

The REMONDIS Group magazine

REMONDIS AKTUELL

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Recycling paper – preventing climate change

Using old paper to save our forests

Guest article

Bishop of Essen Dr Franz-Josef Overbeck
on how recycling helps to protect our
environment

REMONDIS Netherlands

REMONDIS acquires the Dusseldorp Group
expanding its range of services for its Dutch
customers

The boiler specialists

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Max Koettgen, REMONDIS Board Member

Dear Readers!

At the beginning of December, delegates from 195 UN member states and the EU travelled to Paris to try and find a compromise to curb global warming – a compromise which all countries should then honour. Their primary goal has been to find a new agreement to replace the Kyoto Protocol which ends in 2020. They had not reached the end of their deliberations when this magazine went to print but one thing has become very clear: the significance of the recycling industry as a means to preventing climate change continues to be underestimated. And yet there are so many excellent examples that demonstrate how sending waste for materials recycling not only protects our environment and conserves our dwindling supplies of natural resources but also helps to curb global warming. REMONDIS' Lippe Plant in Lünen reduces emissions of CO₂ equivalents by almost half a million tonnes every year by recycling waste and producing regenerative energy. And this is just one plant in REMONDIS' network of approx. 500 facilities. If the whole world were to use the full potential of the raw materials and energy hidden in waste, then recycling would put an end to global warming. Logically, Klima Expo NRW has accepted three more of REMONDIS' areas of expertise onto its list of qualified projects following the nomination of its biogas plant in Coesfeld at the beginning of the year. These and other recycling plants and projects will help to spread the message that recycling has a long list of advantages and is one of the best ways to counteract climate change.

Recycled paper is one of these raw materials that can help curb global warming: it can be used as a substitute for paper made from virgin fibres and so help reduce the need to fell our trees. The following figures clearly demonstrate that sustainable forest management is not at the top of every country's list. We are currently losing around 13 million hectares or 130,000km² of forest every single year. That is the equivalent to a forest the size of England being cut

down every year. Forests are an effective way of preventing climate change as each and every tree absorbs CO₂ from the atmosphere. Paper recycling helps protect our forests and probably has the biggest impact on the carbon footprint of our informed society which still turns to paper formats as their main source of information despite the presence of the Internet. REMONDIS provides the paper industry with huge supplies of high quality recycled paper, helping the sector to become more sustainable.

Sustainability, however, starts before recycling is actually needed. The European Waste Framework Directive puts re-use in second place after waste prevention and ahead of materials recycling. It is, therefore, a logical decision for Daimler, REMONDIS and a number of other partners to set up the world's largest second use battery storage unit made from used lithium-ion batteries at the Lippe Plant. The batteries, which will come from the growing number of electric cars, still have 90% of their storage capacity after they can no longer be used in the vehicles – more than enough to help stabilise the grid as more and more electricity is provided by fluctuating regenerative energy sources. After approx. 10 years use in this battery storage unit, the batteries can then be sent for efficient materials recycling – perfectly closing the life cycle of this product.

We would like to thank all our friends, partners and employees for their goodwill and loyalty throughout the past year and wish them a very happy Christmas and all the very best for the New Year.

Yours

A handwritten signature in black ink, appearing to read 'M Koettgen'.

Max Koettgen



126

REMONDIS collects and recycles
40 different types of old paper
at 126 business locations

Recycling paper to curb global warming

REMONDIS' PAPER RECYCLING OPERATIONS MAKE AN IMPORTANT CONTRIBUTION TOWARDS PREVENTING CLIMATE CHANGE

Forests are not only a symbol of nature's beauty, they are also biotopes that are hugely important for life on Earth. One hectare of forest stores, on average, 13 tonnes of CO₂ no matter what age the trees may be. Around 4.4 billion tonnes of CO₂ are currently being stored by German forests alone. They are, therefore, an effective way of reducing greenhouse gases and should be protected as such. It is hardly surprising that the term 'sustainability' was first coined by foresters. And yet far too many woods and forests are being chopped down, cleared and burned across the globe. Every one in five trees felled around the world is used to produce paper. Approximately 20 percent of these trees are from old growth forests – lost to us forever. The time has come, therefore, to take a look at the true value of paper recycling, something REMONDIS has been doing on a grand scale for many years now.

The majority of processed wood pulp comes from Scandinavian and Canadian forests. The results of these activities are dwindling stocks and the emergence of monoculture forests that are far more likely to be damaged by pests and bad weather conditions. In contrast, not a single tree needs to be felled for recycled paper. The pressure to use our forests as a source of raw materials is huge. This pressure is, however, greatly reduced by recycling old paper. Moreover, 60 percent less energy and up to 70 percent less water are needed to produce recycled paper compared to the production of paper from fresh pulp. Recycling paper generates much less CO₂ and reduces volumes of waste and emissions. Far fewer chemicals are needed for the recycling process than for producing paper with virgin fibres. The amount of pollutants in the wastewater is up to ten times lower.

Using virgin fibres to produce paper tissues makes absolutely no sense

All very good reasons, therefore, for recycling as much old paper as possible. Looking at the advantages of recycled paper, it is a mystery why manufacturers of paper tissues, kitchen roll and toilet paper are once again increasingly using virgin fibres in their production processes even though these single-use products will not be able to be sent for high quality recycling. REMONDIS has been talking to its partners and to politicians, calling for the amount of recycled paper currently being used to remain at a stable rate or even for it to be increased. Germany has always been a pioneer in this area and this is a role we should not give up lightly. The numbers truly are impressive.

From paper to old paper

In 2014, each person in Germany used, on average, 251 kilograms of paper and cardboard. Together, this adds up to a total 20.4 million tonnes. If this demand were covered by new paper alone, then three trees would have to be felled per person per year. Thank goodness the country has a recycling sector, as the waste management companies collected

15.1 million tonnes of old paper in the same year. This puts the paper recovery rate at around 74 percent – an impressive figure, especially when you consider that, since the record year in 2007, consumption fell by 13% as a result of the economic turmoil of the following few years. Throughout this time, recycling rates remained stable. More than one-tenth of the total volume of old paper – around 2.2 million tonnes – is collected, sorted and recycled by REMONDIS alone every year. To be able to do this, the company has a network of logistics systems and facilities at 126 different locations. REMONDIS' six state-of-the-art sorting plants carefully separate the 40 different categories of old paper strictly according to type. The company's paper recycling operations, therefore, are making a considerable contribution towards protecting our planet's natural resources and preventing climate change. The maths is simple: if more old paper is collected and recycled, then fewer trees need to be felled. But what exactly is the difference between recycled paper and paper made from virgin fibres?

Recycled paper can contain up to 100% waste paper. When paper is recycled, the old paper is first mixed with water and any non-paper materials, such as paper clips, removed. The ink is then extracted from the waste paper using the so-called de-inking process. A number of different chemicals are added here to wash this grey pulp. They disperse the ink particles, causing them to latch on to the soap which rises to the surface as foam where it is suctioned off. Short fibres are removed to ensure the paper remains tear-resistant. During the next stage, the pulp is bleached with oxygen or hydrogen peroxide. The acids and lye used during the de-inking process are far less harmful than the chemicals used to produce wood pulp. For the most part, recycled paper is bleached again with oxygen to make it even whiter. The days when recycled paper was synonymous with a low-quality grey product are long gone. Consumers can hardly notice the difference nowadays thanks to the environmentally friendly bleaching methods now being employed. ▶



Every tonne of recycled waste paper helps to protect our planet's natural resources and curb global warming

“Of all the raw materials able to be recycled, it is old paper that contributes the most towards protecting our environment and preventing climate change. REMONDIS is doing everything in its power to increase the amount of recycled paper used by the paper production industry.”

Thorsten Feldt, Managing Director of REMONDIS Trade and Sales GmbH



A comparison of the environmental impact of recycled paper and virgin fibre paper

	Recycled Paper (200 sheets = 1kg)	Virgin Fibre Paper (200 sheets = 1kg)
 Old paper	1.1 to 1.3kg	–
 Wood	–	2.2 to 2.5kg
 Water	10 to 20l	30 to 100l
 Energy	1 to 3 kWh	3 to 6 kWh
 Wastewater pollution (COD)	2 to 5g	5 to 50g

Source: Jupp Trauth,
Forum Ökologie & Papier
(Ecology & Paper Forum)



REMONDIS' newest business, WEKO, specialises in high quality waste paper

► Virgin fibre paper is made from wood. Approximately 50% of wood is made up of cellulose fibres, the most important source material for producing paper. Other contents found in wood include lignin and hemicellulose that act as a kind of glue binding the cellulose fibres together. Large volumes of energy and water are needed to extract the individual fibres from the wood. Wood pulp is produced by using chemicals to separate the cellulose from the other contents in the wood. The result is pure wood pulp paper, so-called "wood-free paper". "Wood free", however, does not mean that wood was not needed to make the paper but that the wood contents – namely lignin and the hemicellulose – have been extracted from the pulp with solvents. In contrast, paper made from pulp produced using mechanical pulping processes contains lignin and hemicellulose. This type of paper is less stable and turns yellow more quickly.

The more environmentally friendly alternative is without doubt to use waste paper to produce recycled paper. As a general rule, paper fibres can be recycled up to six times. The Federal Environment Agency (UBA) in Berlin has calculated that 50% fewer raw materials are needed to produce paper from waste paper compared to paper production using virgin fibres. Energy consumption is also 50% lower and water consumption a third of that required for virgin fibre paper. Not only is waste paper an eco-friendly source material for manufacturing paper, it is generated by practically every single household and business in the country. Recycling waste paper gives it a new lease of life, fewer trees need to be felled and energy and water can be saved. Nowadays, recycled paper is as white as non-recycled paper, available in a whole range of qualities and is suitable for practically all household products.

Every single tonne of waste paper that is collected and recycled, therefore, helps to protect our planet's natural

resources and curb global warming. Around two-thirds of all paper and cardboard products are already being made from waste paper. Many types of packaging are made solely from waste paper. Global demand for old paper is steadily rising. Manufacturers of paper and cardboard products need to know that there are sufficient supplies of waste paper as a raw material and that the quality is right. Being one of the largest companies in the waste paper industry, REMONDIS has been investing large sums of money in logistics and sorting technology across Germany to ensure it will be able to continue to supply the volumes and qualities required.

REMONDIS operates a number of high performance paper sorting plants, including Wertstoff Union Berlin (WUB), which it runs together with Berlin Recycling. This plant is able to process up to 120,000 tonnes of old paper generated by those living and working in and around Berlin every year. Both its plant in Frankfurt – run by FES, REMONDIS' biggest PPP – and its plant in Cologne Merkenich also have an annual capacity of 120,000 tonnes. Other paper sorting facilities can be found in Ravensburg and Buggingen. All of these facilities are so-called de-inking sorting plants. From here, waste paper collected from households is separated into three main categories: mixed paper, paper/cardboard from shops as well as de-ink products from newspapers, magazines and graphic papers.

WEKO – the latest business to join REMONDIS' paper operations

In 2015, REMONDIS purchased WEKO GmbH, a company based in the German city of Buttlar in the district of Thuringia. Thanks to this acquisition, it now has a further state-of-the-art sorting plant in its network that specialises in printing waste and high quality waste paper. WEKO also has a further facility in Fulda. WEKO has been recycling and trading in old paper for over 20 years now and has made

a name for itself across the country as an independent recycling business, in particular for high quality waste paper. REMONDIS' newest business supplies the paper industry with around 600,000 tonnes of high quality recycled paper every year.

A look ahead

The amount of paper being used around the world is growing all the time. Experts believe that annual global consumption will have risen from today's 350 million tonnes of paper to up to 440 million tonnes of paper by the end of this decade. The majority of waste paper is generated by households and the composition of this material is gradually changing. This change will have a huge effect on the market over the next ten years. The rapid growth in online sales – also referred to as the “Amazon effect” – will mean that more and more cardboard will be found in the old paper containers. This trend is already well underway. More containers will be needed as cardboard tends to take up more space which will push up the collection costs and affect the whole of the supply chain. Additional compactor capacities must be made available as well as an ever-growing number of customer-specific solutions. The whole of the sorting process will have to be adapted to meet the steadily changing composition of waste paper streams which means the paper sorting activities in the future will be very different to those of today. New sorting concepts will have to be found as quality expectations and product requirements – for example for food packaging – will also continue to rise.

Local authorities are passing on the risks

With all this in mind, the way municipal tenders are increasingly being used to pass these risks on to private-sector businesses can only be viewed with scepticism. On the one hand, local authorities are not prepared to guarantee a certain quality of material. On the other hand, they expect to receive payment for grades of paper that need several treatment stages and so are costly to recycle. A further problem is the basis being used for collecting data. Increasingly, indices such as the index of the Federal Office of Statistics are being deployed which are totally unsuitable for achieving meaningful calculations. There is a complete lack of transparency throughout the system concerning who reports the volumes, how many tonnes are included (weighted or unweighted tonnage) and who monitors the reports. Such rough calculations are not at all suitable for finding a fair market price.



