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40 YEARS OF WASTE LAW

In 1971, the German government drew up its first environmental programme with a list of planned laws and ordinances laying the foundation stone for the German Waste Law. A lot has happened since then. In this edition, REMONDIS aktuell begins a new series showing how Germany became world champions in recycling. **Page 4**



WATER AND WASTE – EVERYTHING IS CLEAN AT VW

Asia is gradually becoming a magnet for the global economy and India is playing a significant role in this process. One example here is the city of Pune. This town, situated in the state of Maharashtra, is an important industrial location. REMONDIS is no longer just providing water management services for the VW plant located there. It recently took over the waste management of the plant, too. A forward-looking partnership. **Page 8**



PROTERRA PROVIDES CLEAN CONSTRUCTION LAND

REMONDIS ProTerra specializes in redeveloping contaminated areas and disposing of contaminated mineral waste. During such projects, ProTerra is responsible for carrying out all individual services from drawing up a concept to doing the construction work, from collecting and transporting the materials to dealing with all documentation work. Each year, it transports over 600,000 tonnes of material. These remediation experts have once again been able to demonstrate how to gain ground in two major projects. **Page 12**

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Flag

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EDITORIAL

Dear Readers!

Admittedly we are a little early using this edition to start our series about the forty-year history and milestones of waste legislation in Germany. The first German Waste Law came into force in 1972. Knowing the conditions at that time, however, we can without doubt assume that both the preparation work and the concrete steps taken to draw up this pioneering law were in full swing in 1971 – i.e. exactly 40 years ago. That said the further developments over the last 40 years have shown that REMONDIS was, a good few times, ahead of the others playing the role of pioneer in the field of development. Thus, Norbert Rethmann had already drawn up his corporate guidelines in the seventies in which he clearly introduced his idea of “Recycling rather than disposal” – a fundamental principle that did not find its way into German law until many years later and into European waste law at an even later date. The next phase of development is now coming into being with the new German Law on Life-Cycle Management. The current yellow bin used for recyclables is to be replaced with a genuine recycling bin. And this is very important because the matter in question is no longer to save on landfill space as was the case when the first edition of the German Packaging Ordinance was passed at the beginning of the 90s but to supply as many raw materials as possible. With this in mind, the change to the law was well overdue.

More than once, REMONDIS has played and still is playing a significant role in technical innovations and the further development of waste legislation in Germany and Europe. With the result that many countries and local authorities abroad are looking to work closely together with REMONDIS and use the German water and environmental services sector as their role model. India is one good example of many of this international commitment. REMONDIS Aqua is the preferred partner for large international companies such as VW and Lanxess when it comes to environmentally friendly wastewater treatment and disposal. And such a status cannot be taken for granted for extensive know-how and, above all, a strong local pres-



Ludger Rethmann,
REMONDIS Board Member

ence are needed to perform top quality water management services, particularly in threshold countries such as India. Both industrial customers and local authorities benefit from this know-how. In contrast to the public debate about the renationalization of water management services – a debate that can be put down to the current political climate rather than concrete facts – REMONDIS Aqua demonstrates every day how private sector commitment can be advantageous for both consumers and the public purse. An impressive example is the City of Gemünden which has been relying on REMONDIS for all matters concerning wastewater treatment for six years now. The result has been stable wastewater charges coupled with the highest levels of safety and efficiency.

Let us return once again to the pioneering role REMONDIS plays. When David de Rothschild sailed across the Pacific from San Francisco to Sydney in his self-made catamaran made from waste plastic in 2010 to raise awareness of the increased pollution of the world's seas caused by plastic waste, he did not realize that REMONDIS had already been pushing the solution to this problem for many years. Indeed, 30 years ago, REMONDIS was one of the very first companies to start carrying out plastics recycling on a large scale – a fact David de Rothschild was able to learn for himself during a presentation given at the Lippe Plant in Lünen. Plastics, which are recycled, cannot end up in the sea. And, we believe, that is another very good piece of news from REMONDIS. And you can find more good news in this edition of our company magazine.

I hope you enjoy reading this edition of REMONDIS aktuell.

A handwritten signature in dark ink that reads "Ludger Rethmann". The signature is written in a cursive, flowing style.

Yours Ludger Rethmann

The 70s – the age of waste disposal

PRIORITY PUT ON AVERTING RISKS AND PROTECTING HEALTH

Disposing of waste whilst avoiding harmful influences – this was the main goal of the 70s. Practicable collection bins were designed, safe landfills built and disposal processes created for hazardous waste. Recycling played, at best, a minor role during this period.

The post-war period was finally over, the economic upturn achieved and growing prosperity was changing consumer behaviour: as was the case in other Western countries, Germany was turning into a throwaway society. What used to be kept for future use or burned in the stove when times were hard was now being thrown away as rubbish. The volumes of waste, which had already doubled in the 60s, were continuing to rise steadily. The all important question was, therefore, where to put all this waste?

Protecting natural habitats

At this time, incineration plants were still the exception rather than the rule. For the most part, household waste was taken to nearby waste dumps which today would be labelled more or less as illegal dumps. As the consequences of dumping waste like this became more and more obvious,

it was soon clear that the situation had to change. It was one thing to want to dispose of waste safely. It was quite a different thing, however, to actually be able to do this. For, facilities that did not have a negative impact on the ground, air and water first needed to be developed. Being one of the very first pioneers, REMONDIS carried out fundamental research work, evaluated the results and worked on solutions. The world of politics reacted, too. It set out the first German environmental programme in which it planned over 100 laws and ordinances including the "Abfallgesetz" ("AbfG" / Waste Law). It came into force in 1972 and represented the first element of German waste legislation and created for the first time legal regulations that were valid across the whole of the country. The aim of the "AbfG" was to ensure that residual waste was disposed of without there being any harmful influences. ▶

At the beginning of the 70s, around 50,000 more or less disorganized landfills were used for disposing of waste in Germany.



◀ Celebrations were held in Selm to mark the purchase of the 100th lorry. Taking part were Josef (3rd from right), Norbert (3rd from left) and Martin (4th from left) Rethmann.

1972

1972 "Abfallgesetz" ("AbfG" / Waste Law):

This laid down the law on how to dispose of waste and applied to the whole of the country



- ▶ In order to be able to achieve this, waste disposal was made the responsibility of the public sector and it became a legal obligation to dispose of waste in approved facilities.

“Recycling rather than disposal” – Norbert Rethmann came up with this fundamental principle back in 1978, long before the legislators.

Important milestones

The first structured landfill was set up and operated in what is today the district of Coesfeld in 1972. This was carried out with the help of REMONDIS demonstrating just how far ahead the company already was at that time. This facility, which was setting an example for others, put priority on protecting the groundwater. Thus, the landfill had seals to protect the ground and the materials delivered were added to the landfill in layers in a controlled manner. The private waste management company also carried out intensive groundwork in the area of hazardous waste. According to the “AbfG”, city and district authorities had the right to exclude types of waste from their area of responsibility, an

option which was taken advantage of, in particular for potentially hazardous materials. As a result, waste, which had originally been seen as one entity, was divided up into two groups – household waste and hazardous waste.

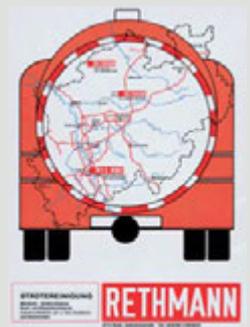
At the end of the 70s, REMONDIS opened up the first chemical-physical treatment plant for hazardous waste in Germany. At the same time – and almost as a side-effect – a wastewater treatment facility was built for the plant in which wastewater was channelled directly into the drainage ditch and the residual materials, which had been filtered out, taken to suitable landfills. At this time, only a few large chemicals businesses operated hazardous waste incineration plants. REMONDIS decided to become active in this area, too, in order to further open up this promising treatment method. An important step was taken when it bought into an incineration plant for waste oil in Bramsche. This site

Waste disposal as a public sector duty

In the 70s, private sector companies were very much involved in the collection and disposal of waste. They became worried once they realized that the “AbfG” intended to considerably extend the areas of responsibility of local authorities. The fear was that monopolies sanctioned by law could prevent free competition and block innovation. Private sector companies vehemently advocated that the commissioning of contract work be allowed to continue. And they were successful – the “AbfG” made it possible for municipalities to commission companies with the task of collecting waste. Despite this, however, many local authorities used this law to assign waste disposal to their own firms. Contracts with service providers were terminated and industrial and commercial waste, which had primarily been disposed of by the private sector, put under the control of the authorities. Within a very short period of time, the privately run businesses lost a large part of their market share. In order to remain in control of the situation, they concentrated on working efficiently, profitably and future-oriented. A strength that they are still benefiting from today.



◀ In 1974, the first branch outside the state of NRW was opened in Gifhorn. Present at the occasion: Josef Rethmann (2nd from left), Norbert Rethmann (2nd from right) and Friedrich W. Stever (right).



At this time, just a few branches were to be found on the first RETHMANN brochures.

1974

1974 TA Luft & Bundes-Immissionsschutzgesetz (BImSchG / Federal Emissions Control Act)
This stipulated the regulations concerning the approval of plants

1974





then underwent extensive modernization work and was extended and upgraded to enable it to treat hazardous waste.

Plastic bins – the first export hit

Parallel to the developments in the area of plants and facilities, the field of logistics was also being pushed forward, in particular container and bin systems. At the beginning of the 70s, small round metal bins were used for waste disposal – hardly a suitable container for collecting modern waste. Private sector waste management firms recognized this shortcoming and created their first global success with their plastic bins. The prototype, a 220-litre bin, was tested in 1972 by two companies at the same time: EDELHOFF in Letmathe and REMONDIS in Alt-Lünen. For a while, both towns became the place to visit for delegations from all corners of the world. Within just a few years, the MGB 240, a larger version of the new type of wheelie bin, became a success across the globe.

Ahead of his time

Whilst others were concentrating on disposing of waste safely, Norbert Rethmann, today honorary chairman of the supervisory board, was already thinking a step further. In 1978, as head of the family run firm, he drew up a set of corporate guidelines which are still valid today. In these guidelines, he incorporated the principle “Recycling rather than disposal” – long before this idea had been regulated in the relevant legislation by politicians. It goes without saying that this belief was expressed not only in words but also in deeds: by purchasing the collection company, Falk in Münster, REMONDIS entered the waste paper market and hugely expanded this business field. At the same time, the first systems were introduced to collect glass separately and process it. The next stage of development – the age of waste management – was already beginning to cause something of a stir.

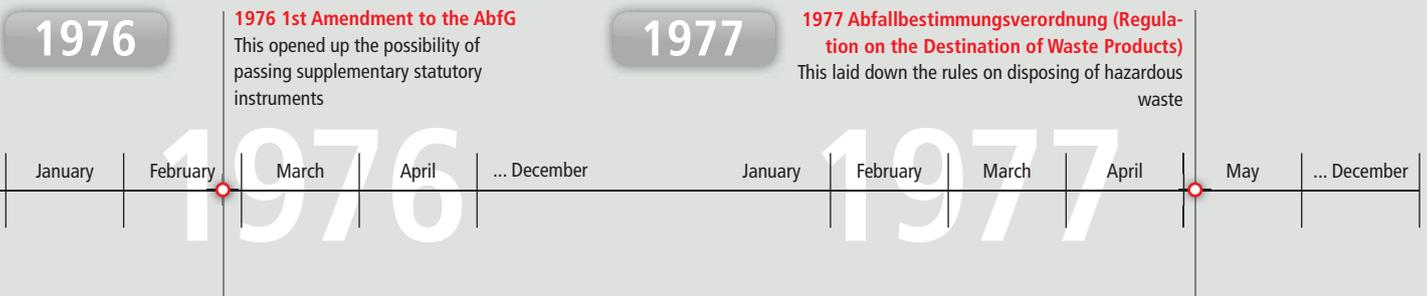


“The impressive way in which waste legislation has developed in Germany is serving as a role model for other countries. Today, many countries, in particular those in Central and Eastern Europe, are trying to set up recycling sectors based on the German model. Increasingly, REMONDIS is also implementing these high standards in international markets.” Egbert Tölle, REMONDIS Board Member



◀ In 1976, the Coesfeld branch was put into operation.

The field of hazardous waste disposal was also steadily expanding. Large suction vehicles were deployed to collect liquid hazardous waste (here drilling mud) from the customers’.



