

The company newsletter for

REMONDIS AKTUELL

remondis.com

So much potential still
hidden in waste

7,788,231t

Up to 7.8 million tonnes of additional recyclable
materials could be recovered from municipal
waste every year

Recycling

Germany might be world champions in recycling. A recent study, however, has shown it could still do a lot more

Water

Spain is recovering and its water sector is, too. Over one million Spanish people already benefit from REMONDIS Aqua's services

Latest news

The subject of landfills fell off the radar when the 'TASI' came into force in 2005. Today, there is still an urgent need for land-fill space

For what's left over at the end

Page 04



Modern environmental technology for water and energy

Page 18



The all-round carefree package

Page 24



LATEST NEWS

- 4 For what's left over at the end
- 7 Even more recycling is possible
- 8 The end of the road for the recycling bin?
- 10 Ambitious recycling goals are in the interests of our country
- 12 Always staying one step ahead
- 14 A strong presence in South Westphalia
- 16 Compost from Constance – black gold for the soil

WATER

- 18 Modern environmental technology for water and energy
- 20 Looking to the future
- 22 Service provider on a winning track

RECYCLING

- 24 The all-round carefree package
- 26 TSR – helping the environment, cutting costs
- 28 New solutions for aluminium recycling
- 30 Mobile cleaning service for bulk containers
- 32 Training the kings of the road
- 34 New hazardous waste recycling facility for REMONDIS UK
- 36 Staying "cool" with high-tech
- 37 Sustainable energy savings
- 38 CASUL – A multi-talent reflects megatrends
- 39 Take-back systems for new environmental technologies
- 40 REMONDIS acquires share in Högl T. E. O. GmbH
- 40 REMONDIS supports educational work at schools in the City of Saransk
- 41 Court gives green light for REMONDIS' waste paper collection service
- 41 German Taxpayers Association: new study highlights the risks of public sector business activities

PEOPLE

- 42 Close to their customers
- 44 Impressions

The future of Germany's 'dual system' is hanging in the balance. What is going to happen to the recycling bin?
> Page 8



Flag

Editor: REMONDIS AG & Co. KG // Brunnenstr. 138 // 44536 Lünen // Germany // T +49 2306 106-515 // F +49 2306 106-530 // remondis.com // info@remondis.com
Press officer: Michael Schneider // Layout: www.atelier-14.de // Print: Lonnemann, Selm

Dear Readers!

Once again the world's largest trade fair for the water, sewage, waste and raw materials sectors has opened its gates in Munich. As in previous years, hundreds of thousands of specialists from all around the globe are expected to attend the exhibition centre in the capital city of Bavaria this year. And once again, focus will be put on modern environmental technologies which aim to increase global recycling rates and make our planet more sustainable – and rightly so. We at REMONDIS love recycling and are doing everything that is economically viable and technologically possible to promote sustainability. However, no matter what recycling efforts are made, there is still that undeniable truth which people often prefer to ignore: at the end, there are always some materials left over. Each time residual and hazardous waste is thermally treated, it generates slag; each time a road is dug up or a building demolished, it produces mineral waste and construction waste. And after all possible substances have been sent for materials or thermal recycling, the question remains 'what to do with the residue that cannot be recycled?' The subject of sending waste to landfill appeared to have been taken care of in Germany when the 'TaSi' (Technical Directive on the Recycling, Treatment and Disposal of Municipal Waste) came into force in 2005. We are, therefore, now rubbing our eyes in disbelief as it becomes clear that a lack of landfill space – a problem believed to be something of the distant past – is, slowly but surely, threatening to catch up with us again. The City of Kaiserslautern has understood what is happening and has entered into a public private partnership with REMONDIS' subsidiary, REMEX, to build a new landfill that will be able to accept 400,000 tonnes of mineral waste each year. This, too, is something that must be done for the future of the country.

Some years ago, Prof. Klaus Töpfer, former Federal Minister of the Environment, introduced the so-called 'dual system' to take the pressure off household waste landfills and to push forward the country's recycling activities. The recycling bin (known as the yellow bin in Germany because of its yellow lid) enabled recyclable and residual waste to be collected separately from households and proved to be a



Ludger Rethmann, REMONDIS board spokesman

success for many years. Indeed, this concept was exported to many other countries. This system is now in danger of collapsing as a result of its own loopholes. Projected volumes of correctly licensed sales packaging will fall this year to just 812,000 tonnes, a 26 percent drop compared to last year, whilst the amount of waste sales packaging actually collected will remain the same at around 2.2 million tonnes. The honest system operators are having to bear this financial 'gap' and no-one is able to say how long it can survive. In this issue of REMONDIS aktuell, we look more closely at the question of whether the recycling bin has a future or whether it has finally reached the end of the line.

No matter what the future brings, waste and raw materials will still have to be transported from A to B. Looking at the growing shortage of qualified truck drivers in Germany, however, this may soon be more easily said than done. Fewer and fewer young people are choosing to join this profession which is so important for road logistics. REMONDIS has taken action to counteract this trend and is offering more apprenticeship jobs in this area. The job of a truck driver is so much better than its image. The apprenticeship course offers much more than simply learning to drive a truck – it also teaches all about vehicle technology, infrastructure, logistics and mobility.

As always, I hope you enjoy reading this edition of REMONDIS aktuell.

Yours

Ludger Rethmann

Ludger Rethmann

Latest news

For what's left over at the end

LANDFILL FOR MINERAL WASTE TO OPEN NEAR KAISERSLAUTERN IN 2015

What the former US presidential candidate Al Gore called "an inconvenient truth" when talking about climate change also applies to recycling waste. No matter how far we develop waste recycling processes, no matter how successfully we push forward materials recycling, there is always something left over at the end that cannot be used to produce energy or new materials. This 'something' is very often mineral material generated by roadworks and civil engineering projects, construction waste from demolishing buildings or incineration ash and residue from industrial facilities and power plants. Whilst the demand for new landfill space is growing, the number of areas available is getting smaller and smaller. A crisis is looming. The City of Kaiserslautern has understood what is happening and has decided to solve this problem by working together with a strong private sector partner – REMONDIS.



“The demand for new landfill space remains unchanged and in some German states there is even an acute shortage”

Jan Deubig, ZAK Board Member



It had generally been believed that the problem of the growing lack of landfill space in Germany had been solved when the so-called ‘TASi’ (Technical Directive on the Recycling, Treatment and Disposal of Municipal Waste) came into force in 2005 making it illegal for untreated municipal waste to be taken to landfill. Recent developments have shown this belief to be wrong – or at least when it comes to depositing slightly polluted mineral waste in landfills.

People are beginning to wake up to the fact that an effective recycling system can only work smoothly if solutions are also found for the materials left over. This problem needs to be solved quickly. There is a noticeable demand for landfill space for waste belonging to the so-called ‘DK1’ landfill category. At the same time, many of the landfills in Germany are reaching the end of their planned operating period. Many others are almost full and applying for a permit to operate a new landfill is a long-winded process. Despite all this, our industrial society continues to generate material that needs to be sent to landfill every single day. The question remains: where to put it?

Ecology, economics and costs are all important

The Kaiserslautern city and district authorities have now taken action to counteract this trend and are killing two birds with one stone. New space is to be created for mineral waste from its region on an old landfill site – a plan, therefore, which will not encroach on the landscape. The project is being run by Zentrale Abfallwirtschaft Kaiserslautern or ZAK, a municipal establishment jointly owned by the Kaiserslautern city and district authorities. Being an organisation of the District of Kaiserslautern and the City of Kaiserslautern, its legal status is that of a joint public-law institution which means the tasks it carries out must be for the public purpose. The purpose here is to improve the way waste from the municipalities is managed as well as

to make the business as cost-effective as possible. In order to ensure that it can fulfil its remit to provide a safe, eco-friendly and efficient recycling and resource sector, ZAK has opted to work closely together with a private sector partner, namely REMONDIS’ subsidiary REMEX whose core business has been focusing on the ecologically safe and cost-effective management of mineral waste for decades now.

Together, the public-private partners are to build and then operate a “landfill on a landfill” on ZAK’s grounds from 2015 onwards. This new and independent landfill section will be run using state-of-the-art technology. Official planning permission for the project was issued by the relevant authorities (Struktur- und Genehmigungsdirektion Süd) at the end of 2013. ZAK board member, Jan Deubig, has called this project an “epochal moment in ZAK’s history”. Once the landfill has been extended, it will be able to accept around 7.2 million cubic metres of slightly polluted mineral waste.

ZAK has, therefore, reacted to the demands of the market and has ensured that its local inhabitants and industrial businesses will have a safe place to deposit waste that falls into the landfill category I (DK1) for the next 30 years. According to the definition set out in the 2009 Landfill Ordinance, this category covers waste which has a very low organic content and only releases very low amounts of pollutants in the leach test. A further advantage: this project will help to make sure that the old landfill, which operated between 1975 and 2000, does not have a negative impact on the environment.

“An epochal moment in ZAK’s history”

Originally, the 25-hectare landfill had been commissioned in the 70s to accept a volume of 26.5 million cubic metres of non pre-treated municipal waste. Having taken around ▶



The impending shortage of space can only be prevented if the public and private sectors work together

LANDFILL WASTE NEAR KAISSLAUTERN

Even in these times of recycling, there is still a demand for landfill space for mineral waste

REMAX has a huge amount of experience. Each year, this REMONDIS subsidiary processes 10 million tonnes of mineral waste

► 6 million cubic metres, the decision was then made to close the site for household waste in 2000. The landfill has been undergoing its decommissioning phase since 2006. Work is currently being carried out to create the final landform using substitute mineral building materials, to seal the surface of the structure and to plant greenery on the top layer. Between 400,000 and 600,000 tonnes of mineral waste are being used as backfill material each year. The next task is to install the sealing system which will have two functions: to act as a seal over the surface of the old landfill structure and to act as a base seal for the new section. This system will be placed over and beyond the old landfill site and will form a geological barrier made up of a clay layer (min. 1 metre deep) and a plastic sealing sheet. This enables the material to settle or move without the layer being damaged. Plans are for the new landfill to cover 21.3 hectares of the old landfill as well as a 10.3 hectare section of the Kapiteltal valley which is currently a wooded area.

Kaiserslautern an example for the whole of Germany

Once the final structure of the old landfill has been completed, around 400,000 tonnes of mineral waste will be able to be deposited at the Kapiteltal site each year from 2016 onwards. This will include certain types of waste from industrial processes, power stations and roadworks as well as excavated earth and construction waste from demolished buildings. "The demand for new landfill space remains unchanged and in some German states there is even an acute shortage," explained Deubig who is looking to establish a sustainable solution with the "landfill on a landfill" concept. According to studies carried out by the Environmental Agency of the State of Rhineland-Pfalz, there will only be a

small number of landfills still accepting DK I waste in 2015 and beyond. It urgently recommends, therefore, that existing landfill sites be extended or new space created to prevent this impending shortage in the region. Thanks to this new project, the Kapiteltal landfill will be increasing its catchment area. Plans are for it to run until 2052. This problem, however, is not one that is limited to Kaiserslautern and the state of Rhineland-Pfalz. There is a growing lack of landfill space for DK I waste across the whole of Germany. REMONDIS is, therefore, also working in other parts of the country with its municipal partners to try and prevent this looming crisis. Two examples here are the Hubbelrath landfill site in Düsseldorf, which REMONDIS' subsidiary REMEX operates together with the Düsseldorf-based Awista, and AKM, Abfallwirtschaft-Kreis Mettmann GmbH. The latter is a joint venture between REMEX and the District of Mettmann. The district authorities, who are the owner and permit holder of the Langenfeld-Immigrath landfill, have commissioned AKM to operate the site which will be accepting mineral waste from the neighbouring conurbation from the middle of 2014.

Private sector partners cut costs and provide long-term security

Kaiserslautern is, therefore, not the only local authority to enjoy the benefits of working together with a strong private sector partner following a Europe-wide tender. Not only will this cooperation mean that the pressure is taken off both the public purse and the fee-payers, it will also allow ZAK to concentrate on its core activities whilst the private sector partner has to manage capacity utilisation. ZAK is to build and operate the new landfill but will gain some considerable cost advantages through its cooperation work with its sales partner, the "Arbeitsgemeinschaft Deponie Kapiteltal" group (which REMEX Conmin GmbH and REMEX Mineralstoff GmbH are part of). Being part of the global family-run business REMONDIS, the REMEX Group is one of the largest mineral waste management companies in Germany. It also has operations abroad with branches and associated firms in the Netherlands, France, Switzerland and Italy. Each year, REMEX processes over ten million tonnes of mineral waste. Thanks to this high volume of material throughput, the REMEX Group has extensive experience of working with the public sector as part of public private partnerships to operate landfills, provide services and supply mineral waste to landfills as part of large-volume and long-term agreements. ZAK board member, Jan Deubig, believes both this landfill project and their partnership with the REMEX Group to be a classic win-win situation for all those involved: "This project will bring about sustainable advantages for ZAK, REMEX, the regional economy, the fee-payers and the environment."