The technology used to sort waste paper will also have to be adapted to meet the changing market conditions

International paper market will benefit as level of education increases

Prospects for growth are particularly good at international level. Experts believe that the so-called BRIC countries (Brazil, Russia, India and China) will find their volumes of waste paper rising as more and more of their citizens have access to education. There is also potential in many European countries to increase the volumes of waste paper collected. This is where politicians must play their part and set high recycling rates across Europe so that the private sector can invest in the infrastructure for collecting and sorting old paper.

REMONDIS already operates across the whole of Germany, drawing up bespoke sorting and recycling concepts with its partners and customers. With its team of highly qualified specialists, REMONDIS already has an excellent set-up enabling it to react flexibly to any changes to the market.

Sources: REMONDIS, Umweltinstitut München e.V. (Munich Environmental Institute), bvse Fachverband Papierrecycling (Federal Association for Secondary Raw Materials and Waste Management/Paper Recycling Committee), UBA (Federal Environment Agency), Stiftung Unternehmen Wald (a forest conservation organisation), United Nations Framework Convention on Climate Change (UNFCCC)



The rapid growth in online sales is changing the waste paper market

440
MILLION TONNES

Annual global consumption is expected to have risen from today's 350 million tonnes to up to 440 million tonnes of paper by the end of this decade

Guest article by Bishop Franz-Josef Overbeck

We will soon be celebrating Christmas. Many people will be getting together with their families to celebrate this festival in an atmosphere of harmony, each attentive to the others' needs. We often demonstrate this by exchanging gifts with one another – gifts which we have chosen and made or bought to give others pleasure and to show them how much they mean to us. More often than not, this giving of presents results in a mountain of waste – of torn wrapping paper, of so much lavish and now useless packaging, of so many objects, now obsolete as they have been replaced by something new. All these things must be collected and recycled. For me, Christmas – this Christian festival when we remember the birth of Jesus Christ when God became man – is the time that shows most clearly the two sides to our prosperous Western culture.

Essen Minster, built in 1275 with roots going back to 845, is in the heart of the German city of Essen and is the seat of the "Diocese of the Ruhr"

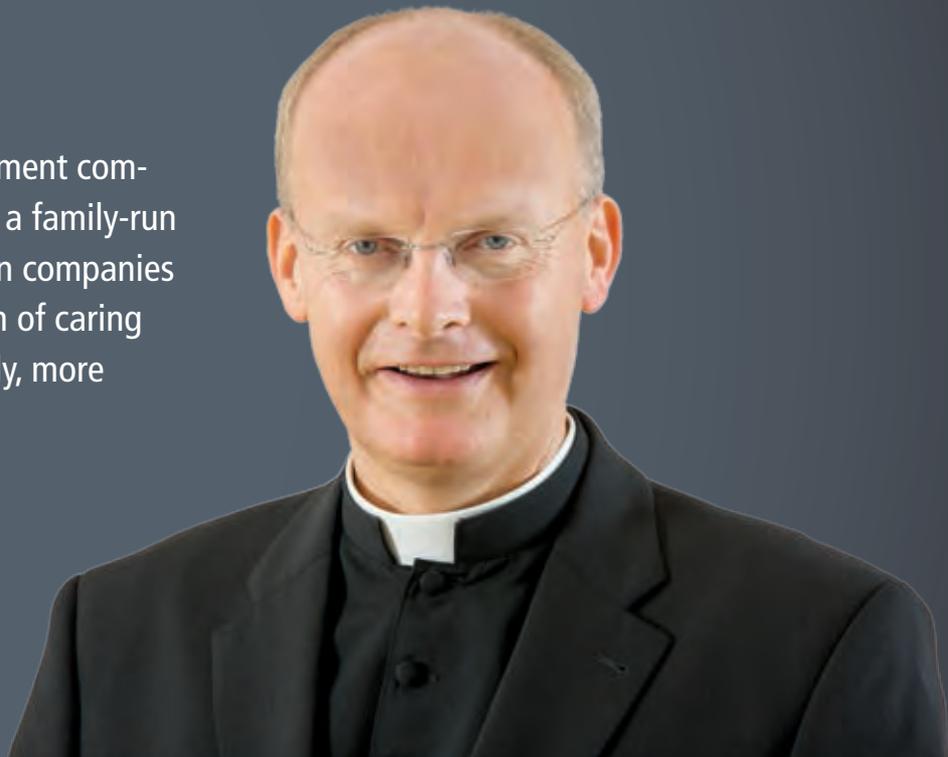


Alongside this time of goodwill, pleasure and anticipation – especially among children – Christmas is also a perfect example of our consumer culture, of the narrow line between pleasure and tedium, of our consumption of goods and energy, of our desire to have something new and of our rejection of old familiar things. If we didn't have the systems in place, if we didn't have separate waste collection services and the recycling sector, we would be suffocating under a mountain of waste. Every year, I travel to Latin America in my role as the bishop responsible for the Adveniat charity. There are people there living on and earning their living from such mountains of waste and these are images that are often in my thoughts. The everyday reality of these people and their outlook on life are so very different to that of others. I find it so hard to live with the knowledge that such poverty still exists and am ashamed at the same time.

Germany's wealth, the good lives we lead in such a clean and tidy environment – in such contrast to so many other regions around the world – can also be put down to the sophisticated interaction between supply and waste management, something that REMONDIS also represents. We are using our planet's natural resources more and more efficiently, an ever growing number of products are able to be recycled. Protecting our environment, which we as Christians see as being God's creation and gift to mankind,

” The waste management company REMONDIS is a family-run business. Family-run companies have the reputation of caring for things differently, more intensively. “

Dr Franz-Josef Overbeck,
Bishop of Essen



has taken on an important role both in the world of politics and society as a whole – Thanks be to God! Sustainability, however, will simply remain a buzz word if serious efforts are not made to achieve it.

The waste management company REMONDIS is a family-run business. Family-run companies have the reputation of caring for things differently, more intensively. This can be put down to the longer time horizon that perhaps allows the family owners to act in a way towards their stakeholders, employees, customers and neighbours that large enterprises with their high levels of staff turnover are unable to do. These large and small family-run businesses are the backbone of Germany's economy. This, too, is something precious and something we must be grateful for.

The promise of Christmas – that God is so close to us, that he sent his son Jesus to become one of us, like us in all things except sin – is an answer to the conditions that are needed for our life on Earth. Our responsibilities include us caring for others as well as ourselves and taking care of all aspects of our lives. This also encompasses waste management which allows us to create new life cycles. For us Christians, Christmas, this family festival, is not the pinnacle of consumerism. Advent, the period preceding this festival, is a time of waiting for the arrival of Christmas. In the past,

Advent was a time for fasting, a conscious decision to abstain from consumption in the run up to Christmas. In this sense, Advent means "anticipation". We alone cannot provide everything we need for a good future. On the contrary, most things are provided for us. Experiencing this feeling of well-being, comfort and security, all of which make Christmas so important to us, is a gift from God, from him being so close to us, from him giving us his son. This knowledge can help take the pressure off us and give us great comfort as we go about our everyday lives.

With much appreciation for your hard work, I would like to wish everyone working at REMONDIS and their families a "pressure-free" time as they look forward to the blessedness of Christmas.

Yours
Franz-Josef Overbeck,
Bishop of Essen

Whether it be Christmas, a birthday or some other special occasion: wrapping paper is a valuable material even after it has been used



Germany's most modern paper sorting plant is in Berlin-Neukölln

BOROUGH MAYOR DR FRANZISKA GIFFEY AND REMONDIS TAKE A LOOK BACK AT THE FACILITY'S SUCCESSFUL TRACK RECORD

20

REMONDIS: 20 years in Berlin-Neukölln – a success story for the city, the local inhabitants and the environment

REMONDIS' operations in the Berlin district of Neukölln began back in 1995 when the company set up two recycling plants there. One of these facilities is still being used today as a secure data destruction centre. The second plant was, at the time, the first dismantling centre for treating cooling appliances and e-waste. Other company units have been relocated to Neukölln over the years, including a photographic film recycling facility in 2002. A new paper sorting plant was commissioned in 2012 and has been responsible since then for recovering and recycling old paper from the Greater Berlin region so that it can be returned to production processes – making an important contribution towards preventing climate change. During a visit to the site, Borough Mayor Dr Franziska Giffey and Lutz Wedegärtner, a managing director at REMONDIS, took a look back at the facility's successful track record over the last three years.



(from left to right) Clemens Mücke, responsible for promoting trade and industry in Berlin, Lutz Wedegärtner, Managing Director at REMONDIS, Borough Mayor Dr Franziska Giffey and Martin Aweh, Branch Manager at Rhenus Data Office, during a tour of the Lahnstraße site in Berlin Neukölln

Since it was set up in 1995, REMONDIS' Neukölln site has become one of the most important industrial recycling centres in Germany thanks to its state-of-the-art recycling facilities. In 2011, REMONDIS and Berlin Recycling, a fully owned subsidiary of BSR, founded the joint venture "Wertstoff-Union Berlin GmbH" which then invested 10 million euros to build Germany's most modern paper sorting facility at the Lahnstraße location in Neukölln. Since then, 20 new jobs have been created. Using a two-shift system, the plant is able to sort 120,000 tonnes of waste paper every year to supply the paper industry with high grade products. The waste paper comes from commercial businesses, retailers, industrial firms and private households. The volume of paper processed is more or less equivalent to the amount of paper that could be produced by using all the trees in the Grunewald forest near Berlin. All in all, these paper recycling operations reduce carbon emissions by over 75,000 tonnes.

During her visit to the site in October, Borough Mayor Dr Franziska Giffey underlined just how important the operations were as they created a win-win situation for the environment and for the regional economy as a whole: "We are proud to have REMONDIS and its modern, innovative and sustainable business in our district, which not only has a positive impact on Neukölln but on the whole of Berlin. 60% of the paper generated in Berlin is sorted here at the Neukölln site and then returned to production cycles. The facility has not only generated new jobs, it is also helping to protect the environment."

Further investments have been made at the site since the paper sorting facility began operations. A new WEEE dismantling centre will soon be commissioned. REMONDIS' Berlin-Neukölln industrial park employs a total of 500 people, whose everyday work is helping Berlin and the surrounding districts to achieve their sustainability goals.

75,000 t

Every year, the paper recycling operations reduce carbon emissions by over 75,000 tonnes

Recyclables: an informative blog provides greater transparency

ALL YOU NEED TO KNOW ABOUT RECYCLING AND RECYCLING POLICIES

Many people are well aware of just how important new media has become nowadays. Smartphones and laptops are a normal part of our daily lives. Our interest in the more “traditional” forms of media is falling rapidly as we turn to new media to find the information we need. Special so-called blogs are becoming more and more popular. One blog in Germany stands out from the crowd as it is one that should interest many of us: wertstoffblog.de, a blog all about recyclables. Many of the subjects looked at by the bloggers are ones that are extremely important for our company’s present and future business – and very much in keeping with our company slogan: “Working for the future”.

wertstoffblog.de

A small but top class team of authors have made it their task to use wertstoffblog.de to make the recycling sector more understandable and more transparent. They have, therefore, been writing about a wide range of topics – from how the public handles recyclable materials, to questions regarding resource policies, all the way through to criticising the current state of the ‘Dual System’, the scheme used in Germany to collect waste packaging. wertstoffblog.de has been exploring some new and interesting horizons. A piece has also been written about increasing recycling rates, a discussion that has been long overdue. As is usual with such sites, the bloggers give their own personal opinion of the subject they are writing about. The well-known journalist and blogger from Hamburg, Doreen Brumme, for example, has been writing about her experiences with the world of recycling as a consumer and mother of four.

wertstoffgesetz-fakten.de

Those browsing through wertstoffblog.de will almost automatically find themselves clicking onto another exciting on-line project that presents a host of facts about the upcoming recyclables law. wertstoffgesetz-fakten.de aims to provide all those interested with as much information as possible about the progress being made towards drawing up this law. This site provides access to a number of detailed studies as well as to many documents concerning the legislative process. One of the site’s highlights is its page of short interviews with politicians, representatives of NGOs and scientists who each give their own personal opinion about the recyclables law. The website is rounded off by a timeline which documents the process and is updated on a daily basis. The editorial team neither comments nor evaluates the information that is uploaded onto the site. Their job is simply to collect

the data, organise it and then upload it for everyone to access. The only people able to comment on the content are the site’s users. It is, therefore, making the legislative process far more transparent, a far cry from traditional lobbying activities and one that is unprecedented in Germany.

Interested?

Everyone is welcome to join in: the site’s editor, Dr Frank Freimuth, and his team look forward to hearing from all those interested in taking part.

All emails to:

redaktion@wertstoffblog.de



Expansion with a combination of services

REMONDIS ACQUIRES THE DUTCH DUSSELDORP GROUP



REMONDIS' Dutch subsidiary is continuing to grow. Its success can be put down to a number of reasons: its comprehensive range of services, its steadily expanding network of business locations and the close collaboration work between the Group's various companies. Its operations have been given a further boost with the recent acquisition of the recycling and waste management firm, Dusseldorp.



