order of Merit of the Federal Republic of Germany] by the Federal President Dr Frank-Walter Steinmeier earlier this year for his work as the founder of the youth initiative, Plant for the Planet. The goal of this initiative is to make people – in particular children and young adults – more aware of global justice and climate change. In his speech "Why we need a trillion trees", Felix Flinkbeiner underlined his message to society, explaining why people must play an active role in trying to stop climate change.

Prof. Ottmar Edenhofer, chief economist at the Potsdam Institute for Climate Impact Research, spoke about the challenges of the current climate policies. Prof. Christian Berg, a sustainability expert and member of the steering committee of The Club of Rome, took a look at the relationship between sustainability and innovation in his talk entitled "Sustainability – an opportunity for innovation and optimisation".



The guests were fascinated by Felix Flinkbeiner's passionate speech

REMONDIS opens a pilot plant for its TetraPhos® process in Elverlingsen

GERMAN MP MICHAEL THEWS (SPD) A GUEST SPEAKER AT THE OPENING CEREMONY



At the end of October, REMONDIS Aqua Stoffstrom GmbH & Co. KG officially opened their TetraPhos® pilot facility on the grounds of WFA Elverlingsen's incineration plant in Werdohl. Around 100 politicians and business leaders were invited to attend the event and take a tour around the facility built on the area that had previously been home to Mark-E's decommissioned coal-fired power station in Werdohl.

Since 2013, REMONDIS has been using a patented process, which it developed itself, to produce phosphoric acid from the ash generated by sewage sludge incineration plants – a cost-effective system which is able to be run on an industrial scale. In 2016, the process won the GreenTec Award, Europe's most prestigious sustainability prize.

Johannes Rimmel, former minister of the environment of the state of North Rhine-Westphalia (NRW) and a member of the NRW parliament, was impressed by REMONDIS' plans: "I can only welcome this pilot project. We need more like it."

WFA Elverlingsen, a joint subsidiary of the Ruhrverband and Mark-E, recycles up to 180,000 tonnes of dried sewage sludge every year. The leftover sewage sludge ash can be used as a valuable raw material for the TetraPhos® process – with the phosphorus content being recovered to produce phosphoric acid (brand name: RePacid®). "By recovering phosphorus, we are actively helping to conserve natural resources and reduce the impact humans have on the environment. Phosphorus is a vital raw material and supplies are becoming increasingly scarce," explained Ralf Czarnecki, managing director of REMONDIS Aqua Stoffstrom. Almost 100% of all phosphate used in Germany has to be imported from abroad. This status quo, however, must have changed by 2029 at the latest. The German government has stipulated that large sewage treatment plants must recover the phosphorus from their sewage sludge ash from this date onwards. REMONDIS has, therefore, taken a big step forward with its facility in Elverlingsen and is acting as a role model for many large German cities

EUROPE'S FIRST INDUSTRIAL-SCALE PHOSPHORUS RECOVERY PLANT

Europe's first industrial-scale phosphorus recovery facility (located on the grounds of the sewage treatment plant in Hamburg) is due to be commissioned in 2020 and will be run as a public private partnership between HAMBURG WASSER (60%) and REMONDIS (40%). It is being supported by the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety (BMU) as well as by the BMU's Environmental Innovation Programme

One of the guests of honour was Michael Thews (SPD), member of the German parliament and vice chairman of the Committee for the Environment, Nature Conservation and Nuclear Safety. During his short speech on "The modern circular economy and resource conservation – using sewage sludge recycling as an example", he praised this new technology, emphasising how it will become increasingly important to recover raw materials in the future.

(from left to right) Michael Thews, German MP, Ralf Czarnecki, REMONDIS Aqua, Katrin Brenner, REMONDIS Aqua, and Johannes Rimmel, a member of the NRW Parliament, during the opening ceremony



Plenty of drinking water despite the drought

RECORD SUMMER TEMPERATURES NOT A PROBLEM FOR REMONDIS AQUA

Cracked soil, trees dropping their leaves early and forest fires across the whole of the country – these were just a few of the consequences of this summer's drought. The plants were also affected badly by the high temperatures and lack of rain, something that was also reflected by the falling groundwater levels. At the same time, demand for drinking water hit a record high. Despite these extraordinary conditions, all of the areas supplied by REMONDIS Aqua had plenty of drinking water throughout the summer months.