Environmental services

Water and waste – everything is clean at VW

REMONDIS IS RESPONSIBLE FOR IN-HOUSE WASTE LOGISTICS AND RESOURCE MANAGEMENT AT VW'S SITE IN THE INDIAN CITY OF PUNE



Asia is gradually becoming a magnet for the global economy and India is playing a significant role in this process. One example here is the city of Pune. This town, situated in the state of Maharashtra, is turning into a vibrant business location and is already one of the wealthiest and most prosperous cities in India. The automobile industry forms the city's industrial base. Furthermore, Pune is considered to be the "Oxford of Asia" as it is home to a huge university and hundreds of colleges. One year ago, Volkswagen officially opened a new plant here.

REMONDIS has succeeded in standardizing processes, pooling transport and ensuring the established logistics system at VW is used in the best possible way.

Volkswagen has invested around 580 million euros in the site making it the largest ever investment project carried out by a German company in India to date. Being the only production plant of a German car manufacturer in India, it covers the whole of the production chain – from stamping facilities to body construction and paint shop to the final assembly.

The VW plant in Pune, which employs 2,500 employees, can manufacture up to 110,000 vehicles a year for the Indian market. Two models are currently being made in Pune: on the one hand the compact car Škoda Fabia and on the other a hatchback version of the Polo which has been especially developed for the Indian market. Subjects such as environmental protection and sustainability play an important role in the manufacturing



process. May 2009 not only heralded the beginning of the production activities and, for the most part, the completion of the infrastructure at the Pune site but also the switching on of the facilities important for the environment such as the wastewater treatment plant, the collection point for old parts as well as the decentralized wastewater treatment facility in the paint shop. This ensures that the values are well below the maximum legal limits. The processed water approximately reaches the legal limits required for irrigation water for green areas.

The wastewater treatment facility in the paint shop has been operated by REMONDIS Aqua India since 2006. REMONDIS' management team in India was able to chalk up another success winning a further contract to manage the in-house waste logistics and the sorting of waste on the site.



“REMONDIS is becoming a genuine full service provider in India. Waste management has now been added to the area of wastewater at VW.”

Milind Kothari, management member at REMONDIS Aqua India

REMONDIS has been carrying out these additional tasks since December 2010 collecting and disposing of production waste at VW. REMONDIS operates a collection point at the plant for residual materials. All the waste is first brought together within the plant by the employees and then immediately prepared for transport off the site. As a result, they have succeeded in standardizing processes, pooling transport and ensuring the established logistics system is used in the best possible way. REMONDIS uses different kinds of vehicles to cover all different areas of waste management. The types of waste range all the way

from recyclables to hazardous waste. All waste recycling and disposal processes are monitored, analysed and evaluated on an ongoing basis. VW also expects particularly high standards when it comes to the collection of the waste. REMONDIS' task is to empty the individual containers and prepare the materials for transport. This means that the employees have to use fork-lift trucks and small vehicles in various areas of the plant. With its effective quality management system, REMONDIS guarantees that high levels of production quality and production safety are achieved at all times.

By concluding a waste management agreement with VW, REMONDIS is becoming a full service provider in India, too.

LANXESS also relies on REMONDIS Aqua in India

Since 01 April 2011, REMONDIS Aqua's Indian branch has been responsible for putting a three-stage biological wastewater treatment facility into operation and running it on a long-term basis for the international chemicals company, LANXESS.

LANXESS' new chemicals plant in Jhagadia in the state of Gujarat was only just recently put into operation. To begin with, LANXESS is producing ion exchange resins but it is planning to extend its production activities to include other high quality chemical products, too. The site is located in a newly developed industrial estate in Gujarat, India's most successful state as far as business is concerned. Following VW in Pune, LANXESS is a further well-known German customer for REMONDIS Aqua India helping it to further extend its market presence.



Evolution rather than revolution

TSR IS PUSHING FORWARD ITS STRATEGIC GROWTH AND CEMENTING ITS IMPORTANCE AS A GLOBAL TRADING PARTNER



Recycling scrap metal is more than simply an act to protect the environment. The recycling of old metal is growing in importance all around the world as raw materials become ever more scarce. Scrap steel and metals are collected, sorted, processed and then returned to production cycles. The TSR Group is one of the leading companies on the European market for recycling scrap steel and non-ferrous metals thanks to its bespoke services in the area of collecting and processing metal waste. With over 130 branches and just under 2,000 employees across Europe, REMONDIS' subsidiary handles more than seven million tonnes of scrap metal each year. TSR is, therefore, an important supplier for the metal industry as well as an intermediary between suppliers and customers.

The following figures prove that scrap metal recycling helps to actively protect both the environment and natural resources: using secondary raw materials from TSR to produce steel saves approx. 10.5 million tonnes of iron ore, 4.5 million tonnes of coal and 2 million tonnes of limestone, considerably easing the burden on the manufacturing industry as well as protecting the environment and helping to prevent climate change. Whilst the world economy continues to grow analogous to population growth, the demand for raw

materials is increasing all the time. By tradition, steel and metal are of particular importance as there is hardly a modern product around that does not contain them. Whether it be in the field of construction, mobility or in IT and consumer electronics – progress cannot be made without metals. It is, therefore, only logical that TSR is pushing forward its strategic growth both at home and abroad in order to further strengthen its position on the European market.



TSR has expanded in Germany with the addition of a number of locations, including a branch in Hennigsdorf, a branch in Bad Laasphe and RuP Rohstoffhandels-gesellschaft, a company based in Düsseldorf. By opening up further branches, it is now possible to bundle together material flows even more efficiently than before. With the best possible technology at its disposal, TSR supplies the relevant sectors of industry in the respective regions with valuable secondary raw materials. TSR now also has a mobile hall at its new site in Düsseldorf which can be loaded and unloaded directly from the waterway. Furthermore, TSR's new training centre is also to be set up here which will be responsible for holding in-house courses, workshops and other training measures.

In order to strengthen its position in the Central European market, TSR has founded a joint venture in Poland together with the Karlsruhe-based Cronimet Group. TSR owns 60 % of the shares in the new company and Cronimet 40 %.

TSR in Scandinavia, the UK and Slovakia

Back in September 2010, TSR took over the company RSH Schweden AB. TSR Sweden is a business location that is traditionally oriented towards ferrous metal. The non-ferrous metals business will now be further extended as a result of

this takeover. One particular feature here is its access to a deep sea harbour which means that large volumes can be loaded and sent directly by ship to other locations with port facilities. TSR has founded a trading company in Denmark in order to intensify its work on the Scandinavian market.

Besides strategically developing its network of business locations, TSR is also looking to extend its portfolio of industrial services. By founding the company, Steelage, TSR has taken a big step towards becoming a full service provider on the Slovakian market. Based on a long-term agreement, the steelworks service covers a full range of services for its customer, SSM Slovakian Steel Mills. In Great Britain, TSR is active in the automotive branch and, having founded a new trading and service company, has now established itself as a partner for full disposal solutions by setting up and operating package presses in its own production facilities.

Each of these steps represents the corporate evolution of TSR as an international trading partner, whose importance in the areas of collecting, recycling and supplying valuable metal raw materials is continuously growing. The increasing demand of the world's growing population for raw materials also means excellent future prospects for TSR.

Global demand for raw materials is increasing. This is particularly true for steel and other metals.



Whether it be in the field of construction, mobility or in IT and consumer electronics – progress cannot be made without metals.

Environmental services

ProTerra provides clean construction land

COMPLEX REMEDIATION PROJECTS IN THE GERMAN STATES OF SCHLESWIG-HOLSTEIN AND NORTH RHINE-WESTPHALIA

REMEX 

REMONDIS ProTerra GmbH specializes in redeveloping contaminated areas and disposing of contaminated mineral waste. As general contractor, ProTerra carries out all individual services involved in such a project from drawing up a concept to doing the construction work, from collecting and transporting the materials to carrying out all documentation work. Each year, it transports over 600,000 tonnes of material. These remediation experts have once again been able to demonstrate how to gain ground in two major projects.

ProTerra is a company belonging to the REMEX Group.

Once the remediation work has been completed in Olpe, this inner city land will also be handed over so that it can be marketed for building homes.

In Geesthacht, in the German state of Schleswig-Holstein, REMONDIS ProTerra GmbH removed a good 20,000 tonnes of grinding sludge containing oil from the metal industry. Originally, the plan had been to treat the grinding sludge in an innovative, grant-supported pilot facility in Geesthacht by removing the oil through sintering and then returning the raw material to the metal industry. Fires, however, broke out more than a dozen times at the recycling plant due to spontaneous combustion of the sludge. The project failed and the plant declared itself insolvent in 2001. What remained were 4 storage halls holding approx. 20,000 tonnes

of grinding sludge containing oil stacked in piles up to 6 metres high.

In view of the state of the ground, Ernst-Wilhelm Rabiuss, State Secretary at the Ministry of the Environment in Kiel, commented: "This is one of the most complex remediation projects that the state has ever had to tackle." The overall cost of the remediation measures was estimated to be around 3.36 million euros. The land affected was approximately 15,000m² and situated in one of the best positions on the banks of the River Elbe. The land had been incorporated in the city's "harbour city" building project with the aim of transforming it into a highly desirable residential area with 425 homes. REMONDIS ProTerra's remediation specialists took part in the Europe-wide tender process beating 30 competitors with their concept to remove the metal shavings containing oil.

The fire hazard caused by the grinding sludge meant that the experts were facing a particularly difficult challenge: the risk of further spontaneous combustions had to be eliminated by constantly monitoring the temperature. The



The planned use for this area, namely to create an attractive residential area on this prime location in Olpe, is now free to go ahead.



whole of the construction procedure had to be carried out in accordance with the strictest of regulatory requirements and with intense public observation. On behalf of and under the management of REMONDIS ProTerra, the material was sorted on site in a protected "black area" and then, to protect the local inhabitants and environment, transported in closed lorries to TerraCon's treatment plant in Hamburg for further processing. The final disposal of the approx. 20,000 tonnes of waste was carried out in suitable landfills and in one of REMONDIS' incineration plants. The REMONDIS Group's laboratory group carried out analytical work throughout the whole of the project. Moreover, REMONDIS Industrie Service's Lübeck branch was involved in the disposal of the chemicals.

Once the halls had been cleared, they were able to be pulled down and the contaminated earth removed. The area has now been removed from the land register for contaminated ground and is now sought-after construction land. Thus, State Secretary, Ernst-Wilhelm Rabius, was able to come to the positive conclusion: "The revitalization of the land is a good example of how commercial and residential areas can be built on inner city land that has already been used, thus helping to protect our green belt areas."

Dismantling and cleaning up a galvanization site in Olpe

In Olpe, in the Sauerland region, REMONDIS ProTerra cleaned up the site that was once home to the galvanization plant, Galvanik Greitemann. Once the remediation work has been completed, this inner city land will also be handed over so that it can be marketed for building homes.

A small galvanization plant was set up between some residential areas in 1958. Incorrect handling of the working materials and loss through operations led to the contamination of the building's foundations and the ground beneath. The area had remained unused since the plant closed down in 1997. The land, which covers an area of 1,700m², was not allowed to be used because of the contamination. The ground was cleaned up with the support of the Atlas-

tensanierungs- und Altlastenaufbereitungsverbandes NRW (AAV/Association for Remediation Services for the state of North Rhine-Westphalia). REMONDIS ProTerra acted as general contractor for the project.

Once the production building had been dismantled, the contaminated soil was excavated and disposed of together with the contaminated demolition waste. An unknown, approx. 42,000 litre underground tank was discovered during the excavation work. Once its contents had been removed, it was shut down, removed from the ground, transported and then disposed of properly. After this work had been completed, the excavated area was then filled with geogenic earth material. The planned use for this area, namely to create an attractive residential area on this prime location in Olpe, is now free to go ahead. Once again, REMONDIS ProTerra was able to beat 8 competitors in a public tender process thanks to its extensive experience gained from other similar remediation projects. The structured and cost-efficient manner in which it carried out its services meant that, here too, the customer was able to save both time and money.

The cleaned-up area in Geesthacht has now been removed from the land register for contaminated ground and is now sought-after construction land.

"This is one of the most complex remediation projects that the state has ever had to tackle."