REMONDIS set up its own company in the Netherlands, REMONDIS Nederland B.V., back in 2006

The Dusseldorp Group primarily operates in the provinces of Gelderland and Overijssel in the east of the Netherlands. Last year, it had a turnover of around 135 million euros. This autumn, REMONDIS purchased all shares in this family-run company which has a wide-ranging portfolio including waste management, recycling and wastewater services as well as construction and demolition services. The construction and demolition division was immediately sold on to a Dutch construction firm. Dr Andreas Krawczik, managing director of REMONDIS Nederland B.V., explained: "We made a conscious decision to sell on the construction and demolition division, as we wish to concentrate fully on developing our core businesses."

Thanks to this takeover of Dusseldorp's recycling and waste management operations, REMONDIS has once again succeeded in considerably growing its regional presence in the country. Besides acquiring Dusseldorp's main branch in Lichtenvoorde near Winterswijk, it now also owns businesses

in Nijmegen, Doetinchem, Ermelo, Hardenberg and Nijkerk which, together, employ over 380 people. In addition to offering an extensive range of services and recycling activities, these branches also regularly maintain and service approx. 26,000 municipal pumping stations in the Dutch provinces.

Initially, REMONDIS and Dusseldorp will continue to operate as the REMONDIS Dusseldorp Group. Plans are for it to be run solely under the REMONDIS name by the end of 2016. The teams working at the two companies will not only be collaborating more closely, their offices will also be located nearer to one another: REMONDIS' Dutch subsidiary is relocating its head office from Ede to Lichtenvoorde, where Dusseldorp is based. "This is a clear sign just how important this acquisition is for our operations in the Netherlands," commented Werner Hols, managing director of REMONDIS International.

A significant increase in market share

Helped along by its newly acquired operations, REMONDIS is planning to considerably increase its market share in the Netherlands. "We will be looking to achieve additional growth by continuing to extend our customer base as well as by acquiring further businesses, primarily in Gelderland and the Overijssel region," explained Dr Andreas Krawczik. Moreover, the company is aiming to grow and further improve the range of services it offers its commercial and municipal customers. The company's expanded and more closely knit network across the region will help it achieve these goals.

Norbert Rethmann, honorary chairman of the supervisory board of the RETHMANN Group, and Frank Dusseldorp, former board chairman of the Dutch Dusseldorp Group, at a meeting in the Netherlands



(from left to right) Dr Gerd Terbeck, Managing Director of REMONDIS Nederland B.V., Frank Dusseldorp, former managing partner of the Dusseldorp Group, REMONDIS Board Member, Egbert Tölle, and Dr Andreas Krawczik, Managing Director of REMONDIS Nederland B.V., during a visit to Dusseldorp's main branch in Lichtenvoorde

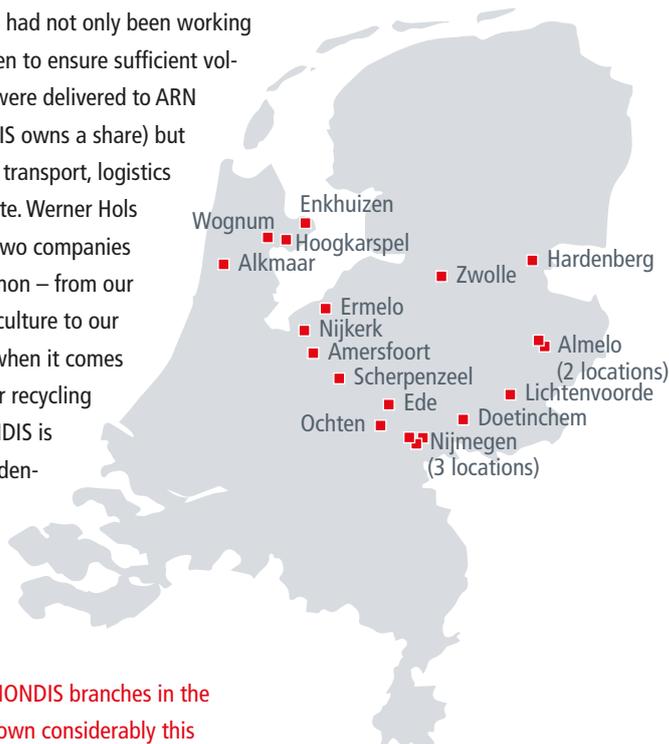


Over the last three years or so, REMONDIS has gradually been increasing its presence in the Netherlands by purchasing companies that are a perfect match for its core business. Such companies include van Kesteren Milieuservice and two divisions previously owned by the family-run business, Methorst Milieu, as well as two firms from the family-owned business, Kuiper. At the same time, a number of local authorities have passed on their operational business or company shares involving commercial waste to REMONDIS.

Ideal conditions for mutual success

REMONDIS' extensive experience of integrating new companies into its group has ensured that the process of merging these latest additions was completed quickly and smoothly. The fact that the companies had often had a strong business relationship before the acquisition also helped the merging of the operations. This is most certainly true of Dusseldorp.

The two companies had not only been working together in Nijmegen to ensure sufficient volumes of materials were delivered to ARN (in which REMONDIS owns a share) but also in the areas of transport, logistics and hazardous waste. Werner Hols commented: "Our two companies have much in common – from our customer-oriented culture to our high expectations when it comes to the quality of our recycling operations. REMONDIS is very much able to identify with the motto of the Dusseldorp Group: 'The solution is close by'."



The number of REMONDIS branches in the Netherlands has grown considerably this last year

*Transport by road to
Aken an der Elbe* →



Open-heart surgery

← *A logistical and
technological feat*

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REPLACEMENT OF A BOILER AT THE LIPPE PLANT'S FLUIDISED-BED
POWER STATION TESTS TECHNOLOGY AND LOGISTICS TO THE LIMIT

The next stage:
by boat on the Elbe



The replacement boiler was transported to Lünen via the River Elbe, the Mittelland Canal, the Dortmund-Ems Canal and the Datteln-Hamm Canal

Arrival
in Lünen



It truly was a masterly logistical and technological performance. Everything had to be just right – from the water level of the River Elbe, to the strength of the wind at the Lippe Plant when the boiler was replaced via the roof of the power station, 40 metres above the ground. 42 trucks had to be deployed from Munich just to transport the special crane needed for this task. The fact that everything ran so smoothly can, above all, be put down to the meticulous planning work and extensive experience of all those involved.

Having been used for 35 years, a section of the heat recovery boiler at REMONDIS' fluidised-bed combustion plant had to be replaced. To be able to do this, all membrane walls and a total of three heat exchanger bundles were removed and replaced during the scheduled inspection of the plant that took place between 24 September and 12 October 2015. What sounds so simple is, in fact, pretty much like carrying out open-heart surgery on an industrial facility involving weights exceeding 100 tonnes.

The transport of the replacement boiler was itself a logistical feat. The first stage of the route was by road when the boiler was transported from the manufacturer's plant in Hohenthurm to Aken an der Elbe in the German state of Saxony-Anhalt. It was then taken by ship on the River Elbe, whose water level had to be just right to enable the 100-tonne boiler to be transported. Gradually it made its way along the canals via Magdeburg to Lünen where it was loaded onto a special vehicle. Around two hours were needed to travel the short distance – just 3 kilometres – between the harbour in Lünen and the Lippe Plant. ►



Dismantling the old flue gas arch



Anything more than a very light breeze and it would have been impossible to remove the flue gas arch

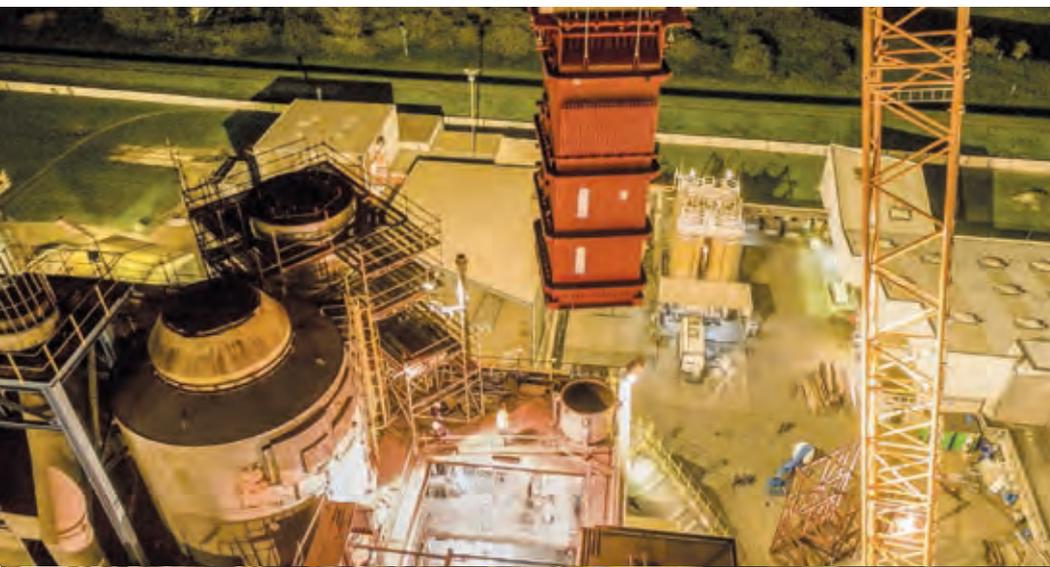


A lot of welding work had to be done

Teams were at work day and night to make sure everything was done to schedule

The new boiler being freed from its steel transport container





Installation of
the new boiler



10pm - job done!



► A feasibility study had already been carried out beforehand to work out how the special 650-tonne crane could be best set up at the construction site. Once the complicated preliminary planning process had been completed, a concept was then drawn up over the winter months of 2014/15 to establish how exactly the boiler should be removed and replaced. The decision was made to assemble as much of the boiler as possible beforehand rather than assemble it on site as the power plant has such a narrow structure. By doing so, the turnaround period would be much shorter and the power plant would be up and running and able to accept waste from its customers for thermal treatment much faster. Moreover, far less natural gas would be needed. The auxiliary boilers run on natural gas are used to produce process steam as long as the power plant is shut down as it supplies the companies at the Lippe Plant with steam 24/7, 365 days a year.

One of the striking features of the power plant is its flue gas arch that acts as the afterburner. This first had to be taken

down so that the old boiler could be extracted from the plant and replaced with a new preassembled boiler. Every day, up to 60 operatives carried out their tasks to ensure that the boiler was replaced within just 15 working days. All the connecting pipes first had to be disconnected and then welded back on again after the new boiler was in place. Doosan Babcock Hohenthurm, an old established company from Landsberg near Halle in Saxony-Anhalt, had been given the task of drawing up a concept that ensured as much of the boiler could be pre-assembled as possible and then installed in the plant in as short a time as possible.

The cranes began their work on Wednesday, 30 September. The installation of the new boiler was completed just 4 days later at 10pm on the Day of German Unity. With a total of ca. 14,000 metres of piping, several thousand welded joints and weighing approx. 100 tonnes, this boiler truly is the heart of the power plant's steam production system. Here's to the next 35 years!



Go to remondis-aktuell.com
to watch a film made about
this project

REMONDIS with three further areas of expertise at the KlimaExpo.NRW

DR ANTON HOFREITER, LEADER OF GERMANY'S GREEN PARTY, VISITS THE LIPPE PLANT ON THE DAY IT OFFICIALLY BECOMES A 'PIONEER IN CLIMATE PROTECTION'



During a recent visit to the Lippe Plant by Dr Anton Hofreiter, parliamentary leader of the BÜNDNIS 90/DIE GRÜNEN (Green party) in the German Bundestag, KlimaExpo.NRW officially accepted three areas of recycling expertise at the plant in Lünen onto its list of qualified projects for its permanent exhibition. Over the next seven years, KlimaExpo.NRW will be presenting 1,000 projects, so-called 'engines for progress' that are located across the German state of North Rhine-Westphalia (NRW) and best demonstrate how climate change can be prevented. Taking its 120th step, this NRW initiative officially named the Lippe Plant as a 'pioneer in climate protection' in three different areas: "Primary products for industry", "Material and energy uses of biomass" and "Fuels from refuse".

REMONDIS' three key areas of expertise at its plant in Lünen help to conserve our planet's natural resources and cut carbon emissions. Here, industrial and household waste is recycled and turned into primary products for industrial businesses, waste and residual materials are transformed into fuels and, last but by no means least, biomass is recycled or used in its biomass-fired power station. These three areas alone reduce greenhouse gases by around 416,000 tonnes every year.

"The intelligent and efficient further use and recycling of refuse is an important engine of progress for our state. Through its work in this area, REMONDIS in Lünen is making an important contribution to climate and resource protection," commented Dr Heinrich Dornbusch, KlimaExpo.NRW senior managing director, as he welcomed the project to the NRW permanent exhibition.