BACKGROUND INFORMATION

ZAK (Zentrale Abfallwirtschaft Kaiserslautern) is located in a dry valley in the Baalborn district around 1.5 kilometres north east of the city of Kaiserslautern. The company is responsible for the recycling and disposal of certain types of waste from both the city and district of Kaiserslautern which are home to approx. 250,000 people. ZAK has changed considerably since it first began in January 1978. Originally a special-purpose landfill business, it has developed into a modern waste management centre covering an area of around 88 hectares. Its central task is, wherever possible, to recycle waste and to do so in an environmentally friendly and cost-effective manner.



Even more recycling is possible

NEW STUDY REVEALS THE TRUE POTENTIAL OF MATERIALS RECYCLING IN GERMANY

Data published in a new study by the INFA Institute backs the call for the creation of a new and comprehensive recycling concept to improve the use of recyclable materials in municipal waste. The mutual goal of all market players must be to increase raw material efficiency. Old conflicts must be settled. The disputes between the public and private sectors and the dual systems must not be allowed to disguise the true potential of waste as a source of raw materials. The study shows that many cities and districts have already achieved some exemplary collection and recycling rates; many others, however, have not. Obligatory benchmarks should be used in the future to make sure that the most is made of these raw materials.

THE ADDITIONAL POTENTIAL HIDDEN IN RESIDUAL WASTE

Recyclable Material	Tonnes
Old paper	1,158,177
Glass	330,565
Organic/garden waste	3,614,349
Plastics	503,390
Drink cartons	45,799
Metals	455,571
Old wood*	1,680,380
Total	7,788,231



Up to 7.8 million tonnes of additional recyclable materials or 95kg per capita could be recovered from municipal waste every year. 25 percent of all cities and districts have already achieved these goals. They should be used as a benchmark when efficiency standards are being created and collection volumes and recycling rates set.

* either from collections of bulky waste or already separated from other waste

At the moment, discussions are focusing on sales packaging and products made of similar materials as well as on closing the loopholes in the Sales Packaging Ordinance. Raw material efficiency could be greatly increased through high quality recycling and it would be helpful if politicians looked for ways to achieve the results of the INFA study by creating clear efficiency standards and setting collection volumes and recycling rates. Moreover, these should no longer be limited to waste packaging but also include other materials, such as biowaste, bulky waste and metals. Based on its comparisons of the volumes currently being collected by cities and districts (divided up into clusters according to population density), the study calls for the introduction of obligatory

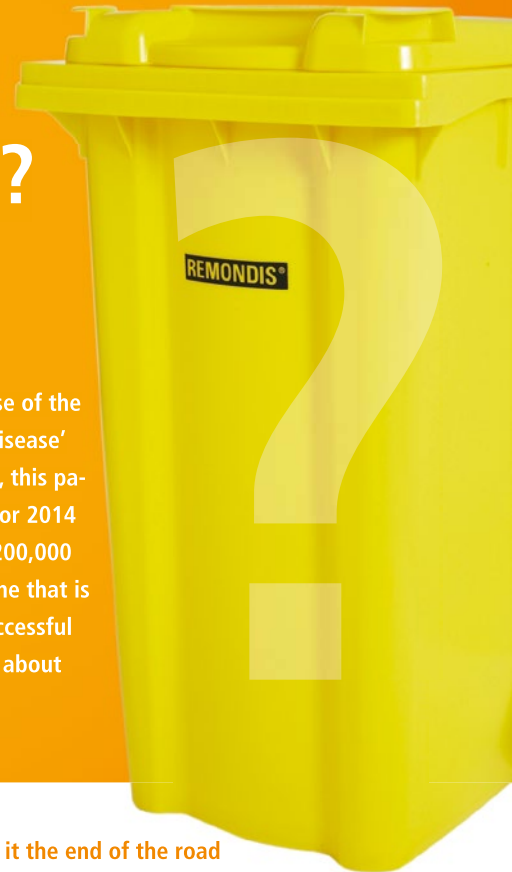
benchmarks. It estimates that – if the recycling targets were reached – up to 7.8 million tonnes of additional recyclable materials could be recovered from municipal waste every year. Around 25 percent of all cities and districts have already proven that these volumes can be achieved; 75 percent still have a considerable way to go yet. The aim of the new recycling law must be to set framework conditions so that as many recyclables as possible can be recovered from municipal waste. Both the technology and logistics systems needed to achieve the collection volumes and recycling rates published in the study are already available. This is the recycling goal for the future.



The end of the road for the recycling bin?

DWINDLING VOLUMES AND DUBIOUS PRACTICES ARE PUTTING GERMANY'S 'DUAL SYSTEM' AT RISK

The recycling bin, or the 'yellow bin' as it is known in Germany because of the colour of its lid, is an ailing patient. It is suffering from the 'wasting disease' and if extensive and effective action is not taken to cure this problem, this patient is at risk of dying. The volume of light sales packaging licensed for 2014 has fallen to 820,000 tonnes. Compared to last year, this is a drop of 200,000 tonnes or 25 percent. Yet another dramatic decrease, therefore, and one that is no longer acceptable. Indeed, it is calling the whole of the once so successful dual system into question. There is certainly not a lack of suggestions about how it might be saved but time is running out.



EKO-PUNKT

How efficient can a system be if – at the expense of honest system operators – an ever increasing number of system operators and companies placing sales packaging onto the market shirk their responsibility of having their products recycled correctly by pushing their waste volumes into dubious industry-specific collection systems or purporting to have their own take-back system? Both the legal certainty and the economic viability of this system, which collects and recycles sales packaging in Germany and has been such a success in the past, are hanging in the balance. At the time of going to press, neither the registered dual system operators nor the legislator had been able to draw up a solution, which everyone could agree on, to take this system into the future. Whilst politicians in Berlin are still considering the suggested changes to the 6th amendment of the Sales Packaging Ordinance, the Federal Ministry for the Environment has already submitted its draft for a 7th amendment to stabilise the system. This aims to completely abolish the right of a company to set up its own individual collection system as well as to introduce far-reaching restrictions regarding industry-specific systems. We asked Herwart Wilms, managing director of REMONDIS' own dual system, EKO-Punkt, how he sees the future of sales packaging recycling both from the point of view of a system operator and of a waste management business.

-200,000t

Drop in the volume of packaging licensed for 2014

Mr Wilms, is it the end of the road for the yellow bin?

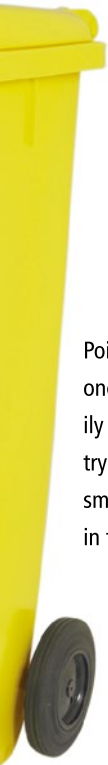
Herwart Wilms: If you mean the end of the yellow bin as the symbol for the kerbside collection of segregated waste packaging in Germany, then my answer is an emphatic 'no'. Recyclables will always be collected separately in Germany no matter whether the system operators succeed in reaching a sustainable, long-term agreement and indeed no matter what future amendments are made to the ordinances by the legislator.

What makes you so sure?

Herwart Wilms: The need to make the most of the raw materials contained in the various types of waste. An export nation such as Germany – which has so few raw materials of its own and whose industry is still far too dependent on imports of primary raw materials – cannot afford to simply incinerate the valuable raw materials in its waste. Even if some of the operators of waste incineration plants may certainly prefer this option, the EU has decided differently and this is a good thing as we need every tonne of raw material we can get.

What actually caused the dual system to get into such difficulty?

Herwart Wilms: There is a flaw in the system. When, at the insistence of the EU, the old monopolistic "Green



“We are still a long way from making the most of the recyclable materials in our waste in Germany.”

Herwart Wilms, Managing Director at REMONDIS



Point” system was abolished to encourage competition, no-one could have foreseen that this competition would primarily consist of the black sheep among the system operators trying to calculate their share of the market so that it is as small as possible. Such a perverted form of competition can, in the end, only lead to the collapse of the whole system.

Could you explain that in a bit more detail for our readers?

Herwart Wilms: For years now, the volume of sales packaging collected has remained at a stable level of around 2.2 million tonnes. This is actual physical waste that must be collected, sorted and processed by the waste management companies commissioned to do this work. This service is paid for indirectly by the consumers. Product manufacturers and companies placing packaging onto the market have to pay a licence fee which they effectively add on to the price of their products. The size of their licence fee depends on their share of the volume of material and this is settled with the dual system of their choice which had advertised their services. In order to keep costs as low as possible for their customers, some dual systems are now simply defining volumes out of existence via so-called industry-specific solutions or take-back systems run by individual companies. These, though, are just loopholes as consumers never take their sales packaging back to the shop they bought it from nor do these volumes actually disappear. The victims here are both the honest system operators and the waste management companies which have to continue to provide a service which the polluters are doing their very best not to pay for. If this is not stopped, the system will not survive.

What would happen then?

Herwart Wilms: The kerbside collection of segregated recyclables has become part of everyday life for both local residents and politicians. Recyclables will, therefore, continue to be collected separately in the future. Every day, public and private sector waste management businesses prove that the collection, sorting and recycling of these materials work well. The only thing that needs to be changed here is the way the

system is financed. Reserves have been created for the transitional period should there be a financial shortfall.

What do you suggest?

Herwart Wilms: The system needs to be completely overhauled. What is important is that all of the players, i.e. those placing the packaging on the market, the systems and the legislator, find a solution very quickly so as to come to grips with the current problems. No matter how sales packaging is to be collected in the future, the system should definitely be expanded to include all recyclables. For this to work, product responsibility must be extended to cover other products, i.e. not just packaging, and all market players, whether they are from the public or private sector, should set ambitious benchmarks regarding collection volumes and their recycling potential. The latest studies have made it very clear that we are still a long way from making the most of the recyclable materials in our waste in Germany. And this is where the true future of the yellow bin will be found.

> See, too, our feature article on page 7.

Mr Wilms, thank you for the interview.

The vicious circle of falling volumes of licensed materials and increasing costs per tonne must be broken

Guest article

Ambitious recycling goals are in the interests of our country

A COMMENTARY BY RAINER DEPPE, MEMBER OF THE STATE PARLIAMENT OF NORTH RHINE-WESTPHALIA, CDU SPOKESPERSON FOR CLIMATE CHANGE, THE ENVIRONMENT AND NATURE CONSERVATION

It is a commonly accepted fact that Germany has very few raw material reserves of its own and must import the majority of its raw materials from other countries around the world. At the same time, around 20 million tonnes of waste are thermally treated year for year. In the best case scenario, these materials are used to generate electricity and heat. The raw materials, however, are lost to us forever. More can be done here. We must make more of the materials available to us.

A portrait of Rainer Deppe, a middle-aged man with short grey hair and glasses, wearing a dark suit, white shirt, and a purple and white striped tie. He is smiling slightly and looking towards the camera. The background is a blurred outdoor setting with greenery and a building.

Rainer Deppe

Member of the State Parliament of North Rhine-Westphalia, CDU Spokesperson for Climate Change, the Environment and Nature Conservation

A good 40% of all municipal waste is still being incinerated. And this despite the fact that the German parliament, the Bundestag, passed a recycling law in 2012 which clearly places materials recycling ahead of incineration in its 5-stage waste hierarchy. This practice has been possible because of the overcapacity in the waste incineration sector which has led to a huge fall in incineration prices and, in turn, effectively killed off efforts to promote the far more sensible materials recycling.

It is, however, vitally important for our country that these valuable raw materials are recovered, processed and returned to commercial cycles. They ensure that there is a guaranteed, stable and low-cost supply of raw materials for our manufacturing industry. The principle that applies to energy – namely transforming a business from being “resource-greedy” to “resource-friendly” – is, at the very least, just as important for the supply of raw materials for our industrial country.

The new recycling law has stipulated that organic, paper, metal, plastic and glass wastes must be segregated and collected separately across the whole of Germany. According to the law, such systems must be up and running by 01 January 2015 at the latest. Collecting waste – or perhaps it would be better if I called it raw materials – is, however, just one side of the coin. This system only becomes truly effective if the raw materials are genuinely recycled. What is decisive here, therefore, is what actually happens to the sorted raw materials.