Many of the country's utility companies and water associations supplied record volumes of drinking water in June and July. Around 1.81 million cubic metres of water were supplied to the company's customers in the Lausitz region, over 360,000 cubic metres more than the average July figures of the last few years. EURAWASSER Nord GmbH, which is based in Güstrow, reported that peak daily consumption was 30 percent above the yearly average. The waterworks in Graftsch (Rhineland-Palatinate) was, at times, supplying up to 60 percent more water than would be required on a day with normal temperatures. The volumes of drinking water consumed in Schwerin peaked on 25 July: 21,992 cubic metres were needed on that one day. The annual average here is 14,250 cubic metres. Forest fires and other types of fire further exacerbated the situation – demand for drinking water increased everywhere.

Supplies of drinking water, however, were never in danger of drying up in any of the company's regions, stressed REMONDIS Aqua managing director Andreas Bankamp.

Groundwater supplies are well stocked. A very close eye is kept on the drinking water tanks during times of drought to make sure they are always full. At no point were supplies close to being critical. The drinking water is sourced from groundwater that replenishes itself over a very long period of time, for the most part over 50 years previously. Overuse of the groundwater supplies in the aquifers used by REMONDIS Aqua is, therefore, not to be expected, even in long periods of drought.

The managers of the plants and waterworks also kept a very close eye on the water pipes. Regular inspections were carried out to make sure that the increased flow rate and the drying up of the soil did not cause the pipes to crack. This work was well worth its while as the number of burst pipes did not increase during this period.



Peak drinking water consumption was

54 percent

above the annual average this summer

Groundbreaking ceremony in Lünen – UCL continues to grow

UCL

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Umwelt Control Labor is in the process of expanding its premises so that it can continue to meet the demands of the steadily growing market and the productivity and delivery expectations of its customers. Construction work on its building officially began with a groundbreaking ceremony. The company is extending the surface area designated for laboratories by 20 percent which will lead to an improved workflow and use of space. What's more, UCL will also be providing its staff with new and modern workplaces that are fit for the future. These are needed urgently – especially for its expanding air monitoring, consulting and sales departments. In fact, the whole of the REMONDIS Group will benefit from this project: the new extension will also house a multimedia conference and seminar room able to hold up to 60 people.



REMONDIS at the Europe Symposium in Brussels

With raw materials becoming ever scarcer and industrial competition from China steadily growing, a well-functioning circular economy is of fundamental importance if European industry is to remain competitive. With this in mind, the Economic Council (Wirtschaftsrat der CDU e.V.) invited people to Brussels to attend its Europe Symposium on "sustainable industrial policy in the age of industrialisation". Together with Karl-Heinz Florenz, a member of the European Parliament's Committee on the Environment, Klaus Schäfer, board member of Covestro Deutschland, and Fulvia Raffaeli, acting head of the Clean Technologies and Products unit at the European Commission's DG GROW, REMONDIS managing director Herwart Wilms discussed sustainable production from the point of view of the recycling sector.

He explained to both the business leaders and politicians attending the event how important it is to make adjustments along the whole of the industrial production chain to achieve maximum raw material efficiency. Starting at the very beginning with product design. For the most part, the podium speakers agreed that political support was needed here, for example by passing ambitious laws and ensuring that the requirements were enforced. One of the crucial issues for the future will be to see to what extent a consensus can be found among the member states to make such changes to EU law.



From left to right: REMONDIS Managing Director Herwart Wilms discussed how to create a more sustainable industrial policy in these times of dwindling raw materials together with Fulvia Raffaeli, acting head of the Clean Technologies and Products unit at the European Commission's DG GROW, moderator Hendrik Kafsack from FAZ's Brussels office, Klaus Schäfer, Board Member of Covestro Deutschland, and Karl-Heinz Florenz, member of the European Parliament's Committee on the Environment

LWG with its highest ever intake of apprentices

2018 has been a record year for REMONDIS Aqua's subsidiary, LWG Lausitzer Wasser GmbH & Co. KG. This water supplier not only achieved record figures for the amount of drinking water it supplied during the summer, its training centre is also fuller than it has ever been before. 19 young men began their apprenticeship to become a plant mechanic on 01 September as well as one young lady who is training to become an industrial management assistant. A total of 50 young people are currently learning a profession at LWG. Four of the new apprentices are being trained by the Lausitz water company itself. The other 16 have been sent to the training centre by other companies and associations. Many of them have often used LWG's expert and competent training course in the past. "Our course is well known for its high quality which is, of course, the best possible form of advertising for us," commented Reinhard Beer, managing director of LWG. "Thanks to our reputation, more and more new companies are approaching us about our apprenticeship course."



20 young people began their apprenticeship at LWG on 01 September – the highest number ever! (photo: SpreePR/ Petsch)

"Our educational system should focus more on recycling."