REMONDIS' plant in Lünen is home to a large number of facilities that are able to treat and recycle a wide range of waste for re-use: plastics are transformed into granulates and slag into metal. Another example is the sodium aluminate that can be used for treating wastewater or making binding agents. Some of the sodium aluminate produced at the Alumin facility is used to make white pigments for the plaster and paper industries. FGD gypsum, generated by flue gas desulphurisation systems at fossil fuel power stations, is also processed here and transformed into binding agents.

"It is impossible to imagine Germany achieving its climate goals without the investments and innovative strength of the private sector."

Herwart Wilms, REMONDIS Managing Director





50,000

The greenhouse gas emissions reduced by the Lippe Plant = the total annual carbon footprint of ca. 50,000 inhabitants in Germany



a year. Not all the tree and plant cuttings are suitable for materials recycling. They can, however, be put to good use – as a regenerative fuel for the site’s biomass-fired power station. The electricity generated by this power station – approx. 160,000 MWh per year – greatly reduces the demand for electricity produced using fossil fuels.

Waste is a thing of the past. Today, it is a well-known fact that recycling is an effective way of preventing climate change

All in all, the activities at the Lippe Plant cut greenhouse gas emissions by almost 470,000Mg of CO₂ equivalents. This volume of greenhouse gas is roughly the same as the total annual carbon footprint generated by ca. 50,000 inhabitants in Germany. The same, therefore, as the emissions generated by towns the size of Ibbenbüren or Ertstadt. Looking at the volume of carbon emissions that a wind farm, such as the one in Düren, is able to reduce, the reductions achieved by the Lippe Plant can be compared to a wind farm operating 80 wind turbines.

Herwart Wilms, managing director at REMONDIS, was presented with the KlimaExpo.NRW certificate in the presence of Dr Anton Hofreiter. Mr Wilms reiterated the importance of materials recycling as an effective means of curbing climate change, saying: “We are delighted that three further pioneering centres of expertise here at the Lippe Plant have been recognised as a qualified KlimaExpo.NRW project in addition to our biogas plant in Coesfeld. The fact that Dr Anton Hofreiter has joined us on this occasion is further confirmation of just how closely resource conservation and climate protection are linked to the performance of the recycling industry. It is impossible to imagine Germany achieving its climate goals without the investments and innovative strength of the private sector. We are, therefore, all the more pleased to be given this recognition which will spur us on to find further ways of improving recycling systems and protecting our climate.”

The environmental performance of REMONDIS’ Lippe Plant proves that environmental protection and business success can go together very well indeed

From waste to fuel

Another plant at the site takes waste from meat production factories – in particular animal fat – and processes it into biodiesel. This facility has the greatest single impact, as far as curbing global warming is concerned, as these operations mean that 160,000 tonnes of greenhouse gas emissions can be slashed every year.

Making the very most of biomass

The company, however, not only recycles waste to produce goods for industrial firms but also for agricultural businesses and private households. The composting plant/earthworks processes over 70,000 tonnes of organic and garden waste as well as old wood, cutting CO₂ emissions by 7,000 tonnes



Herwart Wilms (far right), Managing Director at REMONDIS, holding the KlimaExpo.NRW placard naming the Lippe Plant as its 120th reference project. In the centre, Dr Anton Hofreiter, Parliamentary Leader of BÜNDNIS 90/DIE GRÜNEN, and Dr Heinrich Dornbusch (far left), KlimaExpo.NRW Senior Managing Director

E-mobility thought through to the end

WORLD'S LARGEST SECOND USE BATTERY STORAGE UNIT
TO BE SET UP AT REMONDIS' LIPPE PLANT



REMONDIS' Lippe Plant is soon to be home to the largest second use battery storage unit currently to be found in the world. Due to start operations at the beginning of next year, this system is to be run by a joint venture consisting of Daimler AG, The Mobility House AG and GETEC on REMONDIS SE's grounds. The power produced by the unit will be marketed in Germany to help level out fluctuations in the power grid. The special feature of this project is its use of used battery systems from electric cars. Systems from second-generation smart electric drive vehicles are to be incorporated into a stationary storage unit in Lünen which will have a total capacity 13 MWh. This scheme will help improve the environmental performance of electric vehicles and make e-mobility more economical. It was not a coincidence that REMONDIS was selected to join the group. REMONDIS Industrie Service is currently developing new ways to recycle lithium-ion batteries when they reach the end of their useful life.

The European Waste Framework Directive implemented perfectly: first re-use, then materials recycling

Following their motto – 'E-mobility thought through to the end' – Daimler, The Mobility House, GETEC and REMONDIS have initiated this project in Lünen that covers the whole of the life cycle of a battery: from the production and processing of the battery systems at Daimler's subsidiary, ACCUMOTIVE, to the range of electric and plug-in hybrid vehicles offered by Daimler AG, to the installation and marketing of the stationary battery storage unit to the energy markets by The Mobility House and GETEC, all the way through to the recycling of the battery systems by REMONDIS when they reach the end of their useful life and the recovery of the valuable raw materials so that they can be returned to production cycles.

High performance battery storage units will be an essential part of the energy market if Germany's goal of switching from fossil to renewable energy is to be a success. They will be key to stabilising the grid as more and more electricity is provided by fluctuating renewable energy sources, such as wind farms and solar power stations. They can level out the dips in the energy supply with virtually no loss – a task partly being done at the moment by power stations run on fossil fuels. All this can help speed up Germany's transition to renewable energy and prevent money having to be spent on extending the grid or building new power stations.

THE PROJECT PARTNERS

REMONDIS is one of the world's largest recycling, service and water companies. One of REMONDIS' future goals is to recycle lithium-ion batteries on an industrial scale. The group operates in Europe, Africa, Asia and Australia to provide a sustainable supply of raw materials and water.

The Mobility House AG (TMH) is revolutionising the energy markets with its vehicle batteries. Using innovative technologies, TMH is making it possible to integrate electric vehicles into the power grid. TMH is working with GETEC in Lünen to install and operate the storage unit – and to sell the electricity to energy markets. Founded in 2009, TMH collaborates with all leading automotive manufacturers in more than 20 countries from its sites in Munich, Zurich and San Francisco.

Daimler AG is one of the world's most successful automotive companies. The Mercedes-Benz brand stands for high-quality vehicles that both fascinate and delight its customers. The company is also the world's largest producer of commercial vehicles, operating in a variety of business sectors. It entered the stationary energy storage sector together with its subsidiary ACCUMOTIVE in May 2015 – covering both industrial mass storage and private applications.

GETEC ENERGIE AG, a company belonging to the energy service provider **GETEC**, develops bespoke solutions for supplying electricity and gas. It also markets energy. GETEC and TMH are both shareholders of Coulomb GmbH.

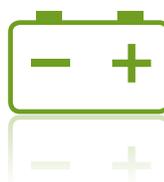
Thanks to this second use battery storage project in Lünen, the four partners are clearly showing that the life cycle of a plug-in or electric vehicle battery need not come to an end when it can no longer be used in a vehicle. Depending on the model of vehicle, Daimler AG offers its electric vehicle customers a battery life guarantee of up to ten years. The battery systems, however, are still fully operational after this period, as the low levels of power loss are insignificant when used in a stationary storage unit. In fact, it is estimated that they can continue to operate efficiently as a stationary unit for at least a further ten years.

It will, therefore, be a while before the final stage of the chain – recycling the batteries to recover the raw materials – is actually put into practice. The commercial service life of lithium-ion modules from electric cars will be practically doubled by re-using them in the second use battery storage unit. This innovative project, therefore, meets one of the primary demands of the European Waste Framework Directive as set out in its five-stage waste hierarchy: that the re-use of products should be given preference to materials recycling. Mobility experts are expecting the number of electric cars



Klemens Rethmann, Board Spokesman of the RETHMANN Group, Uwe Beckmeyer, Parliamentary State Secretary in the German Economy and Energy Ministry, Dr Dieter Zetsche, CEO Daimler, Dr Karl Gerhold, CEO GETEC, and Thomas Raffener, CEO The Mobility House, at the groundbreaking ceremony at the Lippe Plant

on our roads to increase rapidly over the coming years. The number of used li-ion batteries being handed in for recycling will rise accordingly. Together with REMONDIS, Daimler, The Mobility House and GETEC have laid the foundation for the best possible re-use of these batteries and sustainably closed the life cycle of this relatively new product.



The world's largest storage unit made of used batteries will soon be up and running at REMONDIS' Lippe Plant

REMONDIS once again named one of the three most sustainable large corporations in Germany

SELECTED AS ONE OF THE TOP 3 COMPANIES FROM AMONG 500 APPLICANTS

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Every year, the German Sustainability Award (Deutsche Nachhaltigkeitspreis) is presented by the foundation, Stiftung Deutscher Nachhaltigkeitspreis e.V., in cooperation with the Federal government. The 8th awards ceremony was held in Düsseldorf on 27 November 2015 with over 500 companies taking part in this year's competition. The award was presented to companies who best unite running a successful business with being socially responsible and protecting the environment. A jury of sixteen experts named REMONDIS SE & Co. KG as one of the Top 3 "most sustainable large corporations in Germany" for the third year running.

(from left to right) Margret Suckale, Board Member of BASF SE, Michael Rauterkus, Chairman of Grohe AG, Carsten Voigtländer, Chairman of the Board of Management at Vaillant GmbH, and Michael J. Schneider, Press Spokesman at REMONDIS, at the German Sustainability Awards Ceremony



Around 1,200 guests – many of them from the worlds of business, politics and science – were invited to attend the gala evening and watch the winners being presented with their German Sustainability Award. 2015, the year of sustainability, has been shaped by the introduction of the UN's sustainable development goals, the Climate Change Conference in Paris and the refugee crisis in Europe – subjects that the German Sustainability Awards Ceremony took into account with its high-profile protagonists such as Queen Silvia of Sweden and the UN High Commissioner for Refugees, António Guterres. The focus of the awards ceremony, which was held in the MARITIM Hotel in Düsseldorf, was on excellence in sustainability and the people behind it and this was presented in an informative and highly entertaining way. The guests of honour were well-known personalities from business, culture, sport and the media such as Hans-Dietrich Genscher, Sven Hannawald, Ute Lemper and Art Garfunkel, who put on a nostalgic show for the audience.

The companies' excellence in sustainability was evaluated by the prestigious management consultancy firm, A.T. Kearney, and the Wuppertal Institute who looked at how businesses had succeeded in finding effective solutions for ecological and social problems, at the business success of the measures they had implemented and on their future goals. REMONDIS Press Spokesman, Michael J. Schneider, expressed his pleasure at the company being presented with the award: "It is a great honour for our company to have been named one of the three most sustainable large corporations in Germany. This prize reflects how recycling is becoming one of the most important areas for achieving sustainable environmental protection and preventing climate change. We would like to thank the jury, our partners and customers as well as our 30,000+ employees who make this success possible every single day."

AWIGO LOGISTIK tests hybrid truck

In theory, carbon emissions can be cut by up to

30%

COLLECTING RECYCLABLES AND SIMULTANEOUSLY CUTTING CARBON EMISSIONS

AWIGO LOGISTIK GmbH spent the first weeks of autumn testing a hybrid waste collection vehicle in the Osnabrücker Land district. The objective of this project was to see whether this novel truck with its diesel electric system was suitable for everyday use. Moreover, if recyclable materials could be collected and transported to processing facilities using this especially environmentally friendly type of vehicle, then the company's whole system could be even more sustainable. According to the manufacturers of the vehicle, carbon emissions could, in theory, be cut by up to 30%. An excellent reason, therefore, for AWIGO Logistik, a public private partnership between REMONDIS and the District of Osnabrück, to check out the advantages of this innovative technology.

This hybrid vehicle was tested for four weeks with AWIGO LOGISTIK using it to empty the waste paper bins instead of its standard rear-loader truck. Those involved in the project are currently in the process of evaluating the data gathered and comparing it with the data from the other vehicles used at the same time. "We can't wait to find out whether the emission and fuel savings of at least 30 percent advertised by the manufacturer can actually be achieved when the truck is used on a daily basis," commented Christian Niehaves, managing director of AWIGO LOGISTIK.

Recovering brake energy

According to the manufacturer, these savings are possible thanks to its innovative technology which combines a diesel and electric motor – the so-called DUALPOWER option. The conventional truck diesel engine is only used for driving long distances. The drivers switch over to the electric power unit as soon as they reach the first bin that has to be emptied. An extremely quiet generator then supplies the power needed to do the bin emptying work; the additional power required to accelerate the vehicle is provided by an energy storage unit. An electric engine enables the truck to travel along its designated bin collection route. Each time the driver brakes, the energy created by braking is recovered and stored in the energy storage unit for the next time the driver has to accelerate.

(from left to right) REMONDIS board member, Thomas Conzendorf, AWIGO managing director, Christian Niehaves, Wolfgang Steen, REMONDIS managing director North Region, and district administrator, Dr Michael Lübbersmann, at the event in Osnabrück marking the official start of the test period

REMONDIS representatives, Thomas Conzendorf and Wolfgang Steen, explained why they had been so keen to test the vehicle: "We are hoping that this cost-neutral test will produce some important findings which we can then use for the future management of our fleet." District administrator, Dr Michael Lübbersmann, welcomed the future-oriented approach of the waste management company in his region: "AWIGO LOGISTIK is always interested in hearing about the latest trends and at looking at ways of reducing carbon emissions to help us achieve our climate targets."