All too often this is not clear. Whilst the input of materials recycling facilities is recorded in a fairly accurate way, the story of their output is rarely told. Records are not kept on whether the raw materials recovered from the materials recycling processes are really reused in production cycles or whether they are used once and only as a substitute fuel to generate energy. A future-oriented recycling sector should not be satisfied with simply having the collected volumes of recyclable waste documented. The success of such a system must be judged on what volumes of raw materials are genuinely recovered and reused.

The recycling law does make it obligatory for local authorities to draw up records about the volume of waste in their region and to calculate their recycling rates. The recycling

“Increasing materials recycling is most definitely in the interests of Germany. Growing the recycling sector would create more jobs”

methods are, however, more often than not too vague. What is lacking is a uniform system that enables recycling rates to be calculated and which would also allow comparisons to be made.

North Rhine-Westphalia, the largest state in Germany, should show courage here and develop a uniform and obligatory system that introduces benchmarks across the whole of its state. A transparent system that enables recycling rates to be calculated would immediately make it clear where the successes are – and, of course, the weaknesses – but at the same time it would reveal the dynamics of materials recycling. We truly believe that such a system of benchmarks would very quickly help to promote high quality recycling. 65% of all municipal waste should be recycled by 2020. Considering the fact that when the law came into force in 2012, the recycling rate for municipal waste already lay at around 64%, I personally would wish for more ambitious targets for such a highly developed industrial country.

Increasing materials recycling is most definitely in the interests of Germany. Not only because we would then need fewer raw material imports and so would be less dependent on others; growing the recycling sector would create more jobs. In light of the fact that raw materials are becoming scarcer and scarcer and, above all, more and more expensive, McKinsey has even identified the recycling sector as one of the industries of the future. Researchers believe that an additional 35,000 jobs could be created in North Rhine-Westphalia alone.

Let us find the courage to develop a high quality recycling sector that processes high volumes of materials for reuse. If we set up the whole of the supply chain so that it focuses on materials recycling – from collecting the materials, to selecting the recycling methods, to sending them to recycling plants – then we will not only be helping to conserve natural resources and prevent climate change, we will also be acting in the interests of our own country.

Collecting waste is just one side of the coin. This system only becomes truly effective if the raw materials are genuinely recycled

Growing the recycling sector
Researchers believe this will create
35,000
new jobs in NRW

Poland

Always staying one step ahead

SZCZECIN BUSINESS DEMONSTRATES THE HIGH PERFORMANCE LEVELS OF REMONDIS POLAND



REMONDIS' success story in Poland began in Poznan and Szczecin more than 20 years ago. Two decades on, these public private partnerships continue to act as a role model for any project being planned in the country. Over the years, both companies have focused on further developing their business. REMONDIS Szczecin's new premises, for example, clearly demonstrates the sustainability of its business – both from an economic and ecological point of view. And thanks to the progress they have made, they are also ensuring that they always stay a step ahead of their competitors.

With 25 company-owned sorting plants, REMONDIS ensures that a wide range of different materials are separated correctly and sent for recycling



80,000t

Sustainable energy for one of Poland's industrial centres: 80,000 tonnes of high calorific substitute fuels are produced in Szczecin each year

80,000t

Two years ago, REMONDIS Poland opened its new head office in Warsaw, a building constructed in accordance with the eco-friendly passive house standards. Not only did this event coincide with the company's twenty years' anniversary, it also set the course for the future with the company firmly believing that if it is to maintain its pole position in Poland's recycling sector, it is essential that it continues to further develop its business. Those working in the company's branches around the country have also been focusing on introducing innovations and change. At the end of last year, REMONDIS opened up a new state-of-the-art business premises in Szczecin, a city with more than 400,000 inhabitants. Covering an area of 5.3 hectares, this new site is home to a new head office, a centre for processing recyclable materials, a facility for processing household waste, a

range of services, its ability to invest and its expertise in managing projects. By planning, financing, building and operating new sorting and processing facilities, the company has become the driving force in many regions helping to create innovative waste management infrastructures.

A steadfast partner for local authorities and businesses

Together, REMONDIS Poland's numerous companies and branches provide a comprehensive network of state-of-the-art recycling services – whether they be system solutions or bespoke offers. Indeed, REMONDIS' services are in high demand by industrial, trade and commercial businesses alike. The EKO-PUNKT take-back system, for example, was launched in Poland back in 2001 and, since then, has been

Local authorities also like to work with REMONDIS when it comes to water management services as the company can meet their stringent ecological and economic standards in this area, too



plant for producing substitute fuels as well as a temporary storage facility for hazardous waste.

Investments and innovations

Modern water and recycling economies are essential if quality of life is to be maintained and improved – and this is not only true for this booming port city. REMONDIS is now the market leader across the whole of Poland. The approx. 2,460 employees working in the companies and branches in 42 Polish towns demonstrate the efficiency of the company each and every day – and are also pioneers when it comes to ecological progress. From cleaning roads, to collecting recyclables, to material flow management and much, much more: REMONDIS is a partner much sought after by district, city and regional authorities thanks to its comprehensive

ensuring that the packaging material placed on the market by the various companies is collected and sent for recycling. REMONDIS has also become an important partner for the producers of electrical and electronic appliances in the country helping them to fulfil their legal recycling responsibilities: its dismantling centre in Lodz is the most modern of its kind in Poland mastering the stringent requirements for recycling waste electrical equipment and having a positive effect on both the environment and the budget – from processing recyclable materials all the way through to disposing of hazardous waste. As the company's success has increased, so, too, has the number of offers made to public and private sector customers with the result that REMONDIS Poland is now a sought-after partner for the local authorities and firms in Szczecin as well.

Impressive results: every year, REMONDIS Poland handles around 1.5 million tonnes of recyclable and residual materials

Close to our customers

A strong presence in South Westphalia

REMONDIS CONTINUES TO GROW IN THIS EMERGING REGION

At the beginning of December 2013, REMONDIS acquired Sita Westfalen GmbH & Co. KG's business activities in the towns of Lennestadt, Schmallenberg and Olpe. REMONDIS has, as a result, invested in a region which has been enjoying considerable growth for many years now: South Westphalia is not only considered to be one of the three strongest industrial regions in Germany, it is also a popular tourist area attracting millions of guests every year.

Thanks to these acquisitions, REMONDIS has welcomed around 140 new employees to its workforce

Both these trump cards – business and tourism – require professional know-how and perfect infrastructures when it comes to waste management. This South Westphalian acquisition has, therefore, created an excellent basis for REMONDIS to be even closer to its customers. As a result, REMONDIS Industrie Service can now be found in Lennestadt with its own business location for hazardous waste. Alongside them, REMONDIS Olpe is now offering its commercial waste services across the region to its industrial, retail and commercial customers as well as to the public sector.

Full service portfolio for potentially hazardous materials

Being a specialist for hazardous waste, REMONDIS Industrie Service is now operating the acquired facility in Lennestadt and its fleet of vehicles where it is able to handle a whole range of such materials. In addition, this REMONDIS subsidiary has access to a wide range of facilities including more than 80 recycling and disposal plants. This network of high-

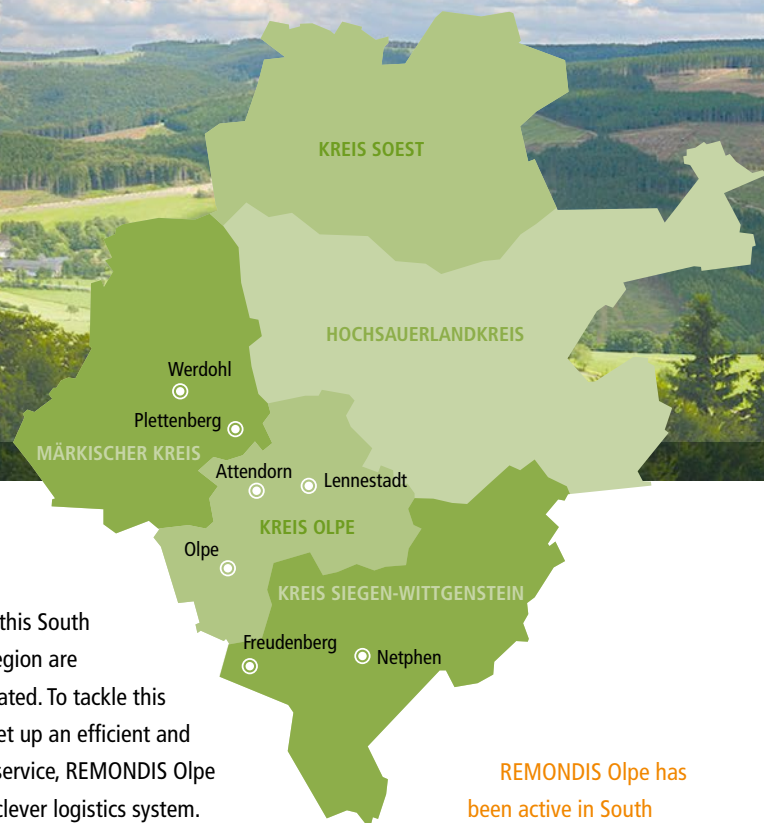
tech facilities uses the best possible methods to turn liquid and solid hazardous waste into a source of raw materials or energy. Any remaining residue is disposed of in an environmentally friendly way.

REMONDIS Industrie Service offers its South Westphalian industrial and commercial customers a full range of services – from recording the materials, to analysing the waste, to providing suitable containers, packaging and logistical collection systems, to transporting the substances in special vehicles, to recycling or disposing of the materials. Other services include drawing up and archiving all relevant documents and certificates.

In addition, a decentralised sales organisation has been set up to further optimise customer service. This enables the team to provide on-site support whenever it is needed as well as to expand the business into neighbouring districts.

The expertise of a global company right next door to its customers – this particular strength of the REMONDIS Group is also in high demand in South Westphalia

REMONDIS' business locations in South Westphalia



Services for local inhabitants, authorities and companies

In keeping with its core activities, REMONDIS Olpe is focusing on the area of municipal waste. REMONDIS Olpe is a growing business steadily expanding and strengthening its position on the market. Having taken over a number of container services in the south of its catchment area over the last few years, it is now looking to the region north east of its head office. One particularly important area of business is its services in and around Schmallenberg, one of the region's main tourist centres. In all, it covers 300 square kilometres and unites more than 80 city districts and villages. REMONDIS Olpe is now responsible for collecting municipal waste, old glass and light sales packaging here as well as keeping roads and gullies clean. Moreover, it also manages the municipal recycling centre on behalf of the city authorities. In addition, it has contracts with the local authorities in Herscheid, Neuenrade and Eslohe – three districts comprising around 30,000 inhabitants.

Many parts of this South Westphalian region are sparsely populated. To tackle this problem and set up an efficient and cost-effective service, REMONDIS Olpe has created a clever logistics system. Two sites are located at its head office in Olpe where materials such as light sales packaging, plastic film and old paper can be transhipped and, in some cases, compacted.

Another important component of its portfolio is its services for its industrial, retail and commercial customers. REMONDIS Olpe provides this group with a full package of services – all the way through to taking over all waste management tasks at production facilities. A number of companies have already taken advantage of this offer such as Trilux and Dometic, two of the more than 100 international market leaders located in South Westphalia.

REMONDIS Olpe has been active in South Westphalia since 1996. The majority of its employees live close by and have strong ties to the region

Recycling

Compost from Constance – black gold for the soil

NEW TUNNEL COMPOSTING SYSTEM COMMISSIONED AT THE SINGEN COMPOSTING PLANT

Kompostwerk Landkreis Konstanz GmbH is the longest-running PPP within the REMONDIS Group. One of the first ever recycling facilities to be run on an industrial scale in Germany was planned and built here back in 1980.

Tunnel composting facilities save both time and space

If soil is to be used over a long period of time then it is essential that good fertility levels are maintained. Humus is vital here as it activates soil life. This is where compost comes into play. This natural rotted product is ideal as it contains high amounts of organic substances making it very

similar to humus. Compost, therefore, supplies the soil with nutrients and can be used instead of classic fertiliser products containing mineral fertiliser – thus helping to conserve our valuable natural resources. Moreover, compost retains water in the soil and acts as a buffer and filter.