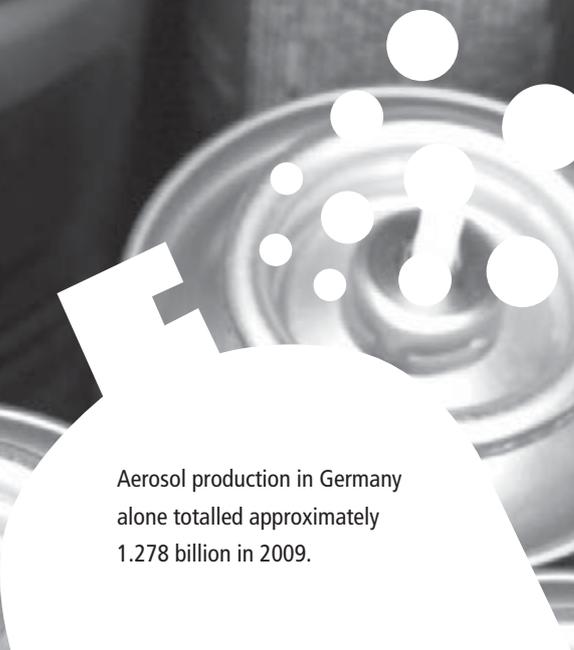
Ernst-Wilhelm Rabius, State Secretary at the Ministry of the Environment in Kiel

During this project, too, ProTerra worked together with other companies from the REMONDIS Group. This support, often provided at short notice, is of great importance to ensure that the work carried out at the construction site is a success. Together with its parent company, REMEX Mineralstoff GmbH, ProTerra collected and disposed of several thousand tonnes of contaminated earth and construction waste. REMEX specializes in moving and processing large volumes of mineral materials. REMONDIS Olpe took over the task of collecting all construction site waste resulting from the dismantling of the building. REMONDIS Industrie Service in Herne and Siegen also helped at short notice providing special containers and treatment procedures for the waste containing oil.

Environmental services

Good news for "sprayers"

REMONDIS INDUSTRIE SERVICE SCORES WITH ITS NEW "RESPRAY" COLLECTION SYSTEM FOR AEROSOLS



Aerosol production in Germany
alone totalled approximately
1.278 billion in 2009.

“REMONDIS Industrie Service guarantees maximum possible levels of materials recycling and, together with its customers, helps to protect the climate and environment.” Christian Deing, head of the aerosol recycling division

Aerosols come in different sizes ranging from 50ml to 1,000ml and have become an indispensable part of our daily life. Next year, the aerosol is celebrating its 85th anniversary. Who would have thought all those years ago that the aerosol can would enjoy such resounding success all over the world? However, the ongoing success enjoyed by aerosols and their ever increasing range of uses at home, in industry and in the medical field has also increased the demand for suitable recycling solutions. Aerosols are made of metal or aluminium and the aim should be, therefore, to return these materials to the production cycle.

The contents of aerosols are made up of the relevant substance and the so-called propellant. Possible propellants include propane, butane or dimethyl ether and have been used since a regulation was passed to reduce the use of chlorofluorocarbons (CFCs). This beneficial improvement also brings with it an increased risk, however, as some of the new propellants can be extremely or highly inflammable and have harmful properties. While empty, pressure-free aerosols can be recycled, aerosols that are not completely empty or are defective must be disposed of as hazardous waste irrespective of whether or not they have been labelled with a “dual system” recycling symbol.

Private households can dispose of aerosols at designated hazardous waste collection points, while commercial businesses can use the know-how of REMONDIS Industrie Service and its nationwide “RESPRAY” collection system. A standardised container system helps keep companies on the safe side in matters relating to the “Gefahrgutrecht” (German hazardous goods law). One of the main advantages of the “RESPRAY” system is that the materials are collected and recycled by the same company. Having been provided with the relevant containers by REMONDIS, the customers then request REMONDIS to collect the containers when they are full or arrange a regular collection time. Following the motto: “If the aerosols won’t come to us, then we will go to the aerosols.”

By doing this, REMONDIS guarantees maximum possible levels of materials recycling and, together with its customers, helps to protect the climate and environment as harmful emissions are prevented from entering the atmosphere. REMONDIS Industrie Service operates two treatment plants in Bramsche (Lower Saxony) and Krautheim (Baden-Württemberg) where these materials can be processed. Longstanding contracts are also in place with other thermal treatment plants to ensure the materials can be processed even at peak times. With these recycling facilities and its 40 branches and associated companies, REMONDIS Industrie Service is able to recycle aerosols across the country and ensure the materials are taken to the most suitable plant. This nationwide aerosol recycling system is not limited to Germany alone. Quantities are also imported from neighbouring European countries for recycling. An aerosol acquisition/recycling division was founded especially to meet this pan-European challenge and it is responsible for coordinating the company’s activities on the international markets. As aerosol production in Germany alone totalled approximately 1.278 billion in 2009, REMONDIS Industrie Service will certainly have its work cut out for it in the future.

 **RESPRAY**

Aerosols that are not completely empty or are defective must be disposed of as hazardous waste.

Russia

Start of a new era

REMONDIS SUPPORTS INTERNATIONAL RECYCLING CONFERENCE IN MOSCOW



The Russian Federation has large quantities of natural resources at its disposal. The country, however, can no longer afford and is no longer willing to let the majority of its municipal and industrial waste – and all the recyclable materials contained in it – disappear into landfills. Politicians and business people have, therefore, initiated a transition process to move from traditional waste disposal towards modern recycling management.





“One of the most important political tasks for 2011 is to amend Russian legislation on the use, processing and disposal of industrial and municipal waste as well as to bring this legislation into line with European standards.”

Sergej Osadchij, stellv. Vorsitzender des Umweltausschusses der russischen Staatsduma

In light of the planned restructuring process, the first international science conference on the topic of recycling was held in Moscow in mid-April 2011. REMONDIS was the general sponsor of the initiative and the patron of the event was Russia's highest-ranking environment committee, the State Duma Committee on Natural Resources, Nature Management and Environment. The conference was attended by around 150 participants made up of State Duma representatives, federation council members, representatives from ministries, administrative bodies, regional governments and trade associations as well as Russian and foreign business people representing the economy.

Forum for international exchange of experiences

In Russia, the regions are responsible for organising waste management and they often find themselves facing major problems starting with simply the collection and transport of waste. Added to this are outdated technical plants which result in valuable raw materials such as glass, metal, plastic or waste paper ending up unused in landfills.

According to the organisers, the aim of the conference in Moscow was to create a platform for an intensive exchange of experiences. Items on the agenda included increased co-operation work between the Government and the economy to help promote the recycling sector as well as sample solutions for the efficient and sustainable use of natural resources. The correct framework conditions for establishing recycling systems were also addressed. The participants all agreed that it is essential that Russian legislation is brought in line with EU standards, and that concrete regulations must be developed to cover the handling of industrial and municipal waste.

Russia is extremely interested in new technology and equipment to implement the different levels of the waste hierarchy.

РЕЦИКЛИНГ:
ПРОБЛЕМЫ И ПЕРСПЕКТИВЫ
международная научно-практическая конференция



Forums and workshops to transfer knowledge: the participants at the Recycling Conference in Moscow discussed the opportunities for the future.

Quality up – Costs down

REMONDIS AQUA HAS BEEN CONTRIBUTING TO STABLE CHARGES IN THE CITY OF GEMÜNDEN FOR 6 YEARS

REMONDIS Aqua has been active as a service provider in the water resources management sector for the town of Gemünden am Main in Lower Franconia since 2005. This successful contract is a perfect example of cooperation work between a municipal authority and a private sector service provider. Right from the very beginning, the work carried out has resulted in significant savings for the local authority. Taxpayers and consumers are the real winners as they not only benefit from maximum efficiency and high quality wastewater management but their wastewater charges have also remained at a stable level for many years now.



REMONDIS®

Gemünden is a prime example of how the public and private sectors can work together successfully in the area of water management.

In 2005, REMONDIS Aqua took part in an engineering and process competition beating several well-known competitors to win a contract to build a sewage treatment plant for the City of Gemünden. The new plant was based on an innovative concept and saved the municipal company construction costs totalling around 2.7 million euros. As a result, the supervisory board of the municipal company of the City of Gemünden also commissioned REMONDIS Aqua with the task of managing the plant during the running-in period as well as operating the plant afterwards in addition to building it. This work also includes the surrounding sew-

age network for the district with 120km of pipes as well as 25 pumping stations and 22 special structures.

REMONDIS Aqua rose to this challenge and has been operating the City of Gemünden's sewage system ever since. The number of tasks that the company carries out has grown continuously since 2005.

While, in the past, the main task was to ensure that the new treatment plant was run in accordance with the stricter legal framework conditions and to train the person-

nel provided by the City of Gemünden to use the new plant technology, the following years saw an ever increasing focus on optimising operational processes. Besides reducing investment costs as mentioned above, these efforts have also led to a significant reduction in the municipal company's process and operating costs.

Project engineer Mario Schellhardt, responsible for managing the project as plant manager for REMONDIS Aqua, explained the process as follows: "Over the past few years, we have made considerable progress as far as operations are concerned that has benefited both REMONDIS Aqua and the municipal company. Thanks to REMONDIS' central purchasing activities, many things have now been organised more easily and efficiently creating advantages that the municipal company was not able to achieve in the past. Furthermore, by working together with other sister companies, we have gained significant advantages when purchasing chemicals and consumables as well as disposing of sewage sludge. We believe this type of model would also benefit other local authorities where changes in legal framework conditions demand new technology which lies beyond the know-how of the existing personnel."

Besides being responsible for normal plant operations, the management team has also had to face some unusual challenges in the River Main's drainage area. An example of this is the 2010/2011 winter season with its heavy snowfalls and low temperatures. Mario Schellhardt said: "The long winter followed directly by a rapid thaw, coupled with heavy rainfall in the River Main's drainage area, resulted in 14 days of severe flooding in January. Although the sewage treatment plant itself is protected against flooding and was easily able to cope with this difficult situation, there were major problems in the upstream sewer networks and local drainage systems. The work carried out between REMONDIS Aqua and the municipal company continued to be a success even in these difficult conditions." Over the last few years, a basis has been drawn up using the network information system and this, in particular, enabled rapid localisation and immediate intervention where pumping stations needed to be deactivated or connecting sewage passages created. The cooperation work ran as smooth as clockwork as REMONDIS was directly involved in the crisis management team working to combat the flood.

Over the past few years, REMONDIS Aqua has been able to expand its site in Gemünden and its water management activities carried out from there. It has, therefore, created synergies with another REMONDIS associated company, namely WRG GmbH (Wertstoffrecyclinggesellschaft Würz-



burg GmbH), a joint venture between the Würzburg public utilities company and REMONDIS Kommunale Dienste Süd GmbH, South Region. The goal for the future will be to further bundle marketing activities in the field of water management and expand even more in the Lower Franconia region. In addition to the actual plant management, a range of additional activities are also carried out for and with the Gemünden municipal company. For the past three years, for example, sewage from the neighbouring City of Rieneck has also been sent to the new treatment plant which has the required treatment capacities. As a result, Rieneck was able to decommission the old trickling filter treatment plant and, thanks to REMONDIS Aqua, can also guarantee a secured cleaning operation which complies with the legal requirements. A number of companies from the Lower Franconia region have also turned to the Gemünden treatment plant to dispose of soil sewage and wastewater from composting and waste disposal plants, which can also be treated at the plant.

All in all, both parties view the prospect of working together in the future optimistically. Michael Figge, head of municipal marketing at REMONDIS Aqua, sees positive signals for further cooperation work: "Our cooperation work with the Gemünden municipal company has developed extremely well, even viewed under objective assessment criteria. Looking at the municipal benchmark for Bavarian sewage treatment plants, we have proven our ability to deliver compared with our competitors. The municipal company's operations lies in the top third of the list of participants in all assessment criteria, proving that we have an efficient and profitable operation."

The water management sector in Gemünden now has cutting edge standards thanks to the considerable sums of money invested in new facilities.

The good cooperation work between REMONDIS Aqua and the City of Gemünden demonstrates a practical way of moving forward for other local authorities, too.

Interview

The private and public sectors are stronger together!

Hans Schneider, board member and head of the Gemünden municipal company, talked to REMONDIS aktuell about the quality and reliability of the cooperation work between the municipal and private partners.