AWIGO Logistik GmbH is a joint subsidiary of AWIGO Abfallwirtschaft Landkreis Osnabrück GmbH and REMONDIS GmbH & Co. KG, North Region. The company has been responsible for collecting household waste (residual, paper, organic and bulky waste) from the approx. 355,000 inhabitants living in the Osnabrücker Land district since 01 January 2015.





REMEX lays the foundation for further growth

GROUNDBREAKING CEREMONY FOR NEW HEAD OFFICES IN DÜSSELDORF

Enjoying the occasion (from left to right): Rainer Schäfer, managing director of Rheincargo also representing Neuss-Düsseldorfer Häfen, Thomas Geisel, Mayor of Düsseldorf, REMEX managing director Michael Stoll and REMONDIS board member Thomas Conzendorf

REMONDIS' subsidiary, REMEX Mineralstoff GmbH, has begun building its new head office complex in Düsseldorf Harbour which will eventually enable REMEX to unite its various business units – currently located all around the harbour – under one roof. On grounds covering approx. 4,800m² and not far from the famous Arts and Media Centre designed by star architect Frank Gehry, the new headquarters will provide over 100 employees with a modern workplace right in the very heart of the German state of North Rhine-Westphalia (NRW). REMONDIS' decision to invest in this area is a clear demonstration of the Westphalian family-run company's commitment to the city of Düsseldorf, laying the foundation for further growth within the mineral recycling sector.

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REMONDIS made its first move to strengthen its business in and around Düsseldorf two years ago when it built a new head office (Karl-Hohmann Strasse) for REMONDIS Rhein Wupper GmbH. REMONDIS works together with the state capital of Düsseldorf, providing the city authorities with a range of waste management and recycling services via its shares in Awista GmbH, a public private partnership with the City of Düsseldorf (responsible for collecting and recycling municipal household waste), in REMONDIS Rhein Wupper GmbH & Co. KG which collects and recycles commercial waste and markets recyclables, in IDR-EG mbH which specialises in hazardous waste, in KDM GmbH for composting kitchen and garden waste as well as in the city's central landfill in the Hubbelrath district. All in all, the REMONDIS Group employs around 1,500 people in Düsseldorf alone.

was also there to represent the Neuss-Düsseldorfer Häfen, which had provided the grounds. The actual building work itself began on 01 November 2015 and is expected to have been completed by the end of February 2017. This modern office complex will meet all the latest environmental standards and will also have an energy-efficient ground source heat pump system. As the name suggests, the energy is extracted from the ground via underground probes. The majority of the electricity needed in the new building will be generated by its own photovoltaic panels. By extracting regenerative heat from the ground and by using solar panels to produce its own electricity, the building's heating and cooling systems will be fully carbon neutral. Plans are for the photovoltaic system to be primarily used to cover the building's energy requirements. Electricity will be fed into the building's own electricity network during the interim periods when the offices do not need to be heated or cooled. This technology, therefore, will help to meet the building's own electricity needs and so reduce carbon emissions by 11,400kg every year. REMEX believes its decision to bring the four office units currently located around the harbour under one roof will greatly increase efficiency and lay the foundation for further growth.

The technology used will help to meet the building's own electricity needs and reduce carbon emissions by

11,400kg
every year

The symbolic turf cutting ceremony marking the start of the work on REMEX's new head office was held on 12 October. REMEX's managing director, Michael Stoll, welcomed numerous guests to the event including the Mayor of Düsseldorf Thomas Geisel, REMONDIS board member Thomas Conzendorf and Rainer Schäfer, managing director of Rheincargo, who

The beginning of a new era

THE REMONDIS GROUP COMPLETES THE CONSTRUCTION OF SINGAPORE'S FIRST EVER FACILITY TO RECOVER METAL FROM IBA

REMONDIS' company, REMEX, recently completed the building of a state-of-the-art recycling facility for Singapore in a record-breaking period of just eight months. This new plant is now being used to process incinerator bottom ash (IBA) and recover the metals contained in the material. Equipped with leading-edge technology, it is setting an example for the whole of the Asian region.

REMEX Minerals Singapore Pte. Ltd. was the local company responsible for building the metal recovery facility. It is now operating the plant on behalf of the country's National Environment Agency (NEA), which had put this project out to tender as part of its long-term plan to improve resource efficiency in the country.

REMEX's new facility is located on the coast on grounds covering 1.4 hectares in the Tuas district of Singapore. In the future, it will be able to process around 600,000 tonnes of IBA generated by Singapore's four waste incineration plants every year. Thanks to the technology installed, around 90 percent of the ferrous metals found in the IBA and over 75 percent of the valuable non-ferrous metals, such as aluminium and copper, will be able to be recovered and recycled.

These high recycling rates require innovative technology that can pick out even the smallest pieces of metal from the IBA – such as special magnets, eddy current separators and multi-stage screening equipment. Set up in the best possible way, this modern technology will ensure that the ferrous and non-ferrous metals can be removed from the incinerator bottom ash and separated from one another strictly according to type.

At present, the processed IBA is being transported by ship to the Island of Semakau just off the coast of Singapore, where it is carefully deposited and covered in soil. The NEA's plan is, however, to put this material to more sensible use, for example to make building supplies or as secondary aggregate for road and earthworks projects. Discussions are currently being held with REMEX and local universities to develop this idea further.

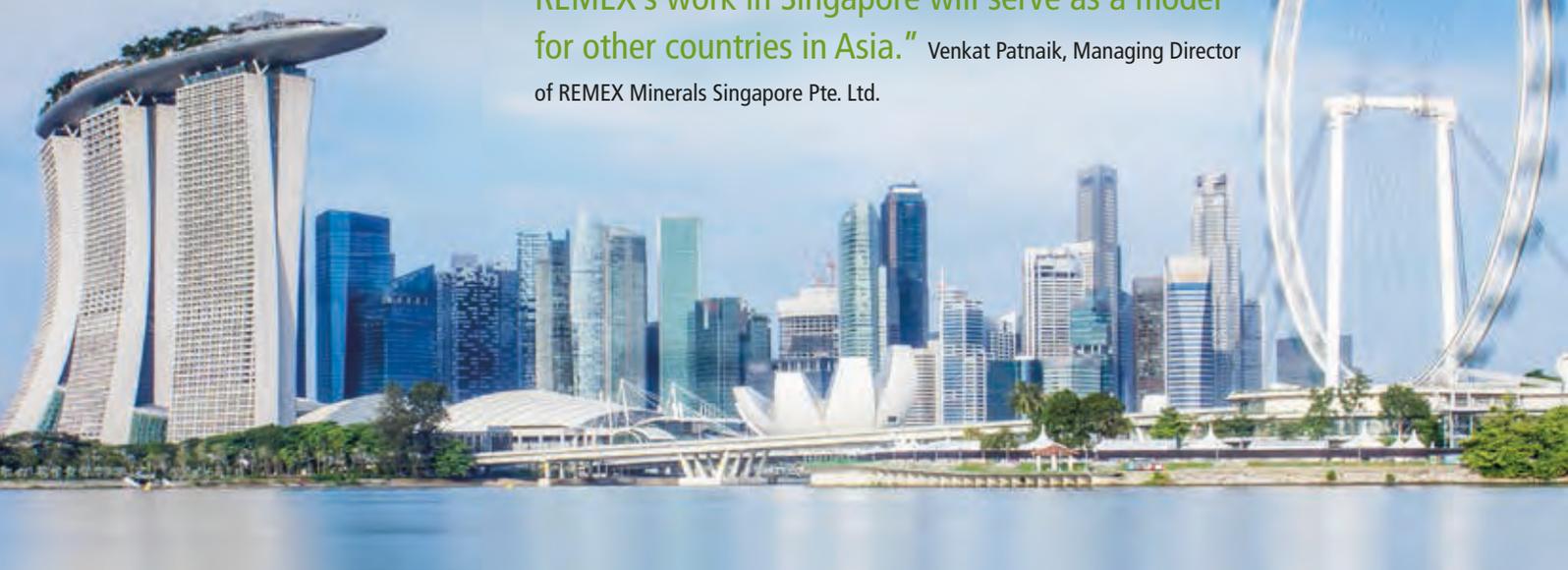


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REMEX Minerals Singapore Pte. Ltd. is REMEX's first branch outside Europe

With the operations at REMEX's new recycling facility having begun back in July, the official opening ceremony was held at the beginning of December in the presence of Norbert Rethmann, honorary chairman of the supervisory board of the RETHMANN Group, and Masagos Zulkifli, Singapore's Minister for the Environment.

“REMEX's work in Singapore will serve as a model for other countries in Asia.” Venkat Patnaik, Managing Director of REMEX Minerals Singapore Pte. Ltd.



A long-standing partnership

PILKINGTON'S COLLABORATION WITH REMONDIS BRINGS IT GREATER ENVIRONMENTAL AND ECONOMIC BENEFITS

REMONDIS has been working together with the prestigious glass manufacturer, Pilkington, for many years now and is responsible for managing all types of waste generated at a selection of their plants. The collaboration began at the Pilkington plant in Witten in 2003. The number of factories served by REMONDIS has gradually increased since then with Wesel, Bochum, Gladbeck and Gelsenkirchen being added to their list. In 2015, a further factory joined this group: Pilkington's plant in Aken in the German state of Saxony-Anhalt.



REMONDIS' waste management operations were extended to include Pilkington's Aken plant on 01 January 2015. The project team from REMONDIS' West Region drew up a bespoke waste management and logistics concept for the factory. To be able to do this, they first carried out a detailed analysis of the waste management and logistics systems that the plant had in place at the time so that they could discover where there was room for sustainable improvement. The REMONDIS team not only looked at the systems being used to collect the different types of waste but also how these linked in with the various production processes.

Analysis & reorganisation

Once the analysis had been completed, REMONDIS compiled a comprehensive report for Pilkington with its list of suggestions for improvement. Pilkington was also given extensive guidelines on the reorganisation of its waste management system which also showed how the changes would improve the com-

pany's environmental performance. Thomas Wällering, project development manager at REMONDIS, explained: "By doing this, we could clearly demonstrate the tangible benefits of such a set-up for Pilkington. One example was how we would be able to considerably reduce the volume of high cost waste that needed to be sent for disposal during the first twelve months."

The benefits of using external waste management specialists

The new waste management concept has proven to be a great success, in particular thanks to the optimised logistics and general improvements made along the whole of the production line. Pilkington has also opted to deploy one of REMONDIS' own waste management specialists at its Aken plant. This employee works on site at the factory and is responsible for managing the waste and waste logistics inside the plant. Such responsibilities range from coordinating the individual waste management measures, to organising the

Courses were held for the Pilkington employees and a user-friendly colour-coding system introduced throughout the factory to improve waste segregation at the plant

Time savings = greater efficiency



The time needed to manage the in-house waste management system has been greatly reduced. Pilkington now has an extra 80 hours every month that it can dedicate to its core business.



Bespoke waste management logistics

A new system of containers and new collection times have helped save time and money. Improved waste segregation and the deployment of an external waste management specialist have also increased sustainability.



Pilkington: the world of glass technology

Pilkington are global pioneers in glass production who became a well-known name after they developed the float process, the fundamental process used to produce sheet glass. In 2006, the company became part of the Japanese NSG Group, one of the world's leading manufacturers of glass and glass products. NSG has a global workforce of around 27,000 people. The group has production facilities in 28 different countries and markets its products in over 130 countries.

transport of the materials to the various recycling and processing facilities, all the way through to ensuring all relevant rules and regulations are adhered to.

A further REMONDIS employee has been working on site at Pilkington's factory in Bochum since July, where the company has been responsible for all waste management matters for a while now. This waste management specialist is there to manage the waste collection point and to organise the collection and emptying of the various containers. One special feature here has been the management of old wood at the factory. The REMONDIS specialist organises and runs the system throughout the Bochum plant. Reusable wooden racks that are in good condition are returned to the suppliers and poorer qualities are compacted on site and sent for timber recycling. These efforts have considerably reduced transport costs.

Great efficiency & environmental protection

Arne Ringkowski, a project engineer at REMONDIS, commented: "Our optimisation concepts provide our industrial

"Our optimisation concepts provide our industrial and commercial customers with exclusive, top quality solutions. We always take a close look at the way the personnel carry out their work and the time they need to handle waste materials as these are very important factors."

Arne Ringkowski, REMONDIS project engineer

and commercial customers with exclusive, top quality solutions. We always take a close look at the way the personnel carry out their work and the time they need to handle waste materials as these are very important factors." An analysis is carried out to determine the distance the employees must walk to reach the waste collection points and how much time is needed to do this. By improving the system, REMONDIS is able to increase productivity at their customers' business as well as reduce their costs. At the end of the day, a plant's waste management costs are greatly influenced by internal factors and the expense of the in-house waste management set-up.