Right from the start, REMONDIS has known just how important compost is for agricultural businesses and so has always placed special emphasis on the aspect of sustainability when producing compost on an industrial scale. The composting plant in Singen near Constance is a good example of this. Located near Lake Constance, the plant was originally commissioned at the beginning of the 80s to compost residual waste and sewage sludge. Since 1993, however, it has focused exclusively on recycling biowaste. For over 30 years now, the facility has been doing its duty and has recycled way over 2 million tonnes of waste during this period. With repair and maintenance costs rising and energy consumption not being as efficient as is possible nowadays, the decision was made to replace a section of the plant. Over the last few months, therefore, the technology at the facility has been revised and overhauled. As part of this project, one of the plant's processing lines was removed freeing up an area of over 10,000m² for new investments.



Well controlled composting process

Thanks to the modern tunnel composting facility, it is now possible to process the biowaste in a more gentle way. The facility creates much better composting conditions, has lower emission levels and consumes less energy. This modernised composting process, therefore, makes a greater contribution towards preventing climate change. Once the organic waste has been pre-treated, i.e. it has been cut up and any unwanted substances such as metals and plastic have been removed, it is placed in the tunnels. A large number of air jets have been installed in the floors of the tunnels so that the air needed for this process can be added as and when it is required and distributed evenly through the material. This technique allows the best possible levels of oxygen to be reached. The control system regulates the aeration and watering of the material to achieve ideal composting conditions. After approx. ten days, the material is transferred by wheel loader to another section of the plant where it is refined. Here it undergoes a number of fine screening processes to produce high quality compost.

The owners of the plant, the District of Constance and REMONDIS, believe that they have succeeded in creating a basis for producing sustainable and resource-friendly compost with this initial extension of its tunnel composting activities. REMONDIS has once again set an example with this new composting tunnel, showing how to achieve greater sustainability whilst recycling waste and producing high quality raw materials. The accelerated and optimised composting process is very similar to that found in nature and so is in keeping with the fundamental principle of a fully closed natural cycle showing how future recycling processes could be for other organic and non-organic materials. Thanks to this more gentle method of producing compost, REMONDIS is pushing forward its efforts to improve the quality of our soil and so protect the environment and prevent climate change.

Every year, the composting plant produces 28,500t of compost from biowaste and 2,600t of compost from tree and plant cuttings



South Europe

Modern environmental technology for water and energy



REMONDIS AQUA EXPANDS WITH ITS SPANISH SUBSIDIARY OMS

Making the most of the opportunities for growth in Spain – this was the goal of REMONDIS Aqua International GmbH when it acquired the local water management specialists OMS-Saccede a good four years ago. Since then, the company has been pushing forward its expansion strategy on the Iberian peninsular with its pioneering projects to treat wastewater and generate energy.

Founded in 1979, OMS-Saccede is a company based in Barcelona with subsidiaries and associated businesses across the country. This REMONDIS subsidiary offers a range of services from treating wastewater and sewage sludge all the way through to generating efficient energy. Electricity, for example, is produced during the sewage sludge drying process via combined heat and power plants and biogas is

recovered from the wastewater. Geographically, it primarily operates in the well-structured regions of Aragón, Catalonia and Valencia. Over the last few years, OMS has been able to considerably expand its circle of municipal and industrial customers – despite the difficult economic climate following the financial crisis.

1,000,000



Over a million people living in Spain already benefit from the REMONDIS Group's water management services

Public sector partners

REMONDIS Aqua's Spanish company recently succeeded in winning a public tender to operate and maintain the sewage treatment plant in Miranda de Ebro, a city situated in the northern province of Burgos. The facility provides water management services for over 50,000 local inhabitants.

Three local authorities from Catalonia have also extended their contracts with OMS. The collaboration with the City of Banyoles focuses on operating the municipal sewage treatment plant for which OMS has been responsible since 1996. In contrast, the company is in charge of the sewage sludge drying facilities in both Montornés and Terri.

Thanks to their many years of experience and their comprehensive specialist knowledge, REMONDIS Aqua and OMS were also called in to help implement an extensive water processing project on the Llobregat, the second-longest river in the region. OMS has already been put in charge of managing operations at nine facilities as part of this project. Other facilities are currently being built and these will also be managed by the REMONDIS Group's Spanish experts once they have been completed.

Strong services for the industrial sector

One of OMS' most important industrial projects currently involves a wastewater treatment facility in Casasbuenas, a district approx. 65 kilometres from Madrid. Further north east in Tèrmens, the company is in the process of extending an industrial wastewater treatment plant, which it had originally planned and built back in 1998. The primary aim here is to reduce the nitrogen content of the water. By using a membrane bioreactor, the amount of nitrogen will be reduced from its current 2,000 to just 20 milligrams per litre – i.e. one hundredth of its present volume.

In the north west of Spain, OMS is implementing an industrial project in the Galician district of Pontesampaio to plan and develop a new wastewater treatment facility. Plans are for the water to be discharged into the River Ulló which flows into an extremely ecologically sensitive region: the bay of Ria de Vigo on the Atlantic. The requirements regarding the mechanical and biological treatment processes are, therefore, correspondingly high.

The company has already completed a project to extend and commission a biological treatment facility for industrial wastewater in San Martín y Mudrián, a district in the north Spanish region of Castilla-Leon. The project was brought to a successful conclusion last year. Today, the plant is playing an important role in helping to protect the environment. Based on the level of efficiency it has achieved, it can feed around 290 cubic metres of treated water into the River Pirón every day.

OMS-Saccede operates in many Spanish regions – from the far north west of the Iberian peninsular all the way to the Mediterranean island of Minorca



Looking to the future

MODERNISATION OF THE LAUCHHAMMER SEWAGE TREATMENT PLANT TO BE MANAGED WITH THE HELP OF WAL-BETRIEB GMBH



Plans have been made for the Lauchhammer sewage treatment plant, located in the south of the German state of Brandenburg, to be modernised this year – with operations carrying on as normal. REMONDIS' subsidiary WAL-Betrieb is to be in charge of this future-oriented project. Since 2006, the company has been responsible for managing both the technical and commercial side of all facilities owned by Wasserverband Lausitz (WAL), one of the largest water associations in Brandenburg.

WAL and WAL-Betrieb: with both companies continuing to grow, they provide an excellent example of just how successful cooperation work can be between the public and private sectors

Working on behalf of 25 local authorities and more than 80,000 local inhabitants, Wasserverband Lausitz (WAL) is responsible for supplying drinking water and treating wastewater in the region. Over the years, the association has enjoyed many successes: water rates paid by the local residents, for example, have remained stable since the year 2000 and the number of households connected to the public sewer system is steadily growing (currently approx. 84%). However, as the number of properties connected to the system has increased, so too, have waste loads and the amounts of wastewater that need to be treated by the Lauchhammer sewage treatment plant. Commissioned in 1994, the plant accepts wastewater from the city of Lauchhammer and the surrounding districts and is gradually reaching full capacity.

Comprehensive high-standard renovation work

With this in mind, Wasserverband Lausitz has decided to invest in a comprehensive project to modernise the sewage treatment plant – assisted by WAL-Betrieb. WAL-Betrieb has itself been awarded certificates for its quality and environmental management and energy management systems (in acc. with DIN EN ISO 50001) and one of its main priorities is to provide its public sector clients with efficient and cost-effective solutions. One way to guarantee that the quality of the water in the region's lakes and rivers remains at the right level is to ensure that operations at the plant run reliably – and that they continue to do so well into the future. The plant's good discharge values are, therefore, to be maintained at the same reliable level or even improved.

The renovation work at Lauchhammer is focusing primarily on the facility's biological treatment stage. At the end of 2013, the plant was extended to include a further activated sludge tank with new hydraulic technology. The technology of the other tanks is to be modernised this year. Besides the biological treatment phase, both the automation technology and the process control system at the plant are to be adjusted to meet the latest technology standards.

Ecology and economics hand in hand

"We are committed to offering integral solutions and future-oriented concepts and priority is always put on customer satisfaction," explained Karin Rusch, managing director of WAL-Betrieb. It is precisely for this reason that the company looked for a solution that offered not one but a variety of



The biological treatment stage makes up around 50 to 70 percent of all energy consumed at the plant. WAL-Betrieb is, therefore, looking to make this area particularly energy efficient



benefits. Together with the control system's modern control algorithms, the new and highly sensitive measuring technology will lead to an efficient and sustainable use of energy. This will help to both conserve valuable resources as well as keep costs down. Christoph Maschek, managing director of WAL-Betrieb said: "No matter where we're working, we always look to use both material and energy resources as cost-effectively and efficiently as possible." Operations will be run as normal whilst the modernisation measures are being carried out. This will make the project particularly challenging for both WAL-Betrieb and the contractors and so each stage has been prepared meticulously. At the end of the day, WAL-Betrieb always follows its tried and tested strategy: providing optimum efficiency, the best possible service and the highest levels of quality.

BRANDENBURG DAY 2014:

REMONDIS and EURAWASSER are the main sponsors

It's soon to be that time of year again: the "Brandenburg Day" is being held in the state of Brandenburg on 05 and 06 July 2014. The city hosting this year's festival, which is held every two years, is Spremberg, the "Pearl of the Lausitz". REMONDIS and EURAWASSER will be supporting this major event as one of the main sponsors. "Brandenburg is very important to us with many of our company's activities focusing on this region," explained Marten Eger, regional manager at REMONDIS Aqua responsible for Saxony, Saxony-Anhalt, Brandenburg and Thüringen. A joint stand is to be set up at the event where REMONDIS, EURAWASSER, Lausitzer Wassergesellschaft (LWG) and WAL-Betrieb will all be presenting their extensive service portfolios.

Service provider on a winning track

WASTEWATER TREATMENT AND CLEAN STREETS FOR THE CITY OF GOSLAR AND THE HARZ REGION

The cooperation work between the City of Goslar and EURAWASSER Betriebsführungsgesellschaft mbH, a company belonging to REMONDIS Aqua, demonstrates perfectly just how successful public private partnerships can be in the water management sector. Over the last 18 years, this Goslar-based firm has become one of the leading providers of environmental services in the Harz region. Over this period, it has gradually extended its range of services which, in turn, has led to an increase in the size of its workforce, namely from 25 to its current 64 employees.

EURAWASSER

A strong partnership for 18 years now: EURAWASSER and the City of Goslar

This success story began back in February 1996 when EURAWASSER Betriebsführungsgesellschaft mbH won a Europe-wide tender and founded the joint venture, Stadtentwässerung Goslar GmbH, with the City of Goslar in the German state of Lower Saxony to provide wastewater management and treatment services. The city owns a 51 percent share in this joint venture and EURAWASSER a 49 percent share. Under the terms of the cooperation agreement, Stadtentwässerung Goslar GmbH transferred all commercial and technical management responsibilities to EURAWASSER Betriebsführungsgesellschaft mbH, which has been in charge of the central sewage treatment plant and the 439km long sewer network since then. Stadtentwässerung Goslar GmbH is the actual owner of the facilities and is also responsible for any investments and financing of such investments.

Extensive building projects were carried out at the end of the 90s – such as centralising the wastewater treatment activities and building a third treatment stage at the central sewage treatment plant – which not only considerably improved the results of the treatment processes but also had a positive effect on costs. Over the last 18 years, further investments have been made to improve the pipe network as well as to build up a modern fleet of vehicles so that EURAWASSER can react quickly if there is a problem with the sewer system.

The expertise of the REMONDIS Aqua Group is not, however, limited to water management and this can be seen by the fact that its contractual partners have transferred other public services to the company besides its core business. In 2003, for example, EURAWASSER participated in and won another Europe-wide tender put out by the City of Goslar and has been responsible for cleaning the city's streets and providing a number of winter services since then. Together with EURAWASSER, Stadtentwässerung Goslar GmbH has access to state-of-the-art vehicles and machines for cleaning streets, paths and other areas and is, as a result, able to provide top quality services.