Hans Schneider believes that the cooperation work between the private and public sector companies is a model for the future.

REMONDIS aktuell: The co-operation work between the Gemünden municipal company and REMONDIS Aqua began six years ago with the construction of the Gemünden sewage treatment plant. What conclusions would you draw after 6 years of operational management?

H. Schneider: After some initial fluctuation among personnel in the operational management department, we have had a longstanding technical manager in place since 01 January 2009 in the form of Mr Schellhardt who stands out thanks to his reliability and expertise.

REMONDIS aktuell: How has your company benefited from the cooperation work with REMONDIS?

H. Schneider: First and foremost, the cooperation relieves some of the pressure on the technical and drainage management teams at the municipal company. Thanks to REMONDIS Aqua and its expert help with tenders and the awarding of contracts, we have made significant cost savings through Central Credit Committee investment management. We have also been able to modernise our company with the help of our private partner, e.g. creating digital data material by introducing a GIS and assessing the state of the sewage network using KOSIS.

REMONDIS aktuell: What has improved and what has changed since REMONDIS took over the operation of the plant?

H. Schneider: Reliability has been increased through the introduction of standby duty. Accessing inventory data on

sewage and water pipes is also much more efficient and quicker. Our actual operating costs can be calculated more precisely thanks to clear contractual regulations.

REMONDIS aktuell: How do the locals view this cooperation work with a private partner? Particularly as "renationalization" is such a hot topic at the moment?

H. Schneider: Renationalization is not an issue in Gemünden in this particular field of wastewater treatment. After some initial scepticism towards REMONDIS, the locals have got used to the idea. REMONDIS is almost viewed as part of the public utilities company.

REMONDIS aktuell: In your experience, can the cooperation work between the Gemünden am Main public utilities company and REMONDIS be regarded as a positive example of the public and private sectors working together?

H. Schneider: I think the cooperation can definitely be regarded as a positive example of public and private companies working together. REMONDIS provides expertise, experience and knowledge.

REMONDIS aktuell: What would you like to see happen in the future as far as the cooperation work with REMONDIS is concerned? What can be done differently, what can be improved?

H. Schneider: Everything is working really well, so things can stay the way they are in the future.

REMONDIS aktuell: Mr Schneider, thank you for your time.



Sustainability on the smallest of spaces

REMONDIS ESTABLISHES MODERN WATER RESOURCES MANAGEMENT IN POLISH DISTRICTS

The successful public-private partnership model is also proving its worth in the rural regions of Poland. With a fully automated waterworks in the Polish District of Drobin, REMONDIS guarantees ecologically and economically sustainable water resources management – the start of a comprehensive renewal.



Partnerships between public suppliers and REMONDIS have long been established as a guarantee for modern water resources management and environmental services in Poland's major cities such as Warsaw, Szczecin and Gliwice. But REMONDIS is also pushing forward the development of modern infrastructures in rural regions. In the past, a permanent high-quality drinking water supply was more a luxury than matter of course in Drobin. Now, this small town benefits from intelligent water resources management.

Kick-start for sustainable progress

Since October 2010, 50 cubic metres of drinking water have been leaving the new waterworks every hour in Drobin, a town located 100 kilometres north west of Warsaw. The technology was renewed in the five months running up to this date: thus the public-private partnership company, REMONDIS DROBIN Komunalna, installed a compact treatment container complete with a backwash water tank, power set and electrical installations. The result: an efficient regional waterworks on the smallest of spaces, which has also been completely modernised on the outside.

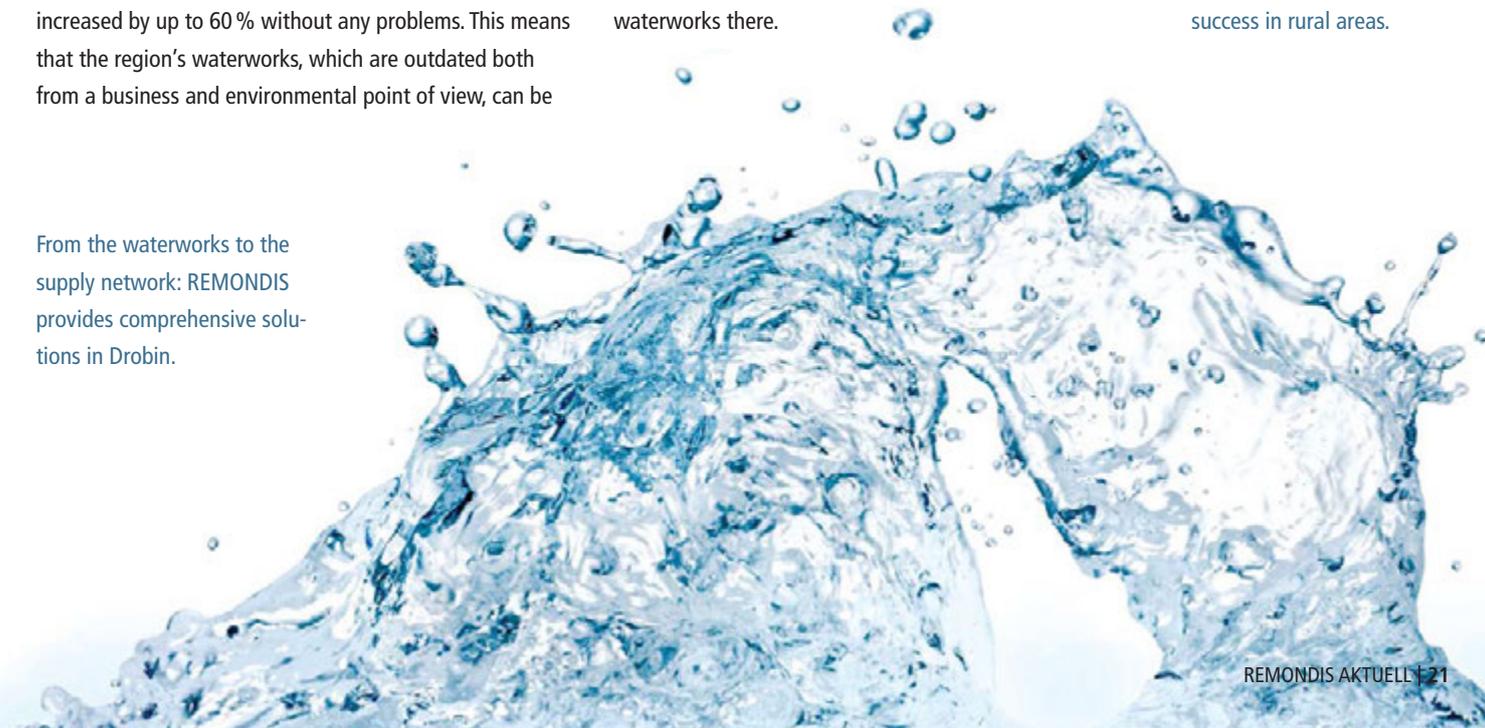


Right from the start of the planning process, REMONDIS Drobin also took future requirements into account: the drinking water capacity of the new waterworks can be increased by up to 60 % without any problems. This means that the region's waterworks, which are outdated both from a business and environmental point of view, can be

decommissioned – and is also helping to kick-start further progress: thanks to REMONDIS, work will start in August in the neighbouring village of Karsy to radically modernize the waterworks there.

Maximum efficiency: fully automated water supply processes are also proving to be a success in rural areas.

From the waterworks to the supply network: REMONDIS provides comprehensive solutions in Drobin.



Environmental services

In tandem for sustainability

REMONDIS PROMOTES INDUSTRIAL ENVIRONMENTAL SERVICES IN CHINA



REMONDIS has been involved in the Chinese market for seven years. The company is now stepping up the pace with a number of joint ventures. In collaboration with some powerful partners, REMONDIS Industrie Service is breaking new ground in China by setting up an industrial environmental services operation – and introducing its cutting-edge technology to numerous regions across the country.

REMONDIS®

Industry accounts for about 50 % of China's economic output. This gives some idea of the size of the ecological challenges.

For a long time in China, there was only ever one winner in the race between the environment and the economy: whilst China continually increased its economic output by around 10 % a year and GDP per capita multiplied, ecological sustainability lagged way behind. This makes the challenges facing REMONDIS even greater as it increases its involvement in this up-and-coming country. Activities in the "Middle Kingdom" are initially focusing on the sustainable handling of industrial hazardous waste – with emphasis being put on maximising recycling levels.

Responsibility right to the end of the supply chain
Access to the Chinese market depends on establishing

joint ventures with domestic companies. With this in mind, REMONDIS entered into a partnership with FAW Recycling, a subsidiary of the car manufacturer FAW, at the start of the year. The new joint venture is already pushing ahead with the building of modern recycling plants for hazardous waste in the city of Changchun in the north east of the country. The second phase will involve the construction of a complete recycling infrastructure for the production facilities of FAW's partners, Volkswagen, Audi and Toyota.

There are also plans to build modern hazardous waste sites around 2,000 kilometres to the west. As part of this project, REMONDIS has acquired another powerful partner, namely the Zhongtian Environmental Group, which has years of experience in dealing with hazardous waste and industrial residual products. The expertise of the Selm-based family company will also lead to future synergies to provide consultancy services for local waste management companies.

53 % of the Chinese population now lives in urban agglomerations. These are the very areas where sustainable environmental solutions need to be found.



Left: Participants at the official launch of the joint venture in Changchun in the north east of China.

Right: Georg Rethmann underlines the advantages of working together with REMONDIS and thanks the Chinese partners for putting their trust in the company.

Further joint ventures in the pipeline

REMONDIS' commitment to modern industrial environmental services is spreading out in all directions across the world's most populous country. There are imminent plans to develop another hazardous waste site in the southern city of Changsha as part of a collaborative project with the state-owned China Energy Conservation and Environmental Protection Group (CECEP). Once again, REMONDIS' reputation for innovation in developing state-of-the-art treatment plants and processes for industrial residual products helped clinch the partnership deal. Further joint ventures for operating hazardous waste plants in China's largest chemicals park in Shanghai are set to complete the portfolio.

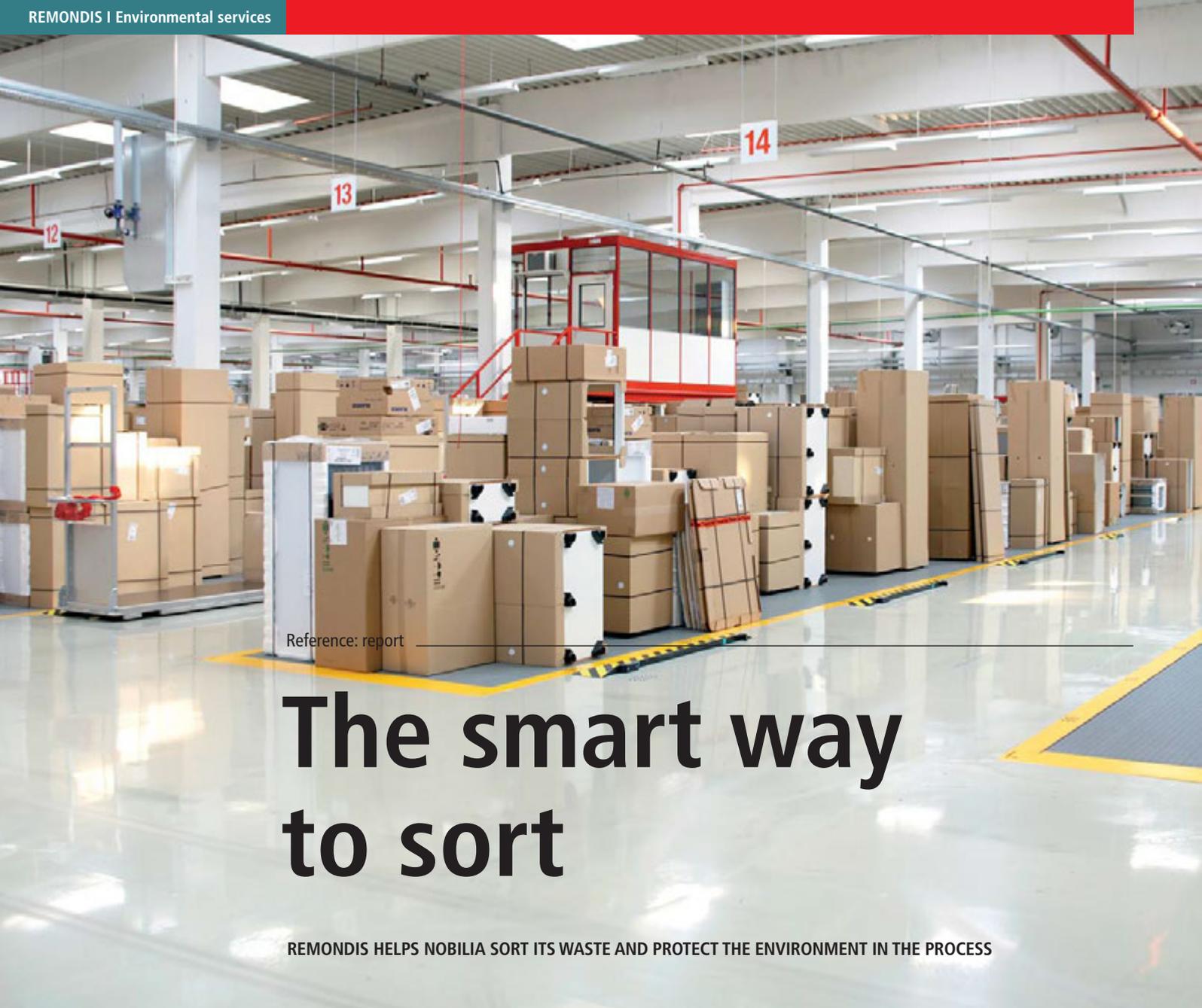
REMONDIS has been active in Shanghai since 2004 running a distribution company for plastics made from recycled materials. As well as further expanding the import of plastics, REMONDIS' sites in China will also further increase their market share for secondary raw materials.