An explosive legacy



HIGHLY DANGEROUS PESTICIDES SAFELY REMOVED

BUCHEN®

WORKING FOR THE FUTURE

Bonn, September 2015: Having recently inherited a house in the Muffendorf district of Bonn, the new owners decided to travel to the property to clear it out. During their tidy up, they discovered some old rusty metal drums, some of which had a sticky yellow substance oozing out of them. They could also see some faded warning labels that made it very clear that whatever was in the containers was poisonous. The family immediately rang the fire brigade, who then called in BUCHEN UmweltService's emergency management team. Removing these containers proved to be a difficult business and not one that the operatives get to do every day.

The substance had been stored in five 10kg containers under the roof of a dilapidated outbuilding – and had probably been there for a very long time. One of the containers was broken; a second was corroded and had lost its lid. It very quickly became clear to all those present that this was a job for highly trained specialists as the substance was a pesticide that had been banned many years ago. The pesticide had reacted with the metal and turned into a highly explosive mixture. Sensitive to movement, pressure, friction and changes in temperature, the chemical might explode at any time – and have the same effect as 20 kilograms of TNT.

A concept of individual steps and processes

BUCHEN UmweltService's emergency management team got straight down to work. "We started contacting people in our network, acting as general contractor to make sure we had the right specialists on hand to do the job," explained Gero Buchartz, head of the company's emergency management division. Working together with a crisis management group consisting of representatives of the fire brigade, the state office of criminal investigations and the bomb disposal squad as well as the environment agency and local regulatory office, a suitable concept and fixed schedule were drawn up within no time at all.

The first step was to dampen down the chemical wherever it had escaped to reduce its reactivity. Once that had been

done, the substance was carefully removed from the two drums that were leaking their contents. BUCHEN's sister company, XERVON, had erected scaffolding around the outbuilding to ensure that the operatives had a safe platform to work from. A sprinkler system had been attached to the scaffold as well as a camera that could be used to monitor the inside of the building. The sprinkler system had been designed by the company itself and was made primarily of plastic. Standard metal systems were out of the question – they would turn into dangerous missiles if the chemicals exploded.

Stringent safety standards

All properties within a 100-metre exclusion zone were evacuated during the first day. Once everyone had left, the team moved in and used the sprinkler system to sprinkle the room under the attic with water as the chemical had dripped through



Not a budding astronaut but an operative specially trained to handle dangerous substances

24h

A rapid response team: BUCHEN's 24-hour emergency management division ensures pollution incidents are handled safely



The drums had to be handled with extreme caution

All the neighbours were evacuated from their homes

the planks to the area below. One of BUCHEN's high performance vacuum / cleaning trucks was brought in to remove the liquid. Next, the room was cleared out and filled with Styrodur polystyrene boards to support the rotten wooden ceiling. The operatives, equipped with special measuring equipment, had to wear chemical protective suits and respirator masks.

The following step was the trickiest part of the operation: using the sprinkler, the poisonous substance was washed out of the damaged drums. Thanks to the CCTV system, the water pumps could be controlled from a safe distance. A special basin was used to collect the water and transfer it to a special container so that practically all of the water was able to be recovered. BUCHEN's vacuum / cleaning truck was deployed here, too, to remove any spillage from the floor – which had been sealed off before the work began – and to pump it into special containers.

Five hours later, the team were able to relax after all of the chemical had been washed out and safely stored.

Great team work

The next day was spent removing the sealed drums. This time, however, only the immediate next-door neighbours had to leave their homes as the risks were considerably lower. After the roof had been removed from the outbuilding, the team were able to get a good look at the drums which appeared to be stable and undamaged. The XERVON scaffolders moved in to adjust their scaffold and set up a support system with a remote-controlled hoisting device. One by one, the drums were carefully lifted out of the building, placed in a special insulated transport container and then loaded into an explosion-proof spherical container attached to the bomb disposal squad's special trailer.

BUCHEN also carried out the follow-up work: professionally packing and removing all the contaminated materials and cleaning all the surfaces affected by the pesticide. All of those taking part agreed that the collaboration work between the teams had been excellent – it could not have gone more smoothly.

The emergency team expertly coordinated the different tasks – ensuring that all rules and regulations were adhered to at all times



The substance had been stored in five 10kg containers under the roof of a dilapidated outbuilding

A new service for workshops

TSR CREATES A BRAND NEW RECYCLING SYSTEM WITH ITS 'METAL BOX'

TSR

THE METAL COMPANY

TSR is constantly looking at finding ways to make its customers' lives easier. It has now launched its new METAL BOX system which small businesses and workshops can use to store their scrap metal so that it can be sent straight to recycling facilities. This service reduces its customers' workload, saves them money and allows them to spend more time on their core business.

Practically every type of workshop and small business generates a wide range of scrap metal that needs to be professionally recycled. In the past, these businesses had to take these materials to a scrapyards themselves or wait for a scrap dealer to visit them. TSR Recycling GmbH & Co. KG has now created yet another service for its customers: THE METAL BOX – a clever and yet very simple idea.

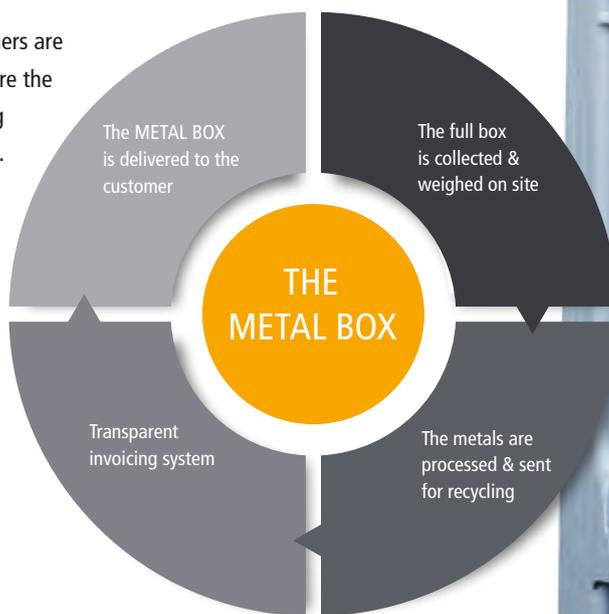
The open, standardised plastic pallet boxes are set up inside the workshops. Able to store around 1m³ of material, they can be used for both ferrous and non-ferrous metals. The box is then collected and exchanged for an empty one either on a regular basis or when the customer calls. The contents are checked and weighed on site when the box is collected.

Using box lorries, the full containers are transported to a TSR branch where the contents are separated according to type and individually weighed. This enables the company to determine the exact value of the different types of metal. This information is then used to issue the credit notes and

invoices. "This means we have a totally transparent and easy-to-understand system which also includes all the waste management documents that are required by the various authorities," explained Christian Blackert, head of key account management & services at TSR.

The pilot phase began in Dortmund in May with the company being supported by REMONDIS' sales staff. Now also found in Koblenz, TSR's overall goal is to offer THE METAL BOX to all its customers across the whole of the country.

THE METAL BOX takes up very little space, is easy to fill and can be moved with a pallet truck



An ideal solution for an apprenticeship workshop

The association for plumbing, heating and air-conditioning technology responsible for the towns of Dortmund and Lünen has also decided to deploy this clever system for separating their recyclables: five boxes are currently being used at its apprenticeship workshop. "They save us time which means we have more time for our apprentices," explained Joachim Susewind, managing director of the association. "The fact that we are also helping to protect the environment and conserve natural resources at the same time is an added bonus." Several member firms have followed suit and are now also using the METAL BOX.





Chancellor of Germany, Angela Merkel, also paid a visit to the Federal President's summer festival

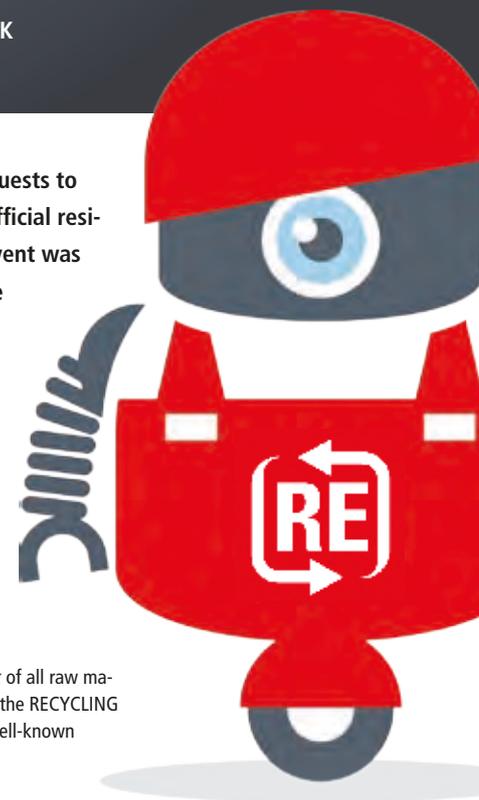


The RECYCLING PROFESSIONALS at the Federal President's summer festival

REMONDIS PAYS TRIBUTE TO ALL ITS EMPLOYEES DOING VOLUNTARY WORK



German head of state, President Joachim Gauck, invited a wide range of guests to attend his 2015 summer festival which was held at Schloss Bellevue, his official residence in Berlin, on 11 and 12 September. As every year, the focus of the event was on voluntary work. The first day was dedicated to a select group of people who the Federal President had invited to thank them for the work they carried out as volunteers, giving up so much of their free time to help those around them. Everyone was welcome to go along to the second day of the festival. Many of REMONDIS' staff also do voluntary work. An excellent reason, therefore, for the RECYCLING PROFESSIONALS to invite ten colleagues and their partners to travel to the event to represent all of the company's volunteers and spend an unforgettable weekend in Berlin.



Robin, the protector of all raw materials, has become the RECYCLING PROFESSIONALS' well-known mascot



This year, the RECYCLING PROFESSIONALS team welcomed a group of REMONDIS employees to the event, all of whom do voluntary work in their free time

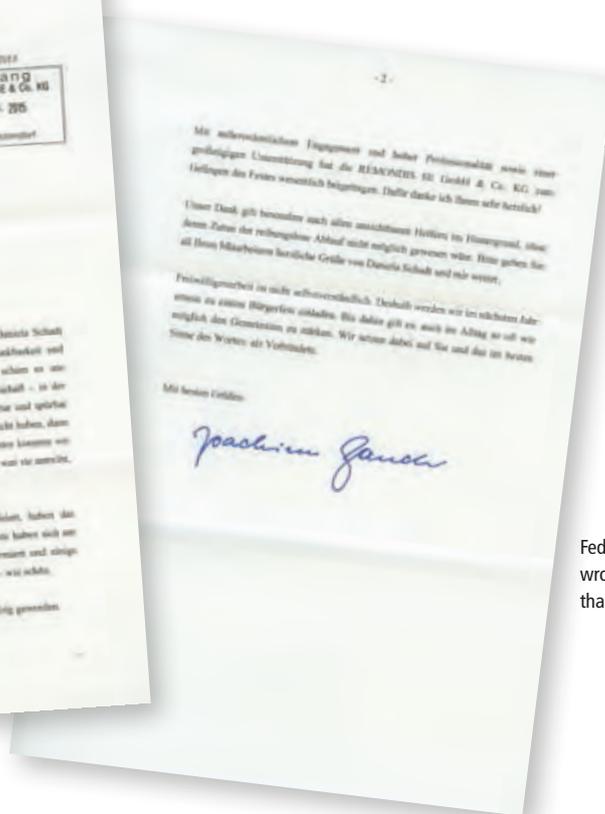


REMONDIS' educational RECYCLING PROFESSIONALS project had already left a lasting impression at the 2014 summer festival. They were, therefore, invited to return this year to set up a stand in front of Schloss Bellevue so that they could continue their work of teaching children about the importance of recycling and safeguarding our planet's natural resources. This year, however, REMONDIS went even further. A large number of people from across the whole of the group regularly give up their free time to help those around them by doing voluntary work. REMONDIS and the RECYCLING PROFESSIONALS decided to make the most of this opportunity and give away ten exclusive 'plus one' tickets to the Federal President's summer festival for 11 September 2015, including an overnight stay at a hotel in the centre of Berlin. All company employees who do voluntary work in

their spare time were invited to put their names into the hat. No matter whether they worked as volunteers in their local sports club, for their church or to protect animals – the type of voluntary work was irrelevant here. The only condition was that their voluntary work was carried out in Germany.

As was the case last year, the summer festival – held both in and around Schloss Bellevue – was a great success and an unforgettable weekend for all the volunteers, to whom the Federal President paid tribute during his speech. Federal President Gauck also thanked REMONDIS and the other participants for helping to make the summer festival such a success. REMONDIS and the RECYCLING PROFESSIONALS would be more than happy to go back there again next year.