EURAWASSER Betriebsführungsgesellschaft mbH not only has contracts with the City of Goslar but also with the district of Kreiensen (part of the town of Einbeck) in the



'Lower Saxony Day' 2013: the stage in front of the historic Kaiserworth Guildhall

state of Lower Saxony and the districts of Stapelburg and Abbenrode (part of the North Harz municipality) in the state of Saxony-Anhalt. All in all, therefore, the company operates over 600 kilometres of wastewater pipes, numerous pump stations and flood control structures as well as three sewage treatment plants. Furthermore, EURAWASSER Betriebsführungsgesellschaft mbH also works for many different commercial and industrial businesses providing them with

head office from the central sewage treatment plant to the edge of the historical town centre of Goslar in the spring of 2013. Moreover, this move created additional space for the sales staff working in REMONDIS Aqua's industrial water management division who have now joined the EURAWASSER team at the new premises (Odermarkplatz 1). Dr Martin Lebek, a managing director of EURAWASSER Betriebsführungsgesellschaft, is responsible for the portfolio



In Goslar, we clean approx. 193km of roads as well as cycle paths, intersections, car parks and other special structures

The goal of the central sewage treatment plant in Goslar is to become energy self-sufficient

services such as cleaning their wastewater pipes, car parks, grassed areas and paths in the summer and winter. No matter who it has a contract with, EURAWASSER Betriebsführungsgesellschaft mbH always sees itself as being a partner. "Transparency and partnership are very important for the way we work. Top priority is always put on providing a reliable and high quality service," stressed Holger Fricke, managing director of the company which now has very strong ties to the region. In order to ensure the company's own quality expectations are met at all times, it introduced a quality management system in accordance with DIN EN ISO 9001 in 2004 and had it assessed by the accreditation body DEKRA. Whilst implementing an integrated management system, the company was awarded further accreditations in 2010: in the areas of health and safety at work (BS OHSAS 18001:2007) and environmental management (DIN EN ISO 14001:2004). The last re-accreditation process for these three areas was completed at the end of October 2013. By using external assessors to check its various processes and by carrying out its own regular in-house checks, the company is looking to make sure that its customers always receive a safe, environmentally friendly and high quality service.

of services for industrial customers there as well as for R&D projects within the REMONDIS Aqua Group. The new premises were officially opened on 01 March 2013 with many guests attending the event. The Mayor of Goslar, Dr Oliver Junk, the Chairman of the supervisory board of Stadtentwässerung Goslar GmbH, Armin Kalbe, and the Chairman of the supervisory board of Wasserver- und Entsorgungsgesellschaft Kreiensens mbH, Bernd Huwald, all congratulated the EURAWASSER managing directors in Goslar on their choice of location. One year on, Holger Fricke concluded: "We have had a very positive reaction from our customers. Our staff also very much enjoy working in these employee-friendly offices."

Official opening of the new premises: Mayor Dr Oliver Junk, Holger Fricke, Dr Martin Lebek, Armin Kalbe (from left to right)



EURAWASSER Betriebsführungsgesellschaft places great importance on finding ways to further improve its customer services. This was the reason why it decided to move its

Managing waste at petrol stations

The all-round carefree package

ESSO FORECOURTS OPT FOR REMONDIS' RECYCLING SERVICES

Quite a few things are generated at petrol stations which are not allowed to be re-used or re-sold. Many of these materials can be recycled. Organising the recycling of such products, however, is time-consuming – time which many petrol stations simply do not have. REMONDIS offers services that have been especially adapted to meet the needs of these businesses and that not only help to protect the environment but also save their customers time and money.



All of the services that REMONDIS provides for Esso are coordinated by a central contact person





Esso operates over 200 company-owned petrol stations in the south and west of Germany via its subsidiary, Retail Operating Company Deutschland GmbH (ROC). REMONDIS has been providing ROC with recycling services for over four years now. At the beginning of this successful collaboration, the company carefully analysed the logistics concepts and material flows that were in place at that time. Using this information as its basis, it then drew up a waste management solution that created greater advantages. Christian Zander, performance support manager at ROC, named one of the main plus points: "Thanks to the introduction of REMONDIS' waste management concept, which involves, among other things, an ongoing optimisation of our processes, our work has been made so much easier."

Large-scale recycling

On behalf of its customer, ROC, REMONDIS provides more than 200 Esso petrol stations with a comprehensive range of services. Focus here is put on segregating, collecting, transporting and recycling the many different types of materials they generate. Considerable volumes are handled over a period of twelve months. On average, REMONDIS sends 1,529 tonnes of waste for materials or thermal recycling each year. In addition, 1,156 tonnes of paper, card and cardboard are collected and recycled. On top of this are a further 690 tonnes of organic materials, such as food waste or expired food from the petrol stations' convenience stores. Other services include collecting oily liquids from the businesses. Thanks to its extensive network of branches, REMONDIS is close to its customers and able to provide all the services itself.

"By drawing up an integral concept for all of ROC's forecourts, we have created both internal and external synergies," explained Christoph Haub, key account manager at REMONDIS. "We are, for example, continuously optimising the way the various materials are separated at each forecourt. This creates more eco-friendly and sustainable processes because the better the sorting process is, the better it is for the environment."

Sustainability certificate documents environmental contribution

Operating a system that focuses on recycling helps to reduce consumption of primary raw materials and energy and to cut greenhouse gas emissions. The actual concrete contribution that Esso makes towards the environment by helping to conserve natural resources and prevent climate change has been documented by REMONDIS in a sustainability certificate. This process involves a detailed analysis of all the individual stages of the various services provided. It uses a method that enables the ecological advantages to be scientifically proven and evaluated.

The services for the network of petrol stations have been adapted to meet their individual needs



Dominique Poetsch, Territory Manager at ROC, and Christoph Haub, Key Account Manager at REMONDIS, are delighted with the long-term cooperation agreement which also promotes sustainability

SO MUCH MORE THAN SIMPLY FUEL

Drivers are able to purchase a whole range of everyday products at the Esso petrol stations run by Retail Operating Company Deutschland GmbH (ROC). The forecourts' modern "Snack & Shop" and "On the Run" convenience stores sell a wide selection of food and specialty coffees – ranging from fresh snacks and drinks to tobacco products, newspapers and magazines. Corporate clients have additional advantages if they use an Esso card for their fleet of vehicles. This is accepted by more than 13,000 petrol stations in 21 European countries.

TSR – helping the environment, cutting costs

ENERGY MANAGEMENT SYSTEM IN DUISBURG SETS NEW STANDARDS FOR TSR

The goal of ISO 50001 energy management systems is to reduce the amount of energy consumed by a business. This ISO standard provides an international framework for companies helping them to reduce their energy costs and cut greenhouse gas emissions. All relevant processes at a company are analysed and optimised to make energy consumption more transparent and so discover ways of sustainably cutting energy costs. The result is greater energy efficiency. Having implemented the system, TSR has been reducing its costs by using a structured method to record and evaluate its consumption of electricity, diesel and gas. This has not only saved the company money but also helps to protect the environment.



TSR is taking active measures to combat rising energy costs

It only really became obvious just how valuable energy management systems can be when energy costs began to rise so steeply. This is particularly true for electricity as legal regulations, such as those found in Germany, are leading to consumers having to pay more and more for their electricity even though electricity trading prices have been dropping for years now. Over the last three years, the number of levies and charges has increased year on year and currently lies at six different levies (the 'EEG levy' (renewable energy), the offshore liability levy, the 'KWK levy' (combined heat and power), the concession levy, the 'Section19 StromNEV' levy (power grid compensation) and the levy for interruptible loads). In 2014, these made up around 50% of the net electricity price. The 'EEG levy' has been pushing costs up the most, lying at 6.24 cents per kilowatt hour in 2014. Compared to the year before (5.277 Ct/kWh), it has risen by 18.25%. TSR managing director Bernd Fleschenberg put it in a nutshell: "Achieving energy efficiency is extremely impor-

tant in all areas of our business if we are to counteract this trend of ever growing electricity costs. This is the only way to guarantee that our processing equipment – for example our shredders, shears and balers – can be run in the most cost-efficient way so that we can compete with businesses operating in neighbouring countries such as Holland and Belgium where electricity is, on average, much cheaper. Saving energy is a must so that TSR can maintain its strong competitive position in the future, too."

Protecting the climate and cutting costs thanks to the energy management system

TSR identified this trend towards ever-rising energy costs and consumption very early on. In response to this, therefore, it decided to take action to achieve energy efficiency and, as a result, cut costs and so make an important contribution towards preventing climate change. Thanks to the recently introduced energy management system, TSR has been able to draw up a transparent overview of its energy consumption and develop key performance indicators as an energy benchmark. This includes indicators such as the number of kilowatt hours a machine consumes to process one tonne of material or how many litres of diesel an excavator requires for each operating hour. These will help them to

"Saving energy is a must so that TSR can maintain its strong competitive position in the future, too."

Bernd Fleschenberg, Managing Director at TSR

identify inefficient "consumers" and allow them to introduce measures to realise cost savings.

TSR has succeeded in taking advantage of the energy management system and has already managed to reduce its energy consumption. And this success proves that these metal recyclers were right. In the first year alone, savings have been achieved by reducing the idle current. Moreover, an old diesel-run cable excavator in Duisburg was replaced with a new 'balancer crane' which consumes approx. 25% less energy than its predecessor.

A further measure introduced into the Duisburg facility has been to increase shredder throughput and, at the same time, cut electricity input by around 6 kWh per tonne. These savings were made possible by improving the mode of operation and switching to the so-called "full-box shredding" which makes the most of the shredder's capacity. Put in figures, electricity consumption has been able to be reduced by 600,000 kWh. Following this successful "pilot test" in Duisburg, the plan is now to have introduced this energy management system throughout the whole of the company

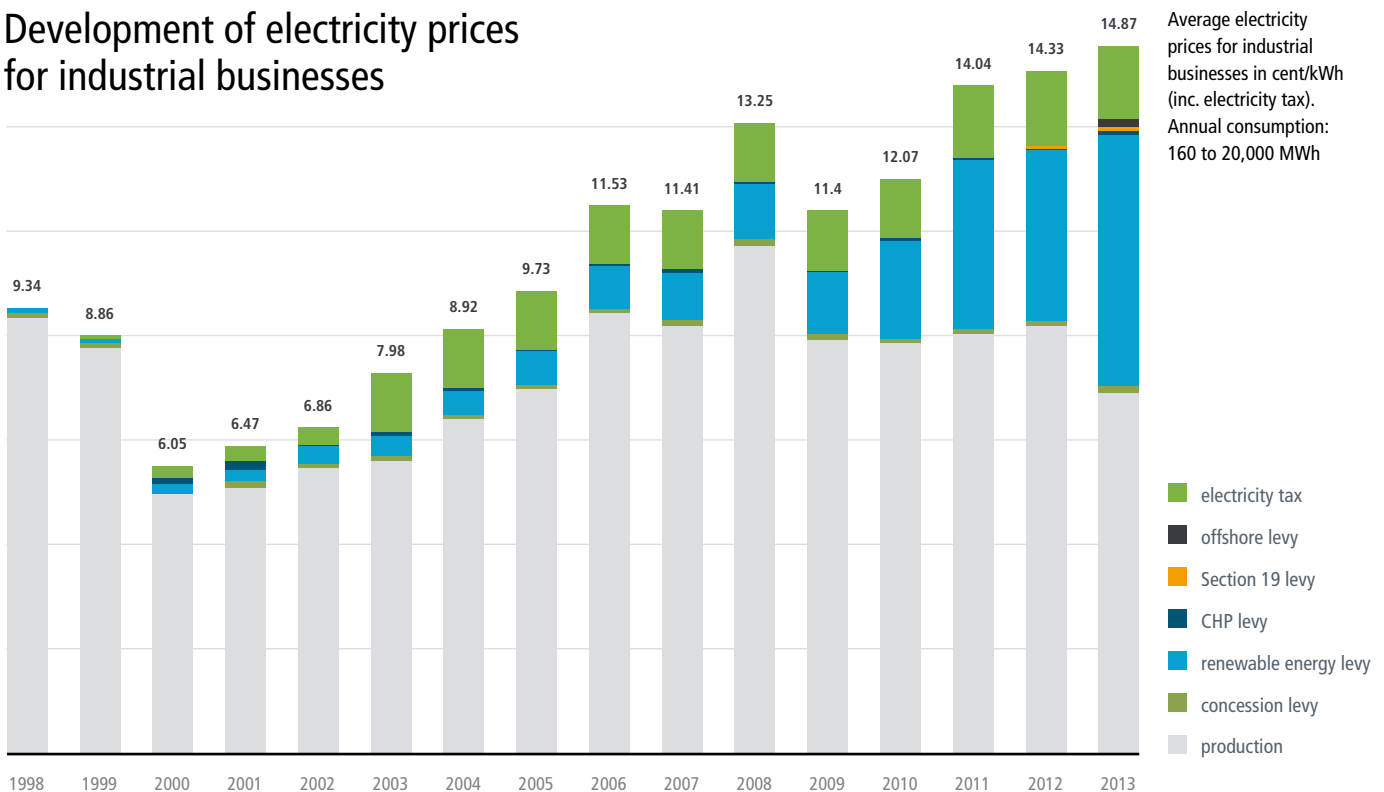


The ongoing monitoring and optimisation of the facilities is part of the initiative to save energy

by the end of 2015. By doing so, the TSR branches can create an energy consumption benchmark to identify the most energy efficient processes and then transfer these, where needed, to other branches. To sum up: TSR is protecting the environment more than ever before and cutting its costs by planning ahead and acting proactively.