As such, future supply chains in China should see increased emphasis on ecological and economic sustainability right from the very outset.

Setting a good example: Chinese environmental experts regularly visit REMONDIS' sites in Germany, such as the Lippe Plant in Lünen.

Background

The signing of the Kyoto Protocol and the introduction of new environmental standards for companies heralded something of a rethink in China at the end of the 90s. German environmental technology is playing a key role in this ecological "catch-up" exercise. Although German-Chinese cooperation work in the areas of climate, environmental and resource protection has long been primarily associated with development aid from the state, company initiatives are now driving the process forwards. Within this context, REMONDIS is placing emphasis on sustainability, particularly when it comes to recycling industrial hazardous waste.



Reference: report

The smart way to sort

REMONDIS HELPS NOBILIA SORT ITS WASTE AND PROTECT THE ENVIRONMENT IN THE PROCESS

nobilia[®]

nobilia's success is built upon German quality, perfect execution, bespoke customer care, and great value for money. With sales in excess of 783 million euros and around 2,150 employees, nobilia is Germany's biggest manufacturer of fitted kitchens. The two plants in the town of Verl (located in the eastern part of North-Rhine Westphalia) are amongst Europe's most modern and highest performing sites involved in the manufacturing of kitchen furniture. Almost one third of all kitchens sold in Germany are made by nobilia. Their export ratio is 37%. For nobilia, "quality" also means having a great environmental record. By working together with REMONDIS, the company has now further optimized its waste management processes.

nobilia's environmental record is steadily improving. Having said this, until fairly recently, around a third of all its waste used to end up in the residual waste bin. This equated to more than 500 tonnes in 2009 alone. Germany's biggest manufacturer of made-to-measure kitchens really wanted to change this unsatisfactory state of affairs. REMONDIS, with its comprehensive disposal and recycling solutions, turned out to be the expert partner nobilia was looking for. Close collaboration saw the development and successful

implementation of a new waste management concept. At first sight, there may appear to be nothing particularly special about sorting waste. Indeed, nobilia was already used to collecting and sorting plastic film, cardboard and metal. The aim, however, of the new waste management concept developed by REMONDIS and nobilia was to further reduce the volumes of residual waste and to ensure that as many other fractions as possible were recycled efficiently and in an environmentally friendly way.



Before REMONDIS got involved, ten different waste management companies used to take care of the waste in a rather uncoordinated manner. This almost impossibly complicated system is now a thing of the past. Employees can appreciate the improvements made immediately thanks to the comprehensive colour coding system, whereby all the containers have been relabelled and marked with the appropriate colour for the particular material concerned. This arrangement means waste can be quickly assigned to the relevant container without the need for a time-consuming identification process. A real novelty introduced across all departments is the "light fraction" container, which is indicated by its signal red colour. This works like the yellow bag system in German households and is used to collect such materials as foam, soiled film, labels, Tetra Pak packaging and plastic parts. By contrast, paper, cardboard, polyethylene film, wooden waste and hazardous waste are collected in separate colour-coded containers.

REMONDIS has also made one of its employees available to nobilia, who is responsible, amongst other things, for transporting waste material to the containers outside and answering any sorting-related questions nobilia employees may have. Further information on how to implement the system is provided via regular team meetings and in the

form of information sheets and notices. The aim for 2011 is to recycle 95 % of waste. Thanks to REMONDIS, the two nobilia plants are well on the way to achieving this ambitious target as part of the drive to further improve the company's own environmental record.

Facts & Figures:

Company founded:	1945
Turnover:	€ 783m (2010)
Export ratio:	37 %
Exports:	to 66 countries worldwide
Trade customers:	more than 5,000 customers worldwide
Employees:	2,150
Production:	2 production facilities in Verl, Germany
Production area:	203,000m ² in total of which: 110,000m ² is in Plant I, Verl-Sürenheide of which: 93,000m ² is in Plant II, Verl-Kaunitz
Key production figures:	485,000 kitchens per year 2,200 kitchens per day 22,200 units per day 5,000 electrical appliances per day

Recycling of electrical equipment

A treasure hunt inside your mobile

ENVIRONMENTAL SERVICES VERSUS RAW MATERIAL SHORTAGES

REMONDIS®

What should you do with your old mobile phone? When a person buys a new mobile phone, they often leave their old one to languish in a drawer or cupboard or even throw it into the bin. This means valuable raw materials go unused, since our little communication helpers conceal real treasures. These are well worth salvaging – through a consistent approach to recycling.



95% of metal raw materials can be recovered from high-tech electrical devices.

A single mobile phone can contain over 30 different metals, including precious and rare metals from the rare earth group. There may only be very small amounts of copper, gold, silver, platinum and tantalum in each device, but put together these really add up.

Great potential for materials recycling

In Germany alone, there are 60 million unused mobile phones lying around in people's homes. A further 20 million mobiles are scrapped every year. If all these were to be recycled, the metals recovered would, in some cases, cover much of Germany's annual needs.

There are lots of arguments for recycling more mobile phones. One key argument is that several components of high-tech products could become scarce in the near future.

It has been estimated, for example, that natural reserves of gold will have been exhausted in around 19 years' time. Copper reserves are expected to run out in the next three decades. Similarly, the rare element tantalum has a static lifetime of less than 100 years. In view of this, it is more important than ever to handle valuable raw materials responsibly and to recover them and return them to the economic cycle.

Uncertainty means too few phones are being handed back

Mobiles need, however, to be handed back before they can be used as a source of raw materials. And this is where the problem lies. It is thought that just 1% of all old devices are handed in for recycling. There are many possible reasons for this reluctance. Some mobile phone owners, for example, are worried their personal data will end up in the wrong hands. Or they may have come across reports in the media stating that large numbers of old devices are being exported to threshold countries where they often end up in illegal dumps after they have been used. They then pollute the countryside with toxic materials as mobile phones, like all electrical devices, contain hazardous as well as recyclable materials. Rechargeable batteries, for example, contain chemical elements like cadmium, lead, and mercury. This makes them potentially hazardous to both the environment and people's health.



Mobile phone recycling is all about trust

REMONDIS applies the highest possible security standards to its recycling operation for mobile phones and other devices. This also means that people can be sure that data protection laws are fully complied with. The company group has many years of experience in this area. REMONDIS has been running processing plants for electrical and electronic devices for over 20 years now – both for removing hazardous substances and for recycling.

In addition to its processing activities, REMONDIS also uses a special recycling system to collect any mobile phones that are no longer being used. To this end, mobile phone col-

“Recycling is the most important domestic source of raw materials.” Germany’s Federal Minister of Economics, Rainer Brüderle

lection boxes have been placed in electrical stores, public buildings and in council offices where people can throw away their old phones. Backed by the slogan “Bei Einwurf Recycling” (throw in to recycle), the system ensures phones are disposed of properly and recycled in a way that is kind to the environment. Everything is done with the highest possible levels of security – also concerning the sensitive data. The mobile phone collection box is not only for mobiles but also for old digital cameras, MP3 players, portable games consoles, chargers and external storage media.

Environmental services

The fire service that follows the fire service

REMONDIS' SUBSIDIARY, SFI HAVARIEMANAGEMENT, FIGHTS ENVIRONMENTAL DAMAGE

Accidents can't always be avoided. When they do occur, it is important to keep the consequences down to a minimum. The fire brigade is an excellent first-aider, but when damage has been caused by substances which are hazardous to the environment, some additional professional support is often required. This is the important service that a team of specialists from SFI Havariemanagement has been providing within the REMONDIS Group since 2010.

REMONDIS®

The last Friday in January is a day one tanker driver won't forget in a hurry. That afternoon, his tanker jack-knifed on an icy road causing the tank to fall on its side and the cab's bumper to puncture the tank. 9,000 litres of heating oil poured into the meadow beside the road. When the fire brigade arrived, they were met by the sight of a sea of red oil instead of a green field. However, by the time the driver had been pulled from his cab virtually unscathed, the red

activities assessing damage and preserving evidence as well as negotiating with the environment authorities," explained Dr Hans-Jörg Täglichs. He is the technical director and has worked for the Group for many years in the area of disposing of contaminated soils at REMONDIS Pro Terra. "Along with road accidents, we regularly help at industrial accidents, overfills and other major incidents." Furthermore, his department is in contact with a large number of companies, insurers and affected parties. On many occasions, swift early intervention has served to significantly reduce the follow-up costs for everyone involved. "In some cases we are the fire service that follows the fire service," adds Dr Täglichs.



In the event of damage, SFI Havariemanagement 24/7 is available 24 hours a day, seven days a week to help registered clients. The damage hotline ensures that a skilled employee can be on site anywhere in Germany within four to six hours to assess the damage so that the important first steps can be taken to limit the damage. Projects are completed with the inspection of all bills incurred and the closing documentation, ensuring that no further action is needed. In the past ten years, the experts at Havariemanagement have completed between 50 and 100 cases a year, including some in neighbouring countries. The services provided by REMONDIS' subsidiary SFI bring numerous advantages for customers, who benefit from their cost-saving potential and the efficient processing of claims. And of course, a policy of active claim management boosts the satisfaction levels of the people affected by the incident.

sea had disappeared – the oil had already seeped into the ground. Swift action was now called for: an emergency call was made to SFI Havariemanagement 24/7 GmbH and damage-limitation measures were immediately put into place. A geologist rushed to the site of the accident and at the same time, a digger and the first REMONDIS collection vehicles arrived on the scene. Within just a few hours, the highly contaminated soil had been excavated preventing the nearby river from becoming polluted. "We're not just on site as advisers; we also manage the waste disposal

In the event of damage, SFI Havariemanagement 24/7 is there to help – 24 hours a day, seven days a week.

The riddle of the missing packaging

DWINDLING VOLUMES IN THE DUAL SYSTEMS HAVE NOW BECOME A POLITICAL ISSUE

For years, reported quantities of licensed packaging material have been falling, whereas the actual amounts collected by waste management companies have remained more or less the same. Quantities which have to be collected and recycled without anyone paying for them. The FDP (Free Democratic Party) in North Rhine-Westphalia recently put a motion to the state's red-green coalition government, asking for a response on how the Packaging Ordinance was being upheld. FDP member of the state parliament, Kai Abruszat, was referring to reports about the problems in the dual system caused by unlicensed packaging and the unfair competition that this entailed. Back in November 2010, EKO-Punkt had already filed a legal complaint prompted by a strong suspicion that quantities were being fiddled.