On a late summer's day in Mannheim, the children from a day care centre in Ludwigshafen were able to see for themselves that waste does not simply disappear once it has been picked up by the collection truck. Fascinated, they watched the various vehicles and diggers carrying out their work and were surprised at just how loud the plastic mills were. They were wide eyed as they saw the old pipes being transformed into

tiny black pellets, especially when they heard this material could now be used to make new Playmobil figures. "It's great to be able to welcome the kids to our plant. They are our future. At the end of the day, they are the ones we're working for," commented branch manager, Jörg Schwarz. "Our educational system should focus more on recycling. We're happy to help out here," he continued.



Don't just talk, act!

RAINER GENILKE, A MEMBER OF THE STATE PARLIAMENT IN BRANDENBURG, SPENDS TIME WORKING AT REMONDIS

“Don't just talk, act!” – this is what Rainer Genilke, a member of the state parliament in Brandenburg, often says to himself. He regularly spends time working at businesses that have nothing to do with his own job so that he has the facts at his fingertips when he takes part in political debates. And this is the reason why he recently rolled up his sleeves and joined REMONDIS' team in Brandenburg.

Work begins at 6am at REMONDIS' branch in Herzberg in the German state of Brandenburg. This July, Rainer Genilke travelled to the company to spend a day with one of the teams responsible for emptying the bins around the city. His goal here was not to just talk to the employees but to buckle down and do the work himself – to get an insight into just what a back-breaking job the dustbin men carry out around the district of Elbe-Elster every single day.

Throughout the day, Rainer Genilke was able to experience first-hand how the dustbin men had to remain focused at all times to cope with the difficult traffic conditions. Besides these sometimes chaotic driving conditions, he soon realised that emptying bins not only requires physical strength but also high levels of skill and coordination to manoeuvre the special collection vehicles. He also saw what steps he needed to take as a politician having seen for himself the impact of not being allowed to reverse down cul-de-sacs. “We need to think about creating turning areas when making infrastructure decisions,” he pointed out. “The lads have a really hard job. Both in summer and in winter,” he continued, paying tribute to the team of workers. “And they'll have the organic waste bin to deal with from January onwards, as well.”

“I can only pay tribute to the work that REMONDIS carries out on behalf of our waste association – to the way it helps protect our environment and, consequently, our health.”

Rainer Genilke, Member of the State Parliament in Brandenburg

The following day, he then travelled to the wood and plastics sorting facility at REMONDIS' branch in Großbräschen – difficult work for an intern with absolutely no experience of the job. With the items rushing past him on the conveyor belt, he had only seconds to remove the unwanted materials. Good eye-hand coordination is a must here. On top of this, he had to cope with the high temperatures which also made it difficult to keep a cool head. Having experienced this work up close, he was highly impressed by the volumes managed by the company: 30,000 tonnes of household waste, 8,000 tonnes of bulky waste and 10,000 tonnes of paper are handled by the 30 members of staff in Herzberg and the 150 employees in Großbräschen every year. 20 of them are currently doing an apprenticeship and are hoping to be taken on by the firm once they have successfully completed their course. “I can only pay tribute to the work that REMONDIS carries out on behalf of our waste association – to the way it helps protect our environment and, consequently, our health. And all that for a basic charge of less than 30 euros per person per year,” the MP and councillor commented after completing his two-day work experience.

There is one myth that Rainer Genilke would like to clear up. It really does help if people separate their old bottles according to clear, green and brown glass. It is not true that the old bottles are mixed together when the bottle banks are emptied. On the contrary, the contents of each bottle bank are emptied and transported separately. “The vehicles have three different compartments,” he explained.

IMPRESSIONS



◀ REMONDIS Board Member Egbert Tölle welcoming REMONDIS' managers from around the world to this year's Management Meeting in Hamburg



◀ The programme of events included many different speeches as well as a trip to Hamburg Wasser

Marie (2) coloured in a picture for REMONDIS' employees to thank them for the great work they do 'no matter what the weather'. "She's always happy when they drive by – clapping her hands when they've emptied the bin," Marie's mother wrote in her letter

LWG Managing Directors, Marten Eger (2nd from left) and Reinhard Beer (3rd from left), handing over a donation of 1,500 euros to the 'Elternhaus in Cottbus' (a house for parents with sick children). During LWG's 25th jubilee in the summer, they asked the guests to donate a sum to the 'Elternhaus für die Lausitz' rather than buy a gift – for which Sibylle Stahn (1st from left) and Antje Hartmann (4th from left) were very grateful



Scrap today, recycled tomorrow. In between: 0% loss in quality

The good news: copper can be recycled again and again with absolutely no loss in quality. The bad news: this is happening far too rarely at the moment. Less than half of all volumes of this metal are currently being recovered and reused. A real waste of a product that is just perfect for recycling.