By increasing its energy efficiency, TSR is becoming more sustainable and cutting its costs

Development of electricity prices for industrial businesses



Raw materials

New solutions for aluminium recycling

INTEGRAL CONCEPT & SPECIAL PROCESSES CREATE KEY ADVANTAGES

The technology required to recover light metals is becoming more and more complex. Bameta, a company in which TSR owns a share, has been making important progress in this area, helping to set the course for the future. The company has built a state-of-the-art recycling facility in the south German city of Buchloe. This plant not only fulfils the highest of standards, it also addresses the major challenges of aluminium recycling and has introduced some innovative solutions.

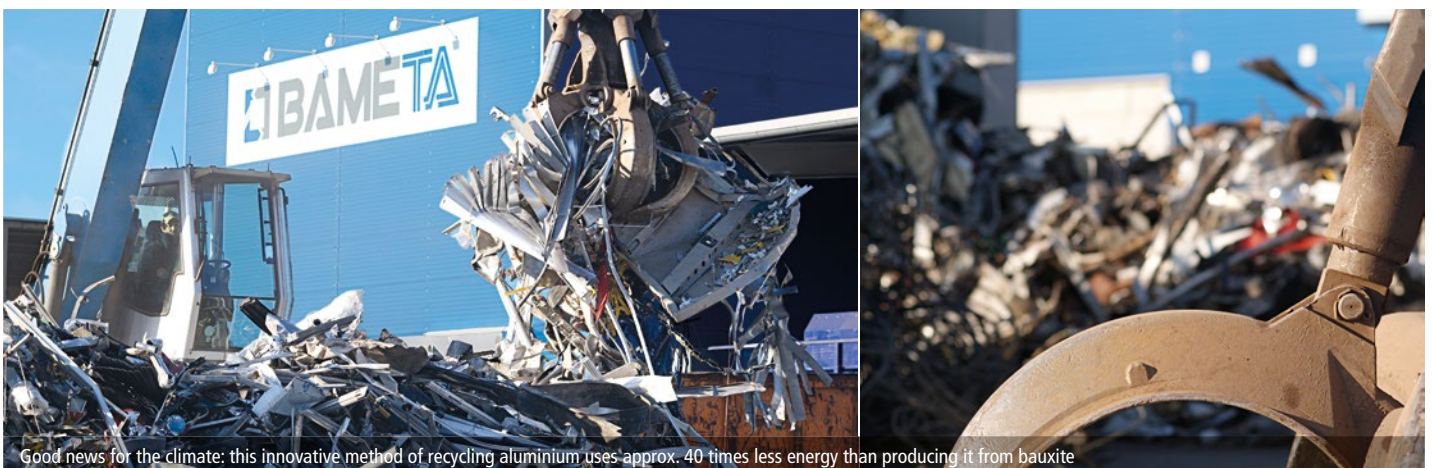
The key advantages of Bameta's recycling facility: its extended treatment capabilities and the fact that volumes can be bundled together

Nowadays, scrap recyclers are having to face new conditions: on the one hand, the volume of materials is increasing as devices are being exchanged for newer products at an ever faster pace. On the other hand, the composition and the share of recyclable materials in the fractions are changing. Ever greater efforts are, for example, being made to use lighter materials in products and the range of substances used is also growing. At the same time, greater numbers of composite materials are being installed in devices. The result is a greater share of mixed batches of substances which are

unable to be separated according to type. Fewer and fewer materials can, therefore, be recovered that can be sent straight back to the smelting plants.

Stringent requirements must be met

Increasingly, more sophisticated technology and more intensive processes must be employed to make it possible for recyclable materials to be re-used. Aluminium, in particular, must be carefully sorted and cleaned before it can be sent back for smelting. It is very difficult to thermally clean



Good news for the climate: this innovative method of recycling aluminium uses approx. 40 times less energy than producing it from bauxite



Christian Hein, Plant Manager at Bameta GmbH, (right) and his colleague, Herbert Mühlbach, are already planning the first steps to begin extending the plant's capacity

sity. A comprehensive quality assurance system is in place that includes samples being taken and analysed in the facility's own laboratory during the actual treatment process. Up-to-date information about filling levels and production data are recorded in real time during the production process. Moreover, stocks are checked and monitored online.

High-tech speeds things up

One of the challenges here is the different batch sizes and contents which arrive at irregular intervals and differ from region to region. As each batch has its own special requirements, the treatment process becomes more complicated with different types of technology and different settings having to be employed. Bameta, however, has found a suitable solution

Whilst planning and building the plant, focus was put on the future requirements and measures needed to guarantee the most effective protection of the environment

for this problem, too. Specific "formula" have been entered into its state-of-the-art control system which can then be called up and used whenever required. This cuts out the time-consuming task of resetting machinery in the facility, enables products to be swapped quickly and ensures the final product is always of the same high quality.

Plans to double the facility's capacity

Bameta's recycling plant was commissioned in the middle of March and is an example of one of the strategically important investments made by TSR. Approximately 15,000 tonnes of material are expected to pass through the facility during its first year of operations. Capacity will then be steadily increased after this period. Indeed, plans are to run a two-shift operation and have reached the 30,000t mark by the end of the following year. Christian Hein, plant manager at Bameta GmbH, commented: "The classic scrap trade is currently undergoing a change. Thanks to our new facility, we can already provide an answer today to the questions of tomorrow."

aluminium due to its high affinity for oxygen and its low melting point. Aluminium smelting facilities, however, have set very high standards in this area. Often just a single digit after the decimal point is sufficient for the material not to meet the quality criteria.

Quality-assured processes

Bameta, a specialist in recycling light metals, is a subsidiary of TSR Recycling, a company belonging to the REMONDIS Group. One of Bameta's main specialties is treating polluted aluminium scrap. To be able to do this, the company has developed its own special process which addresses current and future requirements regarding the changing composition of scrap and takes the specific demands of processing aluminium into account. Thanks to this innovative process, the company is able to recover high quality fractions which can be returned straight away to production cycles. For the most part, remelting is no longer necessary. All types of composite materials are treated at Bameta's facility. Besides aluminium scrap, input materials also include light iron scrap and intermediate fractions from processing facilities. The treatment process consists of a number of different stages. Depending on the material, it is cut up, screened and sorted according to electrical conductivity, shape, colour and den-

Mobile cleaning service for bulk containers

BUCHEN FREES SILOS OF DEPOSITS



REMONDIS' subsidiary, Buchen, offers a highly specialised service for cleaning contaminated and clogged up bulk containers: its mobile silo cleaning service. The cleaning work is carried out using cutting-edge equipment and is fast, efficient and safe as the cleaning operatives do not need to climb into the container at any time.

Whether it be coal, fertiliser, plaster, cement, cereal, animal feed, salt or clay: no matter what substance is kept in silos, at some stage or other it is going to adhere to the walls or form clumps. This not only results in a build up of debris but also slows the flow of material down and reduces the space available for storage – a classic case for Buchen's mobile silo cleaning team.

Modular equipment

Besides needing to have the relevant experience and know-how, silo cleaning work also requires highly specialist equipment. It is precisely for this reason

that Buchen employs special cleaning systems that create a number of advantages. No matter which appliance the team uses, they never have to actually climb into the containers making the task much safer for them. Indeed, this aspect of their work is an important argument in their favour for customers operating in, for example, the food processing industry as such businesses are subject to stringent hygiene regulations. Their work processes are also ideal for the chemicals industry as Buchen's gear is both anti-static and spark-proof and so meets the industry's very strict safety standards.

The company uses a modular system for its cleaning work. The various appliances, therefore, can be installed quickly, can be adapted perfectly to the conditions on site and only require a 380 volt power supply. All types of deposits are easily removed with this equipment – and in silos up to 45 metres deep.

High performance systems

The actual choice of system depends on the requirements of each individual project. In many cases, the team employs the BinWhip®

2,800



With around 2,800 employees and almost 70 business locations, Buchen is one of the leading industrial service providers in Europe

system – a portable hydraulic device that is powered by an industrial explosion-proof motor. The aluminium construction has a high strength, multi-part telescopic arm with a cleaning head attached to the end with flexible whips. This arm is inserted into the container via, for example, a hatch at the top of the silo from where the operative can precisely control the powerful device as it cleans the silo without damaging its walls.

One particular advantage of this system is that it is fully hydraulic. This enables higher torque levels and greater levels of performance to be achieved than would be possible with a conventional compressed-air system. To be able to reach the same level of impact, compressed-air cleaning heads must be operated at much greater speed which makes it more difficult to control their movements. Moreover, the hydraulically powered cleaning heads can be rotated in a clockwise and anticlockwise direction and they create less dust in the interior of the silo.

The BinWhip® system is often used in combination with the BinDrill® system – a drilling device powered by the

same hydraulic unit. This appliance is used, for example, if a bridge of material has formed inside the silo or the silo discharge section has become clogged up. In such cases, the Buchen experts first drill a hole through the material and then insert the cleaning head with its flexible whips through the gap into the inside of the container.

3,000 bar to remove clumps

If tonnes of material need to be detached within milliseconds, then the Buchen team uses the Cardox® system. The compacted materials are broken up by a rapid release of liquid carbon dioxide. Here, the system uses high strength, reusable steel tubes filled with liquid CO₂. The gas is activated by a small electric charge causing it to expand. It is then released via a discharge nozzle creating a powerful pushing force reaching pressures of up to 3,000 bar. If the container to be cleaned has permanently fitted tube sockets, then the compacted material can even be removed whilst production processes continue as normal. The Cardox® system is also able to be employed at high temperature, for example in waste incineration plants and furnaces.

Buchen is one of the first businesses in its industry to have been awarded the quality seal for industrial facility services by the quality assurance organisation, RAL

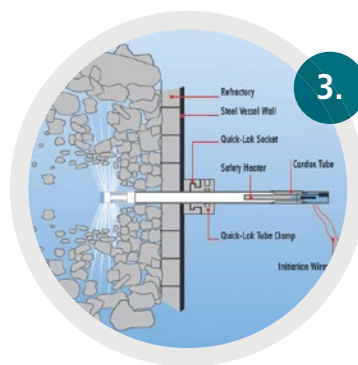
The three mobile modular systems for cleaning silos



The BinDrill® system can help if a bridge of material has formed inside the silo or the silo discharge section has become clogged up



With this silo cleaning system, the hydraulically powered whips attached to a high strength, multi-part telescopic arm gently remove the deposits from the container



The Cardox® silo cleaning system breaks up clogged-up material in bulk containers by suddenly releasing liquid carbon dioxide

Recycling

Training the kings of the road

THANKS TO ITS APPRENTICESHIP PROGRAMME, REMONDIS IS COMBATING THE GROWING SHORTAGE OF PROFESSIONAL TRUCK DRIVERS



Nowadays, many companies are finding it more and more difficult to fill their vacant positions. However, not only engineers, mechanical engineers and IT specialists are becoming a rarity but also qualified truck drivers. REMONDIS has taken action to counteract this trend. Training people to become qualified truck drivers is now an important element of its apprenticeship programme.

Subjects such as demographic change, the boom in the logistics sector, the lack of training opportunities, changing social values and, to a certain extent, the profession's negative image have all led to there now being a shortage of qualified truck drivers.

One of the consequences of demographic change has been a reduction in the working age population and this has clearly had an effect on this profession. The number of young people wishing to take up this job will not be able to compensate for the number of drivers who will soon be retiring. Experts have estimated

that over a third of the truck drivers currently on the road will be retiring over the next 15 years.

Besides demographic change, new social values have further aggravated this growing shortage of qualified truck drivers. One of the goals of modern working life is to achieve a positive work-life balance and more and more people wish to have this. The job of a truck driver is known to be both

A profession with a great future – there is a huge demand for professional truck drivers



The work of professional truck drivers is extremely varied – and at REMONDIS also involves regular and family-friendly working hours

psychologically and physically strenuous and this often puts people off entering the profession. This, in turn, has led to the profession having a negative image. This negative image, however, primarily reflects the work of long-haul truck drivers who travel across Europe for days on end and who are sometimes even forced to spend their weekends parked on a lorry park at a motorway service area. Looking at the lorry drivers in the recycling sector, who work regular hours and rarely have to drive more than a few hundred kilometres, this image is not only a cliché, it is also incorrect – as can be seen by taking a closer look at the truck drivers at REMONDIS.