 EKO-PUNKT®



Among other things, the FDP MP wanted to know whether "dual systems" and their partners were operating in breach of regulations and how the state government was using the opportunity

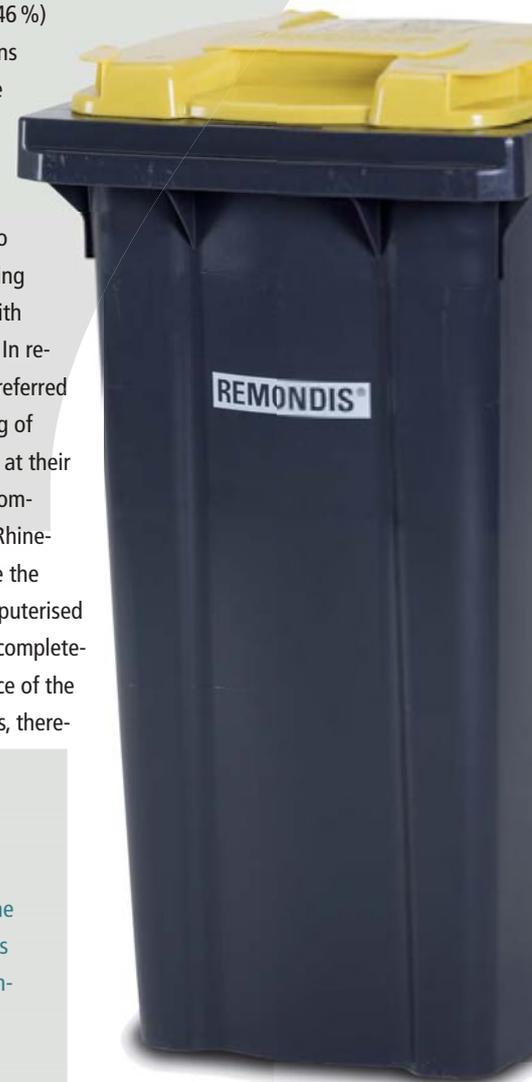
to adjust quantities in the register of the Association of German Chambers of Industry and Commerce. Another important point requiring clarification was the question of enforcement. Will there be any sanctions against companies which have acted in breach of the Packaging Ordinance?

After all, one third of all packaging – i.e. around two million tonnes – has not been registered for recycling through the dual systems. In a press release, the environmental group, Deutsche Umwelthilfe, voiced concerns about the "disastrous consequences for the conservation of the environment and resources", which were being "tacitly accepted by the enforcement agencies in most federal states."

According to estimates made by the Gesellschaft für Verpackungsmarktforschung (Association for Market Research in Packaging), German households produce about 2.2 million tonnes of glass packaging, 1.7 million tonnes of paper packaging and 2 million tonnes of lightweight packaging materials every year. A comparison with the quantities of packaging registered in the dual systems for 2010 shows that around 226,000 tonnes of glass packaging (10%), 882,000 tonnes of paper packaging (51 %) and

925,000 tonnes of lightweight packaging (46 %) have obviously not been licensed. This means the situation has continued to worsen since 2009. It is high time then that politicians accepted their share of the responsibility. For, the imminent introduction of the new recycling bin is not going to mean an end to the problem. Meanwhile, EKO-Punkt is hoping that its legal complaint concerning fraud with recycling volumes will help improve things. In response to the query, the state government referred to the ongoing procedure, the post-licensing of certain dual systems which has taken place at their request, and the so-called declarations of completeness demanded by LANUV, the North Rhine-Westphalia State Environment Agency. Here the state government criticised the lack of computerised systems for reconciling the declarations of completeness with the reports given to the joint office of the dual systems. Any solution to the problem is, therefore, still a long way off.

The situation regarding the licensing of packaging has once again worsened compared with 2009.



Energy

Making the most of potential

ENERGY TURNAROUND SHIFTS THE FOCUS TO ALTERNATIVE OPTIONS



The withdrawal from nuclear energy sees Germany set on a new course. The contribution made by renewable energies to the supply mix will need to be stepped up more quickly than originally planned. This process will continue to be driven by biomass, as well as wind power and hydropower, although there is scope for less obvious sources, such as landfill gas, to play a part.

An eco-friendly marriage: REMONDIS has succeeded in combining energy-rich landfill gas with modern methods of using biogas

According to initial projected figures from Germany's Federal Ministry for the Environment, landfill gas provided 413 million kilowatt-hours of heat and 712 million kilowatt-hours of electricity during the past year. This only accounts, therefore, for a small portion of overall supply. That said, landfill gas is a cheaply available resource, which also scores well in terms of reliable power values. It is therefore well worth getting as much as possible from the options available.

Climate friendly electricity and heat generation

Landfill gas is generated as a biochemical decomposition product at landfill sites containing untreated municipal waste. This form of disposal has been outlawed in Germany since 2005. Landfill gas is still around, however, as gases continue to build up at decommissioned landfill sites for a period of 20 years or so. Since the gas contains methane, a gas which contributes to climate change, it has to be captured and removed. Energy generation offers the best solution, since this climate-damaging substance can be used instead of fossil fuels and help reduce CO₂ emissions if it is used to generate electricity and heat.



"On your marks": biogas-enriched landfill gas has been used in Freiburg since the beginning of March. From left to right: Mathias Nikolay (board member at Badenova), Dr Dieter Salomon (Lord Mayor of Freiburg), Gerda Stuchlik (Environmental Mayor of Freiburg), Norbert Rethmann (Honorary Chairman of the Supervisory Board of the Rethmann Group), and Michael Broglin (managing director of Abfallwirtschaft und Stadtreinigung Freiburg, ASF)



“The era of landfill gas is gradually drawing to a close in Germany. In worldwide terms, REMONDIS still sees a host of opportunities for using landfill gas more efficiently.”

Aloys Oechtering, head of the biomass/bioenergy division at REMONDIS

The gas can only be used as a source of energy if its methane content is around 50 %. In most cases, this minimum value can no longer be achieved at older landfill sites. However, this is no reason to leave landfill gas as an unused resource, since a number of innovative concepts mean it can continue to be used for some time to come. Two real examples demonstrate just what can be achieved.

Wesendorf: controlling generation processes

The district authority in Gifhorn and REMONDIS have been operating a combined heat and power plant at the Wesendorf landfill site since 2009 to generate electricity from landfill gas. An ingenious system helps ensure the best possible gas yield: spray rinsing equipment is used to water the landfill bodies in a targeted manner, with oxygen being added at the same time. This means that the decomposition processes occurring within can be controlled. A network of pipes, gas wells, and collection points almost five kilometres long captures the gas and transports it to the power station. The energy generated here is fed into the public grid, providing electricity for 500 homes.

Freiburg: extending periods of use

In southern Germany, the municipal business, Stadtreinigung Freiburg (ASF), the regional energy provider Badeno-

va, and REMONDIS have been collaborating on a pioneering project. With the gas methane content at the Eichelbuck landfill site having fallen below the level required for energy generation, biogas is now being added. The biogas comes from a nearby digestion plant, where REMONDIS processes 30,000 tonnes of biowaste from private households every year. When the two energy sources are combined, it is possible to make up for the declining fuel value of the landfill gas, with 4,900 homes being provided with electricity and 1,200 homes with heating as a result. The process is the only one of its kind in Germany and shows what can be done at other landfill sites – both in Germany and abroad.

Prospects for foreign markets

Responsible energy generation is a global task. No new landfill sites will be created for municipal waste in Germany. In other countries by contrast, it is “business as usual” as far as landfill sites are concerned. German expertise and technology can play a part in ensuring that landfill gas makes a useful and environmentally friendly contribution to the energy mix in other countries as well. This is also very important from a climate perspective, as landfill sites that do not have systems to capture the gas are among the main producers of climate-damaging methane.

If biogas is added to landfill gas with a low methane content, it can continue to be recycled to generate energy.



German Law on Life-Cycle Management

Recycling gets the green light

REALIGNMENT OF GERMAN LIFE-CYCLE MANAGEMENT AND WASTE LEGISLATION



Germany's high environmental and waste management standards are mainly the result of the commitment made by the private sector, both in terms of expertise and finance. The eagerly anticipated and recently announced changes to the German Law on Life-Cycle Management should help ensure the standards achieved so far continue to rise. A number of important points have yet to be resolved.

It is not yet clear whether small electrical devices may be thrown in the recycling bins.

The draft Law on Life-Cycle Management set forth by the Federal Government on 30 March 2011 has three main goals: first, the five-stage waste hierarchy outlined under the European Waste Framework Directive is to be transferred into German law; second, material recycling rates are to be increased; third, the division of waste management tasks between local municipalities and the private sector is to be specified more clearly. The draft legislation is not particularly clear on some issues.

The sector for secondary raw materials already provides around 14 % of all raw materials used in Germany.

Specific measures were outlined to promote recycling and other ways of reusing materials. According to these, paper, metal, plastic and glass waste must be collected separately across the country by 01 January 2015 at the latest. The recycling rate for municipal waste should be at least 65 % by 2020. A figure of 70 % will apply to construction and demolition waste by then, although this guideline is to be

re-examined before the end of 2016. It is a pity these recycling targets do not really represent challenging hurdles, as the current recycling rate for municipal waste is already almost 63 %. As far as construction waste is concerned, the required figure could easily be changed to 80 % or higher to ensure sustainable recycling success.

The increased obligations to hand over waste are also open to criticism. They now include an additional duty, whereby private householders have to hand over mixed waste to public sector waste management businesses.

The transfer of responsibility for collection notices passing to a neutral authority marks an important change. This means it is no longer possible for the authority entrusted with disposal-related activities to make decisions – keeping it “in house” as it were – on whether collections are



Details about how the recycling bin will be operated are being worked out in a business game before the law is passed by the German Ministry for the Environment and the Bundestag.

permitted. In addition, an authority may no longer prohibit commercial collections simply because it has reservations but must produce hard facts proving the unreliability of the collecting party.

No answers to important questions

A key precondition for the desired increase in recycling rates is the blanket introduction of standard recycling bins for the collection of packaging and other waste material containing plastic and metal. Although the new Law on Life-Cycle Management provides the legal basis for this, specific legal regulations are expected to be passed under a separate procedure at a later date in the form of an ordinance or a free-standing act. As such, questions regarding the precise division of waste management tasks between local municipalities and the private sector remain unanswered for now. In reality, it would be hard to find one local municipality which owns or operates its own plants capable of performing the complex tasks associated with environmental services, such as sorting, processing and marketing secondary raw materials. Many local municipalities would also find it inappropriate to make a commitment in these

areas, given their tough budgetary position – particularly since private operators can provide these services more cheaply and efficiently.

Around 90 % of all recycling plants currently operating in Germany were set up by private sector recycling companies.

Business game to ensure efficient implementation

In order to clarify any unresolved technical, conceptual and financial issues before making a decision regarding responsibility for recycling bins, Germany's Federal Environment Agency (UBA) has launched a business game. This involves the various stakeholders, such as local municipalities, the waste management sector, environmental associations, manufacturers, retailers and consumers. Those participating, including REMONDIS, work within a strategy group and two discussion groups. The German Ministry for the Environment is set to build on this work in the summer of 2011 by making recommendations for the efficient implementation of the Law on Life-Cycle Management.

Sustainability

Green travel

BIODIESEL FROM ECOMOTION EASES COMPETITION FOR SPACE

ecoMotion

The European Union (EU) would like biofuels to account for one tenth of fuel consumption by 2020. This should reduce consumption of fossil-based raw materials and, in particular, curb CO₂ pollution. Biodiesel obtained from residual waste is considered to be particularly climate-friendly - a fuel which is not only being used as a substitute for mineral oil but also for energy crops.



Only around 1.5 % of the area used to grow oil plants and grain around the world is devoted to the production of biofuels.

Unlike biofuels from energy crops, biodiesel made from waste or residual materials does not require any cultivable land. This represents a significant plus in terms of its climate impact. REMONDIS runs a good half of its fleet of 6,000 commercial vehicles on this second-generation biodiesel. This eco-friendly fuel is produced by REMONDIS' sister company SARIA and is considered to be the most climate-friendly and most sustainable biodiesel manufactured on an industrial scale in Germany.