Life as we know it in Germany would hardly be possible without the hard work of so many volunteers



Federal President Joachim Gauck wrote a letter to REMONDIS to thank them for their efforts

High levels of efficiency in Kiel

KIEL'S WASTE INCINERATION PLANT HAS BEEN AN INDISPENSABLE PART OF THE NORTH GERMAN WASTE MANAGEMENT SECTOR FOR 40 YEARS



MVK's event was attended by a number of high-profile guests (from left to right): Sabine Schirdewahn, head of Städtischer Eigenbetrieb Beteiligungen (SEK), MVK CEO, Frank Ehlers, Wolfgang Steen, Managing Director of REMONDIS Region North, Robert Habeck, Environment Minister of Schleswig-Holstein, Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, Rüdiger Karschau, Chairman of MVK's Supervisory Board

The boiler at the waste incineration plant in Kiel, the MVK, was heated up for the very first time 40 years ago. Today, with an efficiency level of 71%, it is one of the world's most efficient incineration plants of its kind. Here, the plant takes non-recyclable waste produced in Kiel and the neighbouring districts and uses it to generate electricity and heat for the local inhabitants and industrial businesses. These activities are also making an important contribution to preventing climate change.

The plant's 40 years of business was officially celebrated in September – in the presence of the Environment Minister for the German state of Schleswig-Holstein, Robert Habeck, and Norbert Rethmann, honorary chairman of the supervisory board of the Rethmann Group, as well as many other guests from the worlds of politics and business. During the event, city councillor, Wolfgang Röttgers, pointed out that the plant was an excellent example of how the very most could be made of waste. The MVK, he said, was providing around 20% of the district heat needed by the City of Kiel. Rüdiger Karschau, a long-standing member of the city council and chair-

man of MVK's supervisory board, remarked that the MVK had been well accepted by the local inhabitants before adding: "at least it is not on their list of bugbears".

There was also another reason why managing director, Frank Ehlers, and his many guests could be proud of the high efficiency levels of the plant, which is owned by the City of Kiel (51%) and REMONDIS (49%). A perfect example of a successful public private partnership, the MVK helps to take the pressure off the public purse year on year and, as a result, off all the local residents.

Despite being 40 years old, MVK Kiel is one of the most efficient plants of its kind thanks to the investments that have been made over the years



It was Schleswig-Holstein's Environment Minister Robert Habeck, who emphasised the "considerable contribution" that the MVK was making towards Germany's efforts to switch from fossil fuels to renewables. During his speech, he underlined the importance of sending waste for materials recycling so that their raw materials could be recovered and reused. At the same time, he praised the fact that the plant and its state-of-the-art technology were acting as a role model for others: "If waste has to be incinerated, then let's hope it's being done at a plant like the one here in Kiel."

REMONDIS Australia: Recycling for Rio Tinto

SERVICES PROVIDED FOR REMOTE MINING LOCATIONS

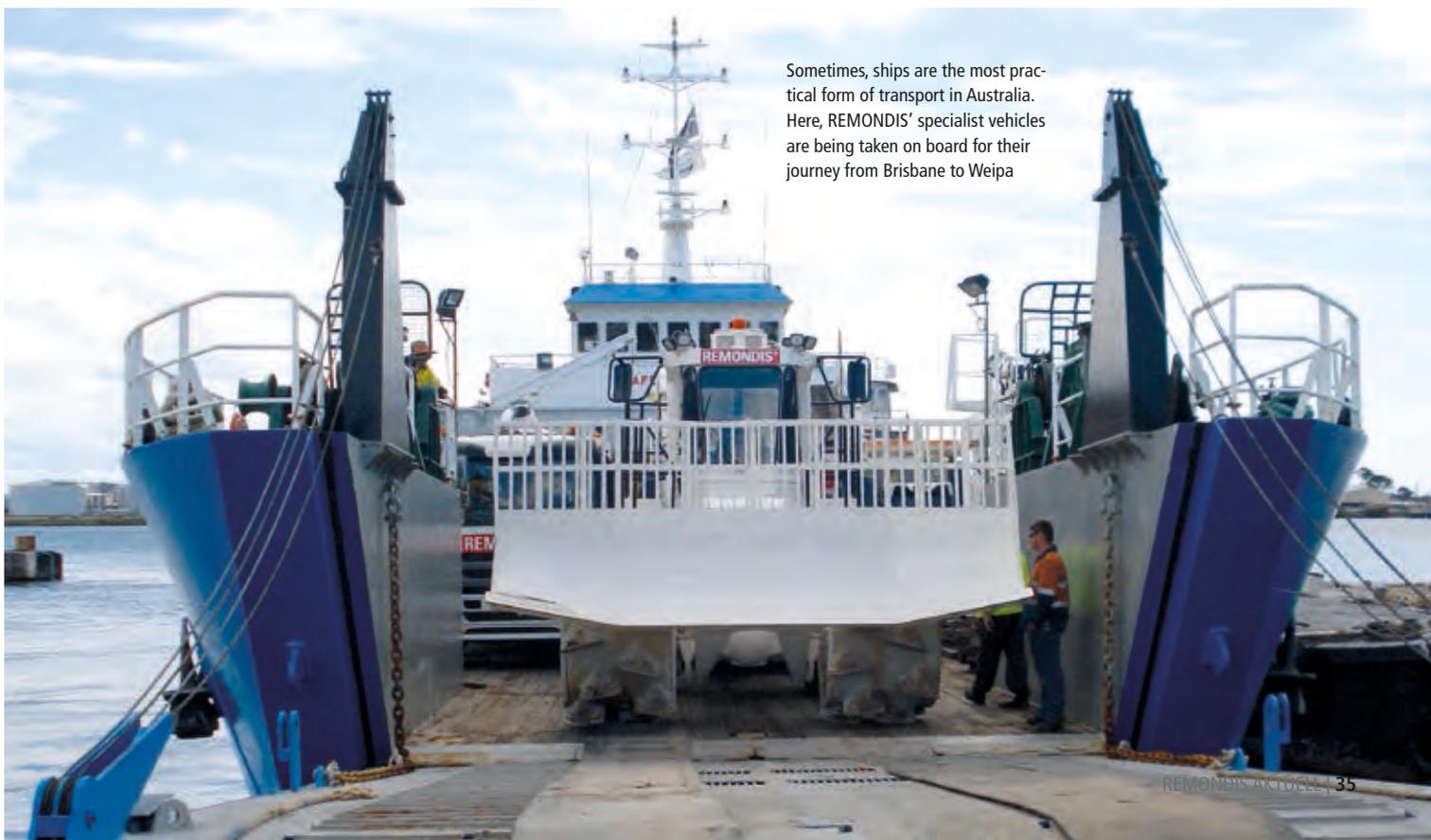
REMONDIS Australia has secured a contract with Rio Tinto, a prestigious multinational mining company founded in 1873. Back then, the company reopened ancient copper mines beside the River Tinto in southern Spain – mines that dated back to the Bronze Age and which had been an important source of copper for the Roman Empire. With a turnover of 41.83 billion US dollars, Rio Tinto is now one of the world's top three mining businesses alongside Anglo American and BHP Billiton and – since its takeover of Alcan – the world's leading aluminium producer.

REMONDIS Australia will now be providing waste and recycling services to Rio Tinto's mining operations in Cape York and the supporting township of Weipa, located in the very north of Australia. A quick look at the map makes it very clear just how challenging the logistics will be for this project. The south coast of Papua New Guinea is much closer to the mine than the nearest Australian city. Weipa is located approx. 2,500km north west of Brisbane and can only be accessed via an unsealed road in the dry season (April to December). Outside of these months, the region receives in the order of 2,000mm of rain and access to the town is often only possible via a 7-day barge voyage between Cairns and Weipa. REMONDIS Australia is more than happy to take on this challenge. The company already has much experience of working at remote sites, for example when it managed waste for the construction of BG's mega liquefied natural gas plant on Curtis Island. REMONDIS Australia's

experience and its capability to deliver flexible and innovative waste management solutions were the key reasons behind Rio Tinto's decision to select the company to be its partner. The contract began at the beginning of October with business units from all over Australia working together to mobilise specialised equipment in a very short period of only six weeks. In addition to procuring and preparing the equipment in this tight timeframe, the team also had to charter two large barges to send the equipment on a 10-day voyage from Brisbane to Weipa. The team must face some unusual challenges, including operating in extremely dusty conditions. Moreover, Australia's largest salt water crocodiles are prevalent in the region and are frequently sighted in the town. A logistical feat, therefore, which could prove to be an incentive for other large businesses in Australia to collaborate with REMONDIS.



Recycling in the outback:
40°C in the shade, dust
and crocodiles



Sometimes, ships are the most practical form of transport in Australia. Here, REMONDIS' specialist vehicles are being taken on board for their journey from Brisbane to Weipa

Looking to the future

OPINION LEADERS DISCUSS THE CHALLENGES FACED BY THE WATER AND RECYCLING INDUSTRIES

“Innovation – Sustainability – A Strong Society & Economy”. This was the motto of this year’s REMONDIS Forum, which was held in the German city of Hagen in September. REMONDIS Aqua invited over 300 guests from the worlds of politics, business and science to join them at the event to discuss the subject of sustainability and take a look at the future of the water and recycling industries.



Future
NEXT EXIT ↗



1.6m tonnes

If all the sewage sludge in Germany were used as a source of energy, it could cut CO₂ emissions by ca. 1.6 million tonnes a year

Ranga Yogeshwar, physicist, author and science journalist, attended the REMONDIS Forum to explain how innovations change our society

Andreas Bankamp, Managing Director of REMONDIS Aqua, was pleased to hear the positive feedback from the guests attending the REMONDIS Forum, one of the biggest events held in Germany to focus on water and sustainability



Ralf Czarnecki, Head of Material Flow Management at REMONDIS Aqua, held a talk on sewage treatment plants and the possible ways of recycling the valuable sewage sludge

The topics and speeches held at this year's forum focused on the current challenges caused by the rapid advances being made in the field of technology. Climate change was also discussed as were the subjects of raw material supplies and the provision of drinking water and energy.

Global challenges affecting local communities

Considerable time was spent debating about the significance of technical and structural innovations with regard to sustainability. Having a guaranteed supply of raw materials is essential for an industrial country such as Germany and this fact played a significant role in the discussions. Guest speakers at the 2015 REMONDIS Forum included the well-known science journalist, Ranga Yogeshwar, Prof. Eckard Minx, board spokesman of the Daimler and Benz Foundation, as well as the chairman of the German Advisory Council on the Environment (SRU), Prof. Martin Faulstich. Klaus Jürgen Maack, former managing director of the lighting manufacturer ERCO, explored this subject from the point of view of a producer.

Sewage sludge: a source of energy and raw materials

Ralf Czarnecki, head of material flow management at REMONDIS Aqua, described the new directions that the water industry was heading in. Here, he primarily focused on sewage sludge as a valuable resource and source of energy. 45 to 75 percent of dried sewage sludge comprises organic substances which can be used to generate energy. Looking at the total amount of sewage sludge produced in Germany, this source of energy could – were it to be used to its full

potential – reduce carbon emissions by around 1.6 million tonnes a year. Phosphate makes up approx. 5 to 10 percent of dried sewage sludge and is, as far as REMONDIS Aqua is concerned, a sustainable source of recycled phosphorus. Were the most to be made of this source, then 90,000 tonnes of P_2O_5 could be recovered and reused every year.



Interested listeners: Prof. Martin Faulstich, Prof. Eckard Minx and ENERVIE Chairman Wolfgang Struwe at the REMONDIS Forum in Hagen (from left to right)

A catalyst for innovative solutions

The 10th REMONDIS Forum was held in the German state of North Rhine-Westphalia for the first time. The reason behind this decision was REMONDIS' shareholding in ENERVIE – Südwestfalen Energie und Wasser AG, a company based in Hagen that supplies energy and water to the region. REMONDIS Aqua has owned shares in ENERVIE since the middle of 2014. Andreas Bankamp, managing director of REMONDIS Aqua commented: "The forum provided an ideal platform to exchange information with each other and find ways to further develop the areas of supply and energy."

Gemünden am Main celebrates 10-year anniversary

PUBLIC PRIVATE PARTNERSHIP MARKS TEN YEARS IN BUSINESS

REMONDIS Aqua's role in the public private partnership with the Gemünden utilities company includes operating the central sewage treatment plant and the approx. 120km sewage network

REMONDIS Aqua has been collaborating with the municipal utilities company, Stadtwerke Gemünden am Main, since 2005 – working as its private sector partner responsible for the technical operations of the city's wastewater facilities. The partners used the public private partnership's ten-year anniversary to sum up their successful collaboration and take a look at their future work together.

Representatives of the utilities company and REMONDIS Aqua travelled to the Gemünden central sewage treatment plant in October to celebrate the successful work carried out by the public private partnership over the last ten years. They were joined by guests from the worlds of business and politics including Thomas Schiebel, district administrator of the Main-Spessart district, and Mayor Jürgen Lippert.

of the plant which was built with REMONDIS' help to replace five smaller sewage treatment plants located around the region. Thanks to this modern facility, the wastewater produced by the city and neighbouring districts has been able to be treated far more efficiently helping to keep wastewater charges stable.