The profile of a modern truck driver

In addition to having extensive technical knowledge of the vehicles and mobility, modern truck drivers stand out thanks to their logistics know-how, their knowledge of infrastructures and their just-in-time mentality. People interested in joining this profession, however, are often unable to do so as they are faced with a lack of training opportunities as many companies choose not to offer apprenticeship jobs in this area due to the organisational tasks and costs involved.

It is precisely for these reasons that REMONDIS believes it is extremely important to focus on attracting and supporting people wishing to enter this profession and so revive the old image of truck drivers as the "kings of the road".

REMONDIS offers a wide-ranging programme

REMONDIS has drawn up an interesting and varied training programme for its apprentices as can be seen at REMONDIS Süd GmbH in Rosenheim. As part of their course, the apprentices there learn how to handle fork-lift trucks, wheel loaders and diggers and discover first hand all about one of the important issues of the future, namely about 'raw materials from waste'. The young drivers help to carry out the pre-departure checks and ride along in the collection vehicles and other special vehicles – something "ordinary people" rarely have the opportunity to do. It goes without saying that the apprentices have to take the appropriate driving tests to get their licence to drive a truck. Thomas Albers, branch manager in Rosenheim, is really pleased with the apprentice-

ship course on offer for truck drivers-to-be: "Our branch in Rosenheim has definitely become more independent since the apprenticeship programme began. Thanks to the young drivers, who we have trained ourselves, we can operate far more flexibly when staff are on holiday or off sick. The apprentices can really support the team as they already have their licence to drive a truck in their second year of training, have already driven the regular routes and have already learned how to empty the paper containers and operate the special vehicles."

Focusing on social responsibility

Rosenheim clearly demonstrates that such apprenticeship courses are a complete success for all involved. REMONDIS



Thomas Albers, Branch Manager in Rosenheim, with some of his apprentices training to become professional truck drivers

successfully trains its apprentices, teaches them a wide range of skills and supports them as they plan their future career. In return, the apprentices further increase the value of the family-run business ensuring that the logistics chain runs smoothly each and every day.

This decision to offer a quality apprenticeship programme in one of the many modern professions further underlines just how important the subject of sustainability is at REMONDIS. Assuming social responsibility, alongside its economic and ecological responsibilities, is a central feature of the company's activities.

The company has become proactive in Rosenheim and is training its own truck drivers

New Hazardous Waste Recycling Facility for REMONDIS UK



FACILITY IN PRESCOT, MERSEYSIDE, FILLS A GAP IN THE RECYCLING SECTOR

REMONDIS UK has begun operations at its new hazardous waste recycling plant in Prescot in the north west of the UK. Strategically located in Merseyside between the industrial centres of Liverpool and Manchester, this facility will play an important role managing waste from its many municipal, commercial and industrial customers from the region and beyond.



The new facility is considered to be the most advanced of its kind in Europe and can process up to 69,000 tonnes. A whole range of materials will be able to be transferred and recycled here – from residual paints and varnishes, industrial solutions and oils to laboratory waste and many other types of wastes that need to be handled and treated with particular care. As a result, the plant is filling a gap in

materials as possible from the waste so that they can be returned to the commercial cycle. To be able to do this, REMONDIS provides its customers in the UK with a complete chain of modern services – from collecting, transporting and recycling the waste to marketing the reclaimed raw materials.

“If Carr Lane is anything to go by, REMONDIS can only be good for the economy and good for the environment.”

Steve Moore, Director of the North West Environment Agency

the recycling market in this region whose largest cities, Liverpool, Manchester and Leeds, have always been among the most important industrial cities in Europe, and not just since the Industrial Revolution in the 19th Century.

The subject of sustainability is, of course, a guiding principle in the United Kingdom as well – a subject that has been influencing REMONDIS' business activities for many years now. The goal both here and there is to recover as many

This recycling plant in Prescot will see REMONDIS UK's operational capacity increase by more than 330%. The facility guarantees the safe and professional transfer and recycling of significant volumes of hazardous and non-hazardous waste. Operating 24/7, 365 days a year, it is also in the best possible position to handle emergency spillages at its industrial customers and so prevent such accidents from having a negative impact on the environment. Complying with the strictest of environmental standards, the recycling and treatment processes are carried out using state-of-the-art technology. A full monitoring system for air and liquid waste emissions ensures that nothing leaves the site without being checked. Around 40 members of REMONDIS' staff have moved from the company's site in Bolton to the new Carr Lane plant and new jobs have also been created. Thanks to the opening of the new plant, REMONDIS has contributed to further growth in the region.

69,000
tonnes

Able to accept 69,000 tonnes a year, the plant will help to ensure that the waste generated in this industrial region in the north west of England can be safely recycled



Steve Moore, director of the North West Environment Agency, was impressed by the new site: "It is fantastic to see a global business like REMONDIS starting to make a real impact in the UK. The site here at Prescot, Merseyside, will obviously set a new benchmark for the hazardous waste industry. The thinking that has gone into the design of this plant is exceptional – both in terms of creating an effective business process and keeping environmental protection at its heart. We look forward to working with REMONDIS on this and its wider investment into the waste industry in the UK. If Carr Lane is anything to go by, REMONDIS can only be good for the economy and good for the environment." His Worshipful The Mayor of Knowsley, Councillor Brian O'Hare, appreciated the high environmental standards of

the facility and underlined just how important such an investment is for the local job market: "I was very impressed by the high standard of the facilities and the layout of the plant, as well as all of the measures which REMONDIS has put in place to cater for any eventuality. In addition, I welcome the recruitment process which has ensured employment for local people, as well as developing a knowledge base in Merseyside for the unique process being carried out to ensure the recovery of materials for recycling or reuse in other industries."

The recycling processes meet the strictest of environmental standards



Recycling

Staying "cool" with high-tech

REMONDIS INVESTS HEAVILY IN FIRE PROTECTION AND WORK SAFETY MEASURES

Thermally treating waste which cannot be used for materials recycling is per se a good thing. The property of this waste that makes it suitable for this form of treatment, i.e. the fact it burns well, can cause problems elsewhere however. Under no circumstances should a fire be allowed to break out when waste is being pre-treated, sorted and packed. Not only would such an event mean the recyclable materials would be lost for ever, the plant machinery would be damaged or, in the worst case scenario, be destroyed. It goes without saying that top priority is always given to keeping both employees and local residents safe. REMONDIS has, therefore, been planning ahead and has invested heavily in fire prevention measures.

A fire is detected within seconds so that it can be put out just as quickly

Wherever work processes involve inflammable materials, it is always advisable to have extra special targeted preventative measures in place which can detect a fire in its very early stages and put it out. REMONDIS has recently invested money and technology at a number of its facilities to ensure that a fire is put out within seconds of it starting so that it is unable to develop and cause greater damage.

At Entsorgungsgesellschaft Mecklenburg-Vorpommern in Bargeshagen near Rostock, a company in which REMONDIS owns a share, a total of 16 interconnected infrared and UV sensors have been installed that can detect an unusual increase in temperature in the input material long before a person could possibly pick up the danger. In such a case, the sensors set off the fire extinguishing system within just a few seconds so that it is impossible for a fire to break out. Other investments include a new mobile poly fire-fighting system using so-called CAF (compressed air foam). CAF employs a

process whereby the extinguishing agent is mixed with water under great pressure to create a foam making it easier to zero in on a particular area and, if required, from a distance. Furthermore, 100,000 EUR alone were invested in a new air cleaning system run using state-of-the-art technology with a combination of bio and activated carbon filters which clean the exhaust air in the plant in the best possible way and prevent any pollutants from being released.

Similar technical measures have also been installed at other locations. These new systems can sound the alarm within just a few seconds. Within moments the water to put out the fire (2,000 litre/minute at 10 bar) can be accessed so that damage to people, machinery or the environment can be prevented. Put simply, REMONDIS has placed safety at the very top of its list of priorities.

Sustainable energy savings

NEW ELECTRICAL EXCAVATOR SHOWS HOW THE FUTURE CAN BE FREE OF CARBON EMISSIONS

REMONDIS' branch in Ertfstadt near Cologne has entered a new age of pre-treatment logistics with its acquisition of a new electrical excavator (model: MHL 820). Up to now, professional businesses have been reluctant to use electrically run vehicles for moving medium to heavy loads. The reservations towards such technology appeared to be too great as it requires an external source of energy and – unlike engines run on fossil fuels – is dependent on a lead. The tide, however, is turning thanks to clever technology and a number of advantages. Electrical excavators are now a genuine alternative. REMONDIS has picked up on this trend and taken the first step towards sustainably saving energy.

The first thing a person notices when they enter the large hall at REMONDIS' facility in Ertfstadt is that it is relatively quiet. Indeed, they might even think that a shift is ending and a new one just starting or that some of the machines have been turned off. Then, though, they see the arm of the new excavator removing specific areas of material from the input pile and feeding it into the shredder to create, as far as possible, a homogenous mixture. The driver sitting in his cab is handling the excavator in the same efficient way he would his old diesel-run excavator only there are no loud engine sounds nor is there a smell of diesel in the air. Where would such a smell come from? The energy for the excavator comes from an electrical socket. There are no emissions, no soot, no fine particulates. For a business working with waste, the air is by comparison clean.

Low energy consumption – little maintenance work

The MHL 820 not only means there are no emissions and that it is relatively quiet in the enclosed hall, it also cuts energy consumption by up to 25%. Whilst the first generation of electrical excavators also had these advantages, they had the disadvantage of not being mobile. The equipment was unable to propel itself forward as it lacked its own source of power such as that provided by a conventional engine. In contrast, the new electrical excavator has absolutely no problem moving its own weight (21 tonnes) from one place to another. The reason for this: a so-called 'Power Pack' has been installed in the vehicle, a kind of selectable range extender in the form of a small diesel unit which feeds its energy directly into the batteries and then transfers it to the wheels. Once the excavator has reached the place it needs to be in, everything is run electrically again. And this is precisely what the next big advantage is of the electrical excavator. Reinhard Hohenstein, managing director of REMONDIS Rhineland, describes it thus: "The new excavator hardly ever has to be moved as it doesn't need to be filled up. The excavator run on diesel had to stop its work three



times a week and be driven to the filling station. In all, almost 2 hours of production had to be halted – valuable time which is now saved thanks to the electrical excavator. It just keeps on going."

This emission-free work with the electrical excavator helps to improve the atmosphere and is healthier for the employees and so increases work safety. Less time is needed to maintain and service the vehicle. Besides checking the hydraulic oil, the filter and, from time to time, the air conditioning system in the driver's cab, there is very little left to service. So what does it feel like to handle such a modern excavator? Johannes Ungermann, one of the drivers at REMONDIS in Ertfstadt, put it in a nutshell: "The excavator is not only quieter, it runs far more smoothly and vibrates less. It is more stable, too, as the power transmission is simply better as a result of the torque. Sitting in the cab, you can feel how the machine is being permanently and steadily provided with energy rather than having to step on the accelerator all the time." Thanks to this acquisition, REMONDIS in Ertfstadt is leading the way as it heads towards creating a logistics system that is not only quiet but free of emissions, too.

The electrical excavator saves energy, helps to prevent climate change and is healthier for the employees



Recycling

CASUL – A multi-talent reflects megatrends

REMONDIS' REMARKABLY WHITE MINERAL NOT ONLY HAS GREAT PROPERTIES, IT IS ALSO ECO-FRIENDLY AND EXTREMELY SAFE



CASUL is an industrially produced, synthetic product that is manufactured by REMONDIS using a patented process it developed itself. This "high-tech white mineral" is in high demand in a wide range of sectors. No matter whether it is used by the paper, paint or construction chemicals industries or for fire prevention measures, CASUL helps companies to reduce the amount of organic additives they need. Moreover, the special features of this product are in keeping with some important megatrends.

Megatrends have a huge influence on both society and the economy. In the best case scenario, they can lead to a discernible change in consumer behaviour which, in turn, can bring about a positive and sustainable change to our way of life. Two of the consumer trends of the future are 'neo-recycling' and the growing demand for products to be absolutely safe.