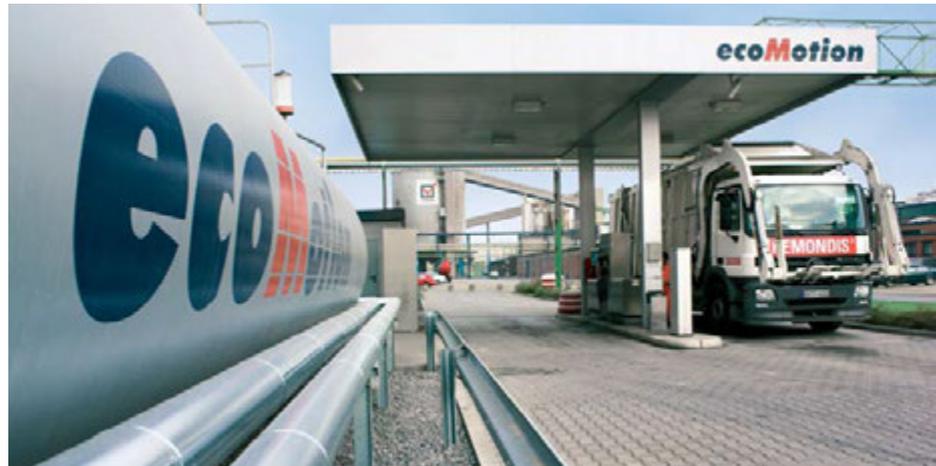
Contributing to climate protection

Fuel production at the SARIA Group is concentrated within ecoMotion. It operates plants in Lünen, Malchin and Sternberg. All three plants satisfy the specifications under Germany's biofuel sustainability ordinance (Biokraftstoff-Nachhaltigkeitsverordnung) and are certified accordingly. Certification confirms that both the production chain and the fuel satisfy special sustainability criteria. These include the protection of valuable natural areas, such as wetlands or peat bogs, and proof of significant reductions in climate-damaging CO₂ emissions compared with fossil fuels.

ecoMotion has been producing and selling biodiesel of the highest quality since as long ago as 2001. The company is able to produce 212,000 tonnes of biodiesel a year if working at its current total capacity. This amount supports a CO₂ reduction of around 400,000 tonnes, which is equivalent to the annual emissions of 170,000 cars. The unusual thing about ecoMotion biodiesel is the fact that biogenic residual materials and by-products are also used for production purposes, including animal fats generated by the food processing industry. This high-quality biofuel reduces greenhouse gas emissions by 83 % compared with fossil fuels, approximately double the reduction achieved with conventional biodiesel.

Germany is wasting opportunities

The EU's "Sustainability Criteria for Biofuels" directive confirms that biodiesel obtained from residual materials offers the greatest potential in terms of reducing greenhouse gas-



es. As a result, the EU affords special status to this environmentally friendly fuel: these biofuels count double in terms of the biofuel rate to be achieved by each member state.

In general, Germany's energy policy also favours a greater use of biogenic residual waste and other kinds of waste. Unlike other EU countries, however, there are restrictions in Germany on the use of animal fats for fuel production. As of 2012, it is even set to be sidelined altogether.

Biofuel without the need for land

Excluding animal fats from biofuel exploitation flies in the face of climate protection and a frugal approach to crude oil reserves. Debates on this topic often focus on the alleged competition for space between fuel and food. The facts, however, speak for themselves: according to calculations from the UN Food and Agriculture Organization (FAO), there are 2,700 million hectares of potential arable land available worldwide, although only two-thirds of this total are currently being used. Given this, the areas still available would provide enough space to plant both additional food and energy crops. Having said this, these areas, like anything the Earth has to offer, are also a resource to be spared if opportunity allows.

Lorries can fill their tanks with ecoMotion's own biodiesel at the filling station at the Lippe Plant in Lünen.

Content is everything: biodiesel obtained from biogenic residual materials saves on space and also offers good potential for reducing CO₂ emissions.

Turkey

Rapid expansion of environmental services

REMONDIS ATIK AND REMONDIS BURCU ON THE ROAD TO GROWTH



The ongoing development of environmental services in Turkey finds the REMONDIS Group on the right path. The two companies based in Turkey are gaining more and more industrial customers. The industrial customer base has already expanded this year to incorporate such companies as Mercedes, ISE Automotive Group, Philip Morris and Coca-Cola.

REMONDIS®

Having successfully established itself in water resources management, REMONDIS is now also experiencing rapid expansion in the environmental services sector. In many cases, this is due to renowned and internationally active companies taking advantage in Turkey of the comprehensive range of services offered by REMONDIS Atik and REMONDIS Burcu.

REMONDIS' environmental services activities in Turkey are focused on expanding its industrial customer base and its services provided for local municipalities.

Mercedes: with the best recommendation from Istanbul

REMONDIS Atik was given a contract by Mercedes to manage waste at its plant in Aksaray, a provincial capital in Central Anatolia. The range of services provided by REMONDIS covers the introduction of a suitable collection system, disposal of production and hazardous waste, collection of recyclables and presorting and collection of production waste including scrap. 1,240 employees work at the 80,000m² heavy goods vehicle plant owned by Mercedes, which was built in 1986. A key factor behind the decision to award the contract was the positive experience Mercedes had enjoyed at an Istanbul site. Here, REMONDIS took over the full waste management operation for the Hosdere bus plant at the start of 2010 and has been able to make a good impression since thanks to its excellent performance.

ISE Automotive Group: getting on with the neighbours

Aksaray is also home to the Turkish production facility of Germany's leading automotive supplier, ISE Automotive Group. Based a mere stone's throw away from Mercedes, the company is another new customer of REMONDIS Atik. Here too, the range of services offered by REMONDIS covers the introduction of a suitable collection system, as well as plant waste disposal and the collection of recyclables. ISE has ten sites in six countries around the world with around 2,800 employees. Its customers include the elite of the automotive industry. In Aksaray, ISE supplies its neighbour Mercedes with products such as bodysheet parts, longitudinal and cross beams, welded assemblies and fuel tanks.

Philip Morris & Sabanci: service for strong brands

Since the start of the year, REMONDIS Burcu has been a new waste management partner for the Philsa tobacco product manufacturing plant in Torbali, a city in Izmir province. Philsa was established in 1991 as a joint venture between Philip Morris International and Sabanci Holding, both of whom enhanced their market position through this

“REMONDIS is raising its profile in Turkey with every new internationally active major customer it acquires.”

Emin Bakalci, managing director of REMONDIS Atik



strategic partnership. As a result of this successful collaboration, Philip Morris decided to set up a production facility in Turkey. The state-of-the-art plant is the company's fourth largest worldwide and currently has over 700 employees. 58 or so different products are manufactured here, including some famous cigarette brands.

Coca-Cola: a good choice at two plants

Even the biggest international manufacturer of soft drinks with one of the world's most famous brands has been using the services of REMONDIS Burcu since the start of March this year. Coca-Cola is benefiting from a professional plant waste management operation at both its Kemalpaşa production facility built in 1968 in the province of Izmir and its Antalya plant built in 1982. A total of around 2,600 employees work at the two sites.

“REMONDIS is raising its profile in Turkey with every new internationally active major customer it acquires,” explained Emin Bakalci, managing director of REMONDIS Atik. “Customers are happy we can offer them a modern and bespoke waste management service, leaving them to concentrate on their core business.”



“Customers are happy we can offer them a modern and bespoke waste management service, leaving them to concentrate on their core business.”

Emin Bakalci, managing director of REMONDIS Atik



The war against plastic waste in the sea

DAVID DE ROTHSCHILD PRESENTS HIS "PLASTIKI" PROJECT AT THE LIPPE PLANT

"I think that reducing our waste and decreasing our impact on natural resources, which

Many consider themselves to be "environmental activists". Most, however, generally limit themselves to supporting a relevant organisation. David de Rothschild does the term more justice than most. As a youngster, the British offspring of this famous banking family made it to both poles on foot to raise awareness of global warming. His latest project has seen him waging war against plastic waste in the sea. He sailed on a self-made raft, largely consisting of plastic waste, through the middle of the "Great Pacific Garbage Patch". He has now given a presentation on his "Plastiki" expedition at a place where people have already been successfully implementing the solution to this problem for a number of years – the Lippe Plant in Lünen.

REMONDIS and Rothschild Bank had issued the invitations and many A-list guests attended the event. An Ecology Adventure Dinner for around 200 guests at the Lippe Plant in Lünen was a suitable occasion to discover more about the Plastiki expedition. For David de Rothschild, the name says it all. The 32-year-old sees environmental protection

as a big adventure that he would like as many people as possible to share. He uses his missions and associated lecture tours to give nature a voice. And he uses his own voice to raise awareness of ecological problems which people would otherwise never find out about, given the very long distances involved. The same is true of sea pollution caused by plastic waste. Particularly in the Pacific, plastic waste propelled by global ocean currents gathers to form enormous carpets. These represent a tremendous hazard to marine fauna and eventually to humans too, via the food chain. The materials involved are exceptionally well suited to recycling, as the plastics recycling unit at the Lippe Plant has been proving for years. As such, there could be no better place for David de Rothschild to express his wishes than at REMONDIS' industrial recycling centre, the largest of its kind worldwide. It was, for example, Norbert Rethmann who recognised even back in the 70s that plastic items should not be thrown away but turned into new plastics. And in his welcome address to the VIP audience, Norbert Rethmann spoke of this and other recycling services sup-

Norbert Rethmann's presentation showed the solutions to the problem – solutions which he himself introduced back in the 70s



David de Rothschild uses his missions and associated lecture tours to give nature a voice.



... basically is our use of materials that create waste, is something that is very achievable." David de Rothschild

plied by the company he led to international stature. The name "Plastiki" is based on Thor Heyerdahl's legendary "Kon Tiki" expedition at the end of the 40s. But whereas the Norwegian wanted to show that Polynesia had been colonised from South America, David de Rothschild merely wishes to make us more acutely aware of a global environmental problem, which might find its way onto our plates if we ultimately fail to do anything about it. REMONDIS shows there are practical solutions through the work it does at its Lippe Plant on a daily basis, where practically all plastic waste is fully recycled. Recycled plastic cannot end up as rubbish in the sea. This approach, combined with EU

guidelines on waste avoidance and the recycling of materials, offers a solution capable of mastering the problem in future, providing it is implemented at an international level. Guests found the evening a riveting and relaxing experience in equal measure. This was also partly due to the laid-back nature of David de Rothschild, who prefers to strike an optimistic note with his free-and-easy manner. He even concluded his lecture by quoting Kermit the Frog: "It's not easy being green". This may be true, but it is also possible, as REMONDIS proves only too well.

The Lippe plant in Lünen has already been recycling plastic in an environmentally friendly way for many years.