“Gemünden is a great example of how mutual trust can create the basis for long-term, successful collaboration work.” Michael Figge, Area Manager at REMONDIS Aqua

The Gemünden utilities company and REMONDIS Aqua joined forces to create a sustainable business – as always working for the future. Both partners decided right at the start that state-of-the-art technology should be deployed at the central sewage treatment plant. The ten-year anniversary celebrations, therefore, were also used to present the TetraPhos® system, a process developed and patented by REMONDIS Aqua which enables phosphoric acid to be recovered from sewage sludge ash.

The Gemünden central sewage treatment plant serves over 12,000 local residents living in 13 different districts. REMONDIS Aqua is responsible for the technical operations

A milestone well worth celebrating: Thomas Schiebel, district administrator of the Main-Spessart district (left), presenting Henry Bürgermeister, plant manager of REMONDIS Aqua Gemünden, with a gift basket

REMONDIS®
IM AUFTRAG DER ZUKUNFT



Sewage treatment plants: a source of raw materials
REMONDIS Aqua has been looking into ways of recovering phosphorus for many years now. Their goal is not only to use the phosphorus to make fertilisers but – and above all – to produce valuable phosphates for industrial businesses. Their innovative TetraPhos® process enables high quality phosphoric acid to be recovered from sewage sludge ash. This acid is an important source material for producing phosphorus compounds which can, in turn, be used to manufacture a whole range of different products.

WAL-Betrieb receives 'Apprenticeship Award 2015'

REMONDIS AQUA'S SUBSIDIARY PROVIDES YOUNG PEOPLE WITH VALUABLE CAREERS ADVICE



Photo: medienlabor GmbH/Benjamin Maltry

(from left to right) Minister of Employment Diana Golze, Sirii Werner (one of WAL-Betrieb's young skilled workers), Karin Rusch (managing director of WAL-Betrieb), Ulf Riska (head of legal affairs/personnel development at WAL-Betrieb), Albrecht Gerber, Minister for Economic Affairs and Energy

Wasserverband Lausitz Betriebsführungs GmbH (WAL-Betrieb) from Senftenberg, a REMONDIS Aqua subsidiary, was one of ten companies to be presented with the 2015 Brandenburg Apprenticeship Award by the Minister of Employment, Diana Golze, in recognition of its commitment to helping young people find a future career and its high quality apprenticeship schemes. Having received an award in the past for being a particularly family-friendly business, this latest prize once again demonstrates how social responsibility and business success go hand in hand at REMONDIS.



A total of 72 companies had put their names forward for the award. Minister President Dietmar Woidke is patron of the event. Albrecht Gerber, Minister for Economic Affairs and Energy for the German state of Brandenburg, held a speech at the awards ceremony praising the work of all the winners. He said WAL-Betrieb was a company that was hard to beat when it came to helping young people choose a career and made a special mention of their highly successful efforts to counteract the skills shortage. WAL-Betrieb's close contact to the local schools clearly demonstrated its ability to think and plan ahead, he continued.

"The schools always welcome this water company from Senftenberg with open arms. They use a variety of methods to help the schoolchildren immerse themselves in the

world of water – from lively talks all the way through to simulation games. The children not only get to discover more about their own region but also learn about the interesting job opportunities offered by the water sector. For example by Wasserverband Lausitz Betriebsführung GmbH. Put in a nutshell: WAL-Betrieb is thinking well ahead about its future workforce," Albrecht Gerber said. Helping young people also means providing them with good career prospects. Those doing an apprenticeship at WAL-Betrieb who achieve good results in their exams are guaranteed a well-paid job at the end of their course. "For the company knows that nowadays good, motivated and loyal employees are their most important raw material." With these final words of praise, he and the Minister of Employment Diana Golze handed over the certificate to the company.

Social responsibility and business success are not mutually exclusive at WAL-Betrieb and REMONDIS Aqua

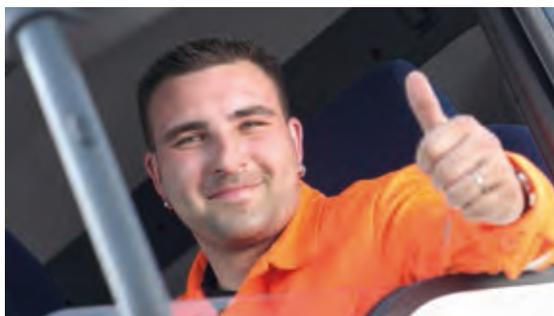
REMONDIS to help build a football stadium in Saransk

The 2018 FIFA World Cup is being held in Russia. Many towns across the Russian Federation have already begun building new stadiums for this huge sporting event – as has the Mordovian city of Saransk. REMONDIS Saransk has been awarded a contract to manage all of the waste generated by the stadium building site and will be collecting the construction waste in 20m³ skips so that it can be sent on for recycling. REMONDIS will be deploying hook lift technology for the first time in Mordovia, a system that is often found in Germany but is still relatively unknown in Russia. REMONDIS has already been using this and other systems to

collect waste from the “Sity Park” construction site (where Mordovia’s largest shopping centre is currently being built) as well as from a number of leading industrial businesses in the region.

Saransk is one of the eleven venues for the 2018 World Cup in Russia. The new football stadium will be called the “Mordovia Arena” and should be ready by the end of 2017. Once again, REMONDIS has proved to be a reliable partner capable of providing innovative waste management solutions for strategic projects in the Russian Federation.

REMONDIS once again “Services Champion” in the waste management sector



The ‘Services Champions’ have been named for the fifth year running and presented with Germany’s most prestigious seal of quality for customer satisfaction. Comments from over 1.5 million customers about the services provided by over 1,989 companies from a total of 232 different industries were evaluated to find the winners. The assessment,

which is based on a valid and scientifically robust system, only takes the appraisal of customers into account who have had first-hand experience of working with one of the service providers. At no stage, therefore, could the companies providing the services influence the results of the awards, which are presented by ServiceValue GmbH in collaboration with DIE WELT newspaper and Goethe University in Frankfurt am Main.

This year, REMONDIS was once again named “Services Champion” in the waste management sector. REMONDIS would like to thank all its customers, partners and employees for their great collaboration work. We look forward to continuing our successful work together – working for the future to promote sustainability.

REMONDIS Production with an accredited energy management system

During a three-day audit at the end of the summer, REMONDIS Production's energy team were able to demonstrate to the auditors of ZER-QMS, an independent inspection and certification body, that they had successfully implemented an energy management system in accordance with the DIN ISO 50001 standards. Despite the complex structure of REMONDIS Production with its wide range of businesses (metal slag recycling, plaster, Alumin and Casul production facilities, power station and landfill, Lippe Plant supply networks), it has succeeded in setting up an energy management system that meets all the DIN requirements. A systematic process is currently being carried out to gather information about how business operations could be improved. Any suggestions are evaluated and their effectiveness monitored once they have been implemented. An examination of the way compressed air was produced, for example, resulted in the system being optimised and electricity consumption has now been cut by around 1,200 MWh compared to 2012. The recycling and production facilities at the Lippe Plant consume considerable amounts of energy, including up to 50,000 MWh electricity generated by the company's own power station. The new energy management system should reveal a number of areas where savings could potentially be made.



(from left to right) Michael Mohri, Energy Management Officer at REMONDIS Production, Hans-Jürgen Fengler, ZER-QMS certification body, Kai-Erik Sattler, Energy Management Officer at REMONDIS Production, Silvio Löderbusch, Managing Director of REMONDIS Production, and Jens Besselmann, Head of Facility Management at REMONDIS Production, being presented with their energy management certificate

Putting the numbers into perspective:

1 kWh of electricity can be used to:

- work on a laptop for ca. 50 hours
- watch TV for 15 hours (modern LCD television)
- use a vacuum cleaner for approx. 25 minutes
- make up to 70 cups of coffee
- use a 100-watt bulb (non-stop) for 10 hours
- use a 10-watt energy-saving bulb (non-stop) for 100 hours

GreenTec Awards 2016 – REMONDIS TetraPhos® in the TOP 10 in the category Recycling & Resources

REMONDIS' TetraPhos® system for recovering phosphate from sewage sludge ash has made it onto the shortlist of the final TOP 10 nominees for the prestigious GreenTec Awards. Phosphoric acid is used in nearly all phosphorus products, especially in fertiliser and animal feed. For years, scientists across the world have been looking for ways to recycle phosphorus cost effectively as it is vital for life on Earth and natural reserves are slowly being used up. New solutions are needed to ensure there is sufficient food for the world's growing population. REMONDIS' TetraPhos® process is eco-friendly, efficient and cost effective and helps to conserve our planet's natural resources in a number of different ways. The two engineers, Marco Voigt and Sven Krüger, founded the GreenTec Awards in 2008 with the aim of creating an internationally significant environmental

award. Since then, the awards have been presented every year providing a platform that puts environmental technologies and commitment in the spotlight. The GreenTec Awards have a number of well-known supporters including Federal Minister Peter Altmaier, Chief of Staff of the German Chancellery, who has been backing the event for several years now.

The GreenTec Award's online voting system went live on 08 December 2015 and everyone is invited to cast their vote. You, too, could vote for REMONDIS' TetraPhos® system by going to <http://www.greentec-awards.com/en/competition/online-voting-2016.html>





Norbert Rethmann becomes Honorary Citizen of Selm

ALWAYS ON HAND TO OFFER HIS HOME TOWN HELP AND ADVICE

Throughout its history, the German town of Selm has granted the status of Honorary Citizen to just six of its residents. A seventh name has now been added to this list. At the beginning of October, the Mayor of Selm, Mario Löhr, held a Special Presentation Award Ceremony to hand over a certificate to Norbert Rethmann granting him the title of Honorary Citizen. Just one day before, the town council had voted overwhelmingly in favour of granting this status to 76-year-old Norbert Rethmann.

The City of Selm has much to thank Norbert Rethmann for. This is where the group's success story began 81 years ago

In his speech, Mario Löhr paid tribute to Norbert Rethmann acknowledging the outstanding service and commitment he has made to the community of Selm. "You have served our town in so many different ways. Your achievements as an entrepreneur and the support you have shown for the worlds of art, sport and science have had a huge influence on our local economy and culture. The time scheduled for today's ceremony is not long enough for me to list all the things you have achieved in your eventful and influential life so far," the mayor commented. Selm, he continued, had granted Norbert Rethmann the title of Honorary Citizen to show its appreciation for his great commitment to the town. "This is the first time this title has been granted this century and we could not have chosen a more deserving person. Many, many congratulations." Mario Löhr also mentioned the financial support the town had received enabling it to purchase and maintain the 'Burg Botzlar' building in the centre of Selm. Moreover, Norbert Rethmann's business activities have had a huge

beneficial effect on Selm, making the town a well-known name across more than 30 countries. "The company has provided a secure job for many people living in and around Selm."

Norbert Rethmann was very moved by the ceremony and honoured to be given this title. "It is a huge honour to be granted the status of Honorary Citizen by the City of Selm. Even if I spend much time travelling to our company's locations around the world and no longer live in Selm, this town is an inherent part of my life – a place that I love coming back to. This is where my friends and relatives live and all the other people who have been so important to me and my family over the decades. This is where I grew up; the region has shaped me personally and my business activities," he said in his acceptance speech. Many guests from the worlds of business and politics attended the ceremony in the town hall to congratulate him on his new status as Honorary Citizen of Selm.

> Impressions



◀ Norbert Rethmann, Honorary Chairman of the Supervisory Board of the RETHMANN Group, at the 14th WEEE Day at the bvse in Kiel

Federal Minister for the Environment Dr Barbara Hendricks and Aloys Oechtering, Managing Director at REMONDIS, during a visit to the biogas plant in Coesfeld, a KlimaExpo.NRW reference project



▲ Dr Anton Hofreiter, Parliamentary Leader of the Bündnis 90/DIE GRÜNEN (Green Party), during his visit to REMONDIS' Lippe Plant in Lünen



◀ Daimler CEO, Dr Dieter Zetsche, believes the battery storage unit at the Lippe Plant will also help to make e-mobility more efficient

Klemens Rethmann, Board Spokesman of the RETHMANN Group, holding a speech during the groundbreaking ceremony for Germany's largest second use battery storage unit which is being built at the Lippe Plant in Lünen



The sheep always have right of way – a "traffic jam" in front of the Lippe Plant



The team of pupils (right) from the Geschwister Scholl secondary school in Lünen, who are supported by REMONDIS, won the Bronze Medal at a competition in Qatar for their robotic vehicle which they had designed and built themselves



Hunting for lost treasure

It's not arguments that we need to find nowadays for recovering recyclables but materials such as glass. Which is why there are more than 300,000 bottle banks located around Germany and why around 2.4 million tonnes of green, brown and clear glass are collected every year and recycled into high quality raw materials – a recycling rate of 85%. Not only are 67.5 billion kilojoules of primary energy saved (compared to the production of new glass), using recycled glass also substitutes 2 million tonnes of silica sand and helps reduce the impact the quarries have on our landscapes. Numbers that are crystal clear and which we are also helping to achieve. Every single day.