Neo-recycling focuses on sustainable production methods. Whereas recycling has had a slightly negative image in the past as it has been associated with waste, there is a growing trend to turn 'shabby to chic'. Besides helping to conserve our planet's natural resources, the goal of neo-recycling is to take a product and give it a unique character which reflects both sustainability and quality. CASUL scores points in all these areas as this synthetic mineral is only produced from secondary raw materials – primarily from the sodium aluminate 'ALUMIN HQ', a recycled product from REMONDIS. As CASUL substitutes the extremely rare primary raw material, ettringit, the product embodies the "shabby to chic" trend and makes an important contribution towards conserving natural resources. This is not, however, the only way it protects the environment. It is also odourless and biodegradable and enables many industries to manufacture products without the use of harmful biocides, preservatives or softeners.

CASUL is also absolutely at one with the megatrend for healthy and safe products. Today, one of main demands of modern industrial societies is to be able to "lead a healthy life". CASUL helps this demand to be met as its production processes focus on safety and purity. CasuBlanca, an ecologically safe wall paint produced using CASUL, is not only a high quality and remarkably white product with an extremely high covering capacity. It is also particularly suitable for allergy sufferers – something completely unique among wall paints. ECARF (European Centre for Allergy Research Foundation) has confirmed that CasuBlanca is a completely safe product by awarding it its quality seal which allergy sufferers look for to find suitable anti-allergy products and services. The FDA (Food and Drug Administration) certificate for the food industry has also been issued for the product – a further example, therefore, of just how safe it is. This certificate is handed out by the US authorities, the FDA, to protect public health.

With its group of CASUL products, REMONDIS has shown once again just how important sustainability and safety are when it comes to manufacturing its own products. REMONDIS is, therefore, already taking on the responsibility today for the megatrends of the future.

CasuBlanca, a non-toxic wall paint produced using CASUL, fulfils the highest standards and is also particularly suitable for allergy sufferers

Recycling

Take-back systems for new environmental technologies

REMONDIS IS RESEARCHING INTO THE RECYCLING OF COMPOSITE INSULATION BOARDS

Germany's so-called 'energy turnaround', i.e. to change its energy supply from fossils to renewables, is in full swing even if the process has been slowed down a little as a result of the new political constellation in Berlin following the last general election. The move towards wind power, photovoltaics and improving energy efficiency levels of buildings is progressing faster than originally planned. If this hugely important project is to be a true success, however, then the question of how to recycle this new environmental technology must also be taken into consideration right from the start.

Wind turbines also have a limited 'shelf life'. The same is true for solar cells and the material used to insulate buildings. If a truly sustainable energy sector is to be created, then it must include the recycling and extensive re-use of the materials that make such an energy turnaround possible in the first place. REMONDIS is, therefore, calling for the creation of take-back systems targeted precisely at such materials so that sustainable processes can be set up to ensure such energy technology is returned to the economic cycle. Germany has not been slow to introduce take-back systems in the past. There are now take-back systems for waste electrical equipment, for batteries, for old industrial and commercial plastic packaging and there is even a take-back system for used photovoltaic modules, the latter being the first step ever taken to recycle renewable energy equipment. However, simply taking back a material is not enough. It is a long path before a commercially viable recycling method can be developed.

This is precisely what REMONDIS' recent pilot test has been looking at. As part of its research and development activities, the company has been working together with students at the University of Münster and carrying out practical tests to see whether the individual parts of composite insulation boards, which are being used more and more on buildings nowadays, really can be separated from each other and

recycled. These tests are being held at R&R Rohstoffrückgewinnung und Recycling's plant in Mettmann in North Rhine-Westphalia, a company partly owned by REMEX. The results have been promising. The tests have shown that it is possible to separate the individual components of these boards without having to change the everyday operations of a construction waste sorting facility. Looking at the majority of the output, however, it has not yet reached the quality for materials recycling. Initial conclusions are that the components could be separated more cleanly from each other by changing the amount of time the material spends in the mechanical sections of the plant or storage areas or by using other types of mechanical processes. The next tests to be carried out by the University of Münster will shed further light on this issue.



REMONDIS®
WORKING FOR THE FUTURE

REMONDIS is carrying out tests to develop ways of recycling composite insulation boards

News in brief

REMONDIS acquires share in Högl T.E.O. GmbH

REMONDIS acquired a 49% share in Högl T.E.O. GmbH at the end of January. Högl T.E.O. GmbH, a family-owned firm based in the Bavarian town of Volkenschwand, primarily focuses on developing and implementing technologies to generate renewable energy from organic materials and other substances. As a result of this transaction, both companies now aim to work together to intensify their activities in the areas of processing biowaste, generating biogas and operating biogas plants in Bavaria. This new associated business is already making an important contribution towards helping the region achieve its planned "energy turnaround", i.e. changing energy supply from fossil fuels to renewables.

REMONDIS managing director, Frank Gärtner, underlined the importance of this transaction for REMONDIS: "Högl T.E.O. GmbH is an ideal addition to our business activities in a region that can guarantee a steady supply of top quality biomass thanks to its rural structure and the many agricultural and food processing businesses located there. By digesting this material and transforming it into electricity, REMONDIS and Högl are, together, making a valuable contribution towards generating carbon-neutral energy and so preventing climate change." As a result of this investment, REMONDIS is stepping up its commitment to energy generated from biogas.

News in brief

REMONDIS supports educational work at schools in the City of Saransk

In 2012, a new kerbside collection system was introduced into the City of Saransk which allowed different waste streams to be segregated and collected separately. Since then, the schools there have picked up on this subject and begun teaching in class about the importance of separating recyclable waste. 10% of waste from the city's households is already being sorted and processed. "Such a result is very important for environmentalists," explained Alexander Makejtchev, Deputy Minister for the Environment of the Republic of Mordovia.

Being responsible for waste management in the City of Saransk, REMONDIS has also stepped up its efforts to teach and inform those living there about this subject, in particular the younger generations.

"300 tonnes of waste are collected in Saransk every day and taken to landfill. That is a lot of material," said Svetlana Bigesse, general manager of OOO REMONDIS Saransk. "We need a segregated waste collection system to reduce the amount of waste being sent to landfill."



Every day, over
300t
of waste are collected
in Saransk and taken
to landfill

Court gives green light for REMONDIS' waste paper collection service

With its ruling of 24.09.2013 (4 A 1163/10), which has since become legally binding, the Hanover administrative court determined that REMONDIS may continue to offer its free kerbside collection service for old paper in the Hanover region. The judges concluded that the regional Hanover authorities did not have the right to forbid the private sector company from providing this service and dismissed their claim that such a service affected the economic interests of their municipal association, Zweckverband Abfallwirtschaft Region Hannover (aha). As a result, REMONDIS may continue to distribute its so-called "blue bins" to the households in Hanover so that they can use them for disposing of their old paper. Households which choose to use REMONDIS' paper bin are not obliged to use one of aha's bins as well.

REMONDIS believes that the court's ruling in favour of the private-sector waste paper collection service will serve as a model for other regions. Attempts have repeatedly been made in the past to try and get courts to forbid the private sector from collecting old paper. It is being shown more and more, however, that these attempts to prevent fair competition are not legal.



German Taxpayers Association: new study highlights the risks of public sector business activities

It is a question that is highly controversial and much discussed. Are local authorities the better entrepreneurs or should business activities be left to private sector companies that have to face competition every single day and provide the best service at a fair price? The German Taxpayers Association (BDSt e. V.) recently looked at this question in more detail and conducted an interesting study in which they examined the business activities of local authorities and mu-

nicipal companies and the risks connected to these. Besides looking at the scope and significance of municipal business activities, the study also addressed the subject of motive. The problems of the public sector becoming involved in business are described in great detail, with the association using vivid and sometimes bizarre examples to back their conclusions. Further information can be found, together with the study itself, at the BDSt's website (www.steuerzahler.de).



**Bund der Steuerzahler
Deutschland e.V.**

Close to their customers

REMONDIS NAMES ITS SALES EMPLOYEES OF THE YEAR

Our economy would not be able to function without the many sales people who are on the road every day in order to stay in close contact with their customers. Gudrun Rodday, Sabine Sommer, Christian Decker and Martin Pawelczik were recently named the most successful sales employees of 2013 and have now been honoured by REMONDIS Board Member, Thomas Conzendorf.

Named the most successful sales employees of 2013: (from left to right) Christian Decker, Sabine Sommer, Gudrun Rodday and Martin Pawelczik



These four success stories clearly show just how important it is to have direct contact with customers

Gudrun Rodday has a degree in chemical engineering and is a mother of three. For a while, she had an office position in the sales department to be able to manage her family and job commitments but over time she wished to be closer to her customers again. "I am a naturally curious person and I'm always asking myself what the customers at the end of the phone wish to get rid of and how we can best help them. To be able to that, though, you have to go to where the waste is being generated, i.e. to the customers." Today, Gudrun Rodday works at REMONDIS as a key account manager and is the contact person for the company's customers from the chemicals industry and other sectors. "I really appreciate the trust the customers put in me and enjoy our mutual success for which I am very grateful."

Sabine Sommer entered the recycling sector after finishing high school and completing an apprenticeship to become a chemical laboratory assistant. Having held a number of positions at various waste management firms, she successfully took part in a management trainee programme at a company of the former RWE-Umwelt Group before joining REMONDIS. Today, Sabine Sommer is responsible for supporting key customers, in particular in the area of hazardous waste, a job she really enjoys. The many things she has experienced during her 20 years of working in sales could fill books but she is happiest when she is on site at her customers'. Her motto: "Carpe diem – I love life and sales is fun. The perfect recipe for success."

Christian Decker is 28 years old and so has not been working quite as long but he has become one of the most successful sales employees at REMONDIS within a very short period of time. Interested in both technology and people, he first completed an apprenticeship to become a car mechanic before studying mechanical engineering at the (FH) University of Gießen. Fortunately for REMONDIS, he decided to move to Trier where he began working in sales in 2011. "Having looked through REMONDIS' website, I knew that I wanted to work there." Since 01 January 2013, Christian Decker has held the position of key account manager focusing on acquiring new customers and providing existing key customers with the support they need, in particular for building and industrial projects.

Martin Pawelczyk joined REMONDIS after finishing school and doing an apprenticeship to become an industrial clerk. He then completed a degree course in Economics studying part time alongside his job. Having held a number of office jobs in the sales department at REMONDIS Rhein-Wupper in Düsseldorf, he then became a member of the fieldwork team in 2011 where he was responsible for visiting customers from the worlds of industry, trade and commerce. Since 2013, he has become increasingly involved in the area of key account management. Martin Pawelczyk really enjoys his work at REMONDIS: "I meet new and interesting people every day and no two days are ever the same." One of the secrets behind his success is working one to one with other people. REMONDIS wishes all four winners continued success and fun in their work with and for their customers.

> Impressions



◀ Archbishop Samuel Kleda from Cameroon visiting the Lippe Plant in January (from left to right): REMONDIS Board Chairman Ludger Rethmann, Archbishop Samuel Kleda, Mario Löhner, Mayor of Selm, and Padre Albert from Cappenberg



▶ Norbert Rethmann with the dignitaries symbolically putting the new tunnel composting facility in Singen-Constance into operation



▶ Garrelt Duin, (third from right) Minister for Economic Affairs, Energy, Industry, SMEs and Trade for the state of North Rhine-Westphalia, learned more about the Rethmann Group's activities in NRW during his visit to the Lippe Plant in February (from left to right): Andreas Bankamp, Managing Director of REMONDIS Aqua, Markus F. Schmidt, Managing Director of REMONDIS Energy & Services, Rainer Schmelzter, Deputy Parliamentary Party Leader (SPD) at the State Parliament for North Rhine-Westphalia, REMONDIS Board Chairman Ludger Rethmann, Minister Garrelt Duin, Rhenus Board Chairman Klemens Rethmann and Dr Werner Kook

▶ A REMONDIS wheelie bin has made it into a shop window in Münster where it is being used as decoration



▶ Hannes Jaenicke during the filming of the RTL film "Helden" (Heroes) which took place on REMEX's grounds in Cologne



REMONDIS®

WORKING FOR THE FUTURE



A lot of people talk rubbish. We recycle it.

Iron makes up 95% of all metals processed by the industry worldwide. Germany alone needs to import about 39 million tons of iron ore every year. This is an expensive dependency for which there is only one remedy: Recycling! Tinfoil is a good example. Every year 95% of the material stays in the country to be recycled, because if you need tinfoil, you must recycle it. And that is one of the things we do – regional, national and international.

REMONDIS SE & Co. KG // Brunnenstr. 138 // 44536 Lünen // Germany
T +49 2306 106-0 // F +49 2306 106-100 // info@remondis.com // remondis.com