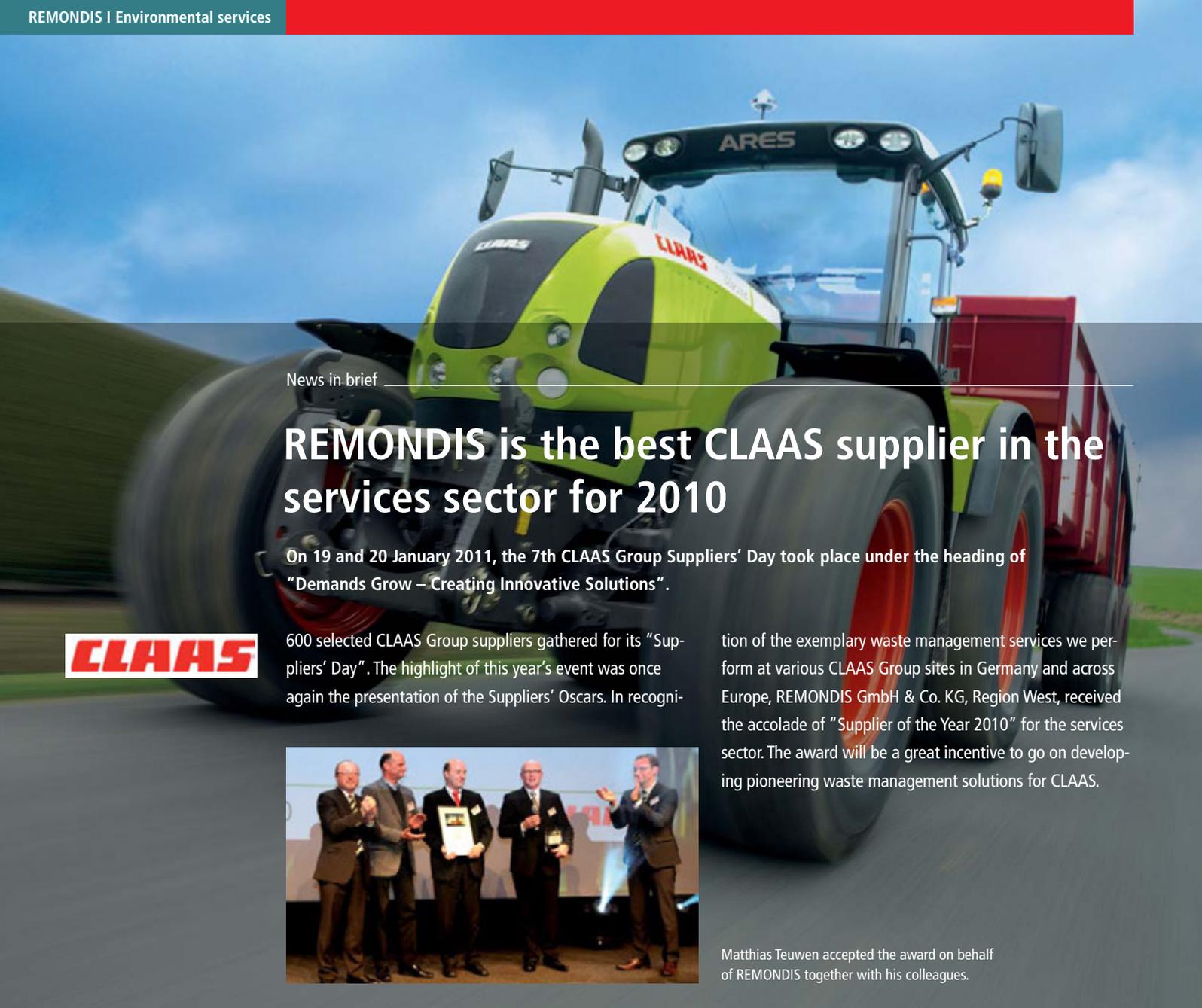
David de Rothschild

on his inspiration as an environmentalist:

"My inspiration is bound up in the desire to use adventure as a means of raising awareness of pressing social and ecological problems. I hope that our expeditions also inspire others to do something themselves and make individual people, society as a whole and industry forces for change."

on his Plastiki expedition:

"I wanted to have an exciting and pioneering adventure which would not only be informative but also prove fascinating to a worldwide audience, who would in turn adopt a more responsible approach to our planet. I think that by improving design efficiency and increasing understanding of how we use materials, particularly plastic, we will be able to transform our waste into valuable resources and reduce our plastic fingerprint on the world's seas in the process. Throughout the planning stage, the Plastiki expedition was influenced by the cradle-to-cradle principle and a technology-led imitation of natural structures. Only then could the plan be turned into reality by an incredible team of specialists from the fields of marine sciences, sustainable design, ship-building, architecture and material sciences."



News in brief

REMONDIS is the best CLAAS supplier in the services sector for 2010

On 19 and 20 January 2011, the 7th CLAAS Group Suppliers' Day took place under the heading of "Demands Grow – Creating Innovative Solutions".



600 selected CLAAS Group suppliers gathered for its "Suppliers' Day". The highlight of this year's event was once again the presentation of the Suppliers' Oscars. In recogni-

tion of the exemplary waste management services we perform at various CLAAS Group sites in Germany and across Europe, REMONDIS GmbH & Co. KG, Region West, received the accolade of "Supplier of the Year 2010" for the services sector. The award will be a great incentive to go on developing pioneering waste management solutions for CLAAS.



Matthias Teuwen accepted the award on behalf of REMONDIS together with his colleagues.

News in brief

Treating process water in the metal and automotive industries

On 24 May 2011, REMONDIS Aqua's industry division, in collaboration with the Institute of Environmental Technology and Management at the University of Witten/Herdecke, will be holding a specialist conference on the subject of the treatment of process water in the metal and automotive industries. REMONDIS Aqua is also cooperating with the UN Water Decade Programme and the North Rhine-Westphalia Efficiency Agency on this.

The event is taking place in the "Großer Saal" conference room in the Research and Development Centre (Forschungs- und Entwicklungszentrums, FEZ) at 44 Alfred-Herrhausen-Straße in Witten. Experts will be given the opportunity to exchange views on ongoing improvements in the treatment of process water in the metal and automotive industries, whether for re-use in the process or for discharge. The reason is the fiercely competitive environment,

which is driving the process of constant optimisation – and especially in areas of infrastructure such as water technology. It is also necessary to adapt to the changing legal framework conditions. The speakers at the conference will give participants an overview of the latest technology and new trends in water treatment. Additionally, there will be presentations demonstrating ways of optimising performance and giving examples of successful industry practice.

Markus F. Schmidt joins senior management team of REMONDIS Energy & Services

REMONDIS Energy & Services GmbH has appointed Markus F. Schmidt a member of its senior management team effective immediately. A graduate in business management, he has many years' experience of the energy sector and corporate development in both the public and private sectors. Markus Schmidt will be responsible for further developing REMONDIS' energy business as well as marketing its energy-related products and services.

Born in Arnsberg in 1965, Markus Schmidt is a member of several supervisory boards, including TÜV Rheinland, and was Board Chairman of Stadtwerke Düsseldorf AG until the end of 2009. Before this, he was a member of the board at RHENAG Rheinische Energie AG in Cologne. Commenting on his new tasks at REMONDIS, Markus Schmidt said, "Looking at future energy supply and the links between the water and environmental service branches and the energy sector, it is clear that one of the important tasks today is to identify and make use of business potential between the private and public sectors."



Markus F. Schmidt

EVZA Staßfurt – one millionth tonne processed

It is an impressive anniversary and the numbers are impressive too. A total of 1,244 days have passed since Energie- und Verwertungszentrale GmbH, Anhalt (Anhalt energy and recycling centre) began operations. A total of 10⁹ kg of waste has been thermally recycled in 52,900 operating hours.



This is the remarkable achievement of 61 motivated employees at a modern processing plant in the region south of Magdeburg, which has achieved great technical efficiency and created many interesting jobs.

systems, the EVZA has become a key component of the recycling infrastructure in Saxony-Anhalt and of its electricity and heat supply too. We congratulate all those involved on this superb achievement.

EVZA, which uses highly efficient processes to turn waste into electricity and process heat for local industry, has achieved some very impressive results:

- 600,000 MWh of steam
- 400,000 MWh of electricity
- 290,000 Mg of valuable slag
- 60,000 Mg of usable residual material

This is what the plant has produced since it began operating just under four years ago. With its efficient thermal recycling processes combined with highly efficient filter



Jürgen Kunert and his colleagues are in action 365 days a year, 24 hours a day. Throughout the whole of Germany as well as abroad.



Explosive deslagging work

A job like no other

JÜRGEN KUNERT MASTERS BLASTING WORK IN HOT AREAS – A SUPREME DISCIPLINE

Buchen KraftwerkService GmbH, Cottbus branch. This is where a very select team of people work. Their speciality is carrying out jobs which others would find very hard to emulate – for example blast cleaning work in power plants using explosives whilst the station is still operating. Normally, it is absurd to speak of using explosive materials in places where the temperature can reach up to 1,000°C but special procedures and sophisticated technology make it possible.

Whether it be maintenance work or a malfunction: speed and efficiency are needed to clean power stations. By providing blast cleaning services using explosives, Buchen ensures that the plants are run at optimum levels and that downtimes are minimized.

Jürgen Kunert is one of the few experts able to work in this explosive area of activity. The 52-year-old uses explosives to clean boilers, bunkers and silos. Sometimes it involves removing materials the size of a shopping bag, sometimes chunks of slag the size of a lorry. The system is always the same: blast waves are created in a targeted manner to loosen the incrustation and transform it into small pieces of material.

Jürgen Kunert has already carried out a good 2,500 blast cleaning sessions using explosives. His most important tool is a lance made of steel. Completely insulated against heat, the explosives are transported in the lance's tip. The explosives specialist inserts the lance through a small opening into the inner section of the boiler, positions the blasting charge and then takes cover. His colleague ignites the charge – from a safe distance. They have very little time – just a few minutes – to position the explosives and then

ignite them. The whole thing would appear to be a very quick job – but the actual blasting is only the final phase that has been preceded by detailed considerations and safety measures.

The Buchen Group has been offering this service since 2009. Ten employees working at Buchen KraftwerkService GmbH are qualified to carry out blast cleaning work using explosives and several more people are currently being trained in this area in accordance with the relevant legal regulations. "All the colleagues are from our own workforce. We are, after all, primarily industrial service providers. We see boiler cleaning as an overall issue and the explosive-based cleaning activity as just one part of the whole system," explained Jürgen Kunert, himself a qualified specialist for industrial services.



In the past, slag was removed manually – work which was both hard and dangerous. Thanks to the use of explosives, the work has become easier, quicker and safe. When Jürgen Kunert talks of safety, he means for the people and for the power station. "We always have to be completely on top of our game because once we've done our work it is impossible to undo it." The Cottbus' success rate reflects this – the number of errors it has made is zero. "You have to work with the highest levels of precision to ensure the plant is not damaged during the blast. We are, so to speak, the 'watchmakers' among the explosive specialists."

> Impressions



◀ Former UN general-secretary Kofi Annan welcomes the nominees for the Global Water Award. From left to right: Dr Dirk Wittenberg, Sven Averhage, Kofi Annan, Ralf Czarnecki (REMONDIS Aqua).

Two campaigners for sustainability: Norbert Rethmann and David de Rothschild at the Ecology Adventure Dinner at the Lippe Plant.

Jean-Louis Hurel, a member of SARIA's management team in France, during his visit to the Rothschild Gala in Lünen.



Walter Cammann from Rothschild Bank and his wife Ulrike Cammann talking to Dr Martin Rethmann and Hans Vornholt.



Dr Kurt Stoffel, Board Chairman of SARIA Bio-Industries, talking to Dr Peter Nölke and Dr Monika Nölke.



◀ Constantin Baron Heereman von Zuydtyckwyc enjoyed the informative evening among some illustrious company at the Lippe Plant.



◀ From left to right: Dr Ingo Karsten, Head of the Economic Department at the German Embassy in Peking, Mr Guo Yubin, Vice General Manager of FAW Recycling and Vice President of the joint venture FAW Recycling REMONDIS in Changchun, Mr Hans Mahncke, Managing Director of Rhenus Logistics Asia-Pacific Ltd., Mr Jiang Hongbo, REMONDIS Shanghai, Mr Georg Rethmann, Mr Juergen Feiler, Managing Director of REMONDIS Industrie Service GmbH & Co. KG and President of the JV FAW Recycling REMONDIS in Changchun, Mr Daniel Tweer, REMONDIS Shanghai, Mr Sui Xiucui, General Manager at FAW Recycling, Mr Peter Fordyce, Vice Managing Director of the JV FAW Recycling REMONDIS in Changchun, Mr Mu Kangyi, Vice General Manager FAW Recycling, Mr Jan Noether, delegate and Chief Representative of the Delegation of German Industry & Commerce Greater China – Shanghai, Dr Zhao Xuemin, REMONDIS Shanghai, Mr Shuwen Wang, Vice General Secretary of the China Association of Resource Comprehensive Utilization, Mr Zhang Wei Vice General Manager FAW Recycling, Mr Liu Jianmin, President of the China National Resources Recycling Association, Mr Liu Zhiguo Vice General Manager FAW Recycling.



No Rare Earths – No Wind Power.

> Shortage of raw materials

RE One of the rare earths is neodymium – an element used to produce, among other things, high performance magnets for wind turbines. In 2030, the demand for neodymium for future technologies alone is expected to be almost four times higher than the current rate of production. Moreover, it is practically impossible to substitute this raw material and there may be supply risks in the future as it is mined in just a few regions. REMONDIS is researching ways of recycling neodymium. The highest levels of quality, worldwide. For a secure future. **German Qualität.**

Sources: United States Geological Survey (USGS 2010), Cologne Institute for Economic Research (IW 2008), Fraunhofer Institute for Systems and Innovation Research and Institute for Future Studies and Technology Assessment (ISI 2009)

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Neodymium is classified as being very critical because it is almost exclusively mined in China. And the country is already imposing export duties on rare earths.