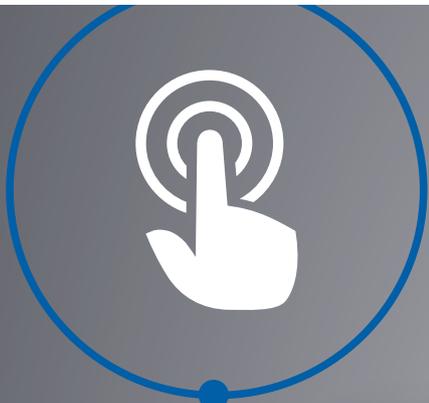


# Our Environmental Commitment. Helping to overcome global challenges

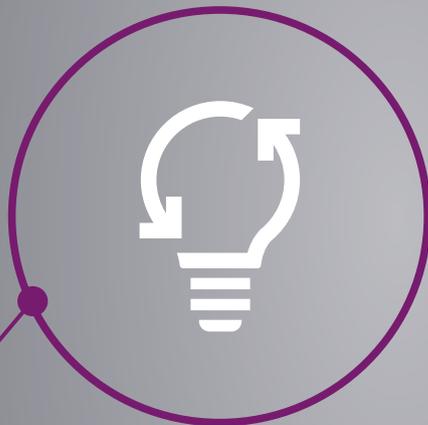


Acting

Living



Inspiring



Fostering



Sharing

> REMONDIS SE & Co. KG

REMONDIS' World of Sustainability.  
A look at what we do

remondis.com  
remondis-sustainability.com

# REMONDIS – Working around the globe

## Working for the future

Being one of the world’s leading recycling, services and water companies with over 30,000 employees, everything we do focuses on sustainability and sustainable development. Operating in over 30 countries across four continents, we help protect the environment and conserve our planet’s natural resources. Thanks to our work, we have been presented with the German Sustainability Award [Deutscher Nachhaltigkeitspreis] as one of the Top 3 most sustainable large corporations in Germany three times now.



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12

### ACTING

Recycling, services, water: curbing climate change and conserving resources are at the very core of everything REMONDIS does.

### LIVING

Environmental and social responsibility are the cornerstones of our company philosophy. They form the basis of our business.

### INSPIRING

So much more can be achieved together. We create collaborations and partnerships to give greater prominence to the subject of sustainability.



# Preface

When REMONDIS began its recycling operations over 40 years ago, the whole subject of sustainability and sustainable development played – at the very most – a minor role in most people’s lives. Much has changed since then: sustainability has become a global challenge – one that is growing in importance every single day.

A look at the figures makes it very clear what issues we are facing. Global consumption of raw materials has risen to 70 billion tonnes a year. Both the rapid growth in the world’s population and the upswing in the threshold countries are further fuelling demand. Consumption of raw materials is expected to have doubled by 2050 – to at least 140 billion tonnes a year.

And yet we are already living beyond our means. Earth Overshoot Day – the day when humanity has exhausted nature’s budget for the year – comes a little bit earlier each year. It was on 02 August in 2017. Every day after that, humans consumed more natural resources than the Earth could replenish. If we continue down this path, helping ourselves to more than we actually have, then we will need a second planet by 2020 and a third by 2050.

These scenarios make it clear just how important sustainable recycling actually is. The only way to prevent inequality among generations and nations is to ensure raw materials are systematically recovered for reuse – as well as, of course, to take effective steps to curb climate change and guarantee a reliable supply of water. REMONDIS has been playing a major role here both at national and international level. Besides carrying out our day-to-day work, we are constantly working on improving conditions so that comprehensive recycling systems can be set up and doing everything in our power to drive forward the whole notion of sustainability. Which is why our Environmental Commitment also includes the chapters, ‘inspiring’, ‘fostering’ and ‘sharing’. As always, working for the future.

Herwart Wilms,  
Managing Director REMONDIS Assets & Services GmbH & Co. KG

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## FOSTERING

We support a whole host of projects with our expertise. Why? The better the conditions, the faster, more efficient and more sustainable the progress.

20

## SHARING

Sustainability and resource conservation are two important tasks of our time. We believe it is part of our mission to spread this message.

22

## ANNEX

A few facts & figures: the infographics in the annex provide information about REMONDIS as well as about the availability of essential raw materials.



The future can wait? You must be joking! Future generations and today's developing countries will only be able to enjoy prosperous lives if steps are taken right now to counteract the growing shortages of raw materials. For REMONDIS – being one of the world's leading recycling, services and water companies – there can be only one goal: to tackle this problem and to take action

## No resource conservation – No sustainability

REMONDIS handles huge volumes of materials, treating them and returning them to production cycles. Each year, we collect and process over 30 million tonnes of recyclables so that they can be sold on to industrial businesses as raw materials. And this figure continues to rise. We are driven by our dedication and commitment to recover and recycle new materials as well as to optimise existing recycling systems.

1

The activities at the Lippe Plant reduce carbon emissions by around 488,000t every year

### The Lippe Plant – A centre for sustainability

REMONDIS' Lippe Plant in the German town of Lünen is the largest industrial recycling centre in Europe. Covering a surface area of 230 hectares, this recycling park is home to a wide range of different facilities able to process and recycle a whole variety of materials. Synergies, modernisation measures and new technologies ensure the Lippe Plant's performance is increasing all the time. Over the last few years alone, REMONDIS has invested over 400 million euros in the site. At the moment, 1.4 million tonnes of input material are processed and transformed into 0.9 million tonnes of raw materials at the Lippe Plant every year. In 2015, the recycling activities in Lünen were officially added to KlimaExpo.NRW's list of projects that have a sustained beneficial effect on our climate. In 2016, they were then named one of the twelve best projects.

### Mission – A tradition of being a pioneer

REMONDIS has been promoting the systematic recovery and recycling of raw materials for more than 50 years now. Our business is run according to the principles of material flow management drawn up by the Enquête Commission of the German Bundestag for the "Protection of Humanity and the Environment" in 1998. At REMONDIS, acting sustainably also means finding ways to recycle materials that may, at first glance, seem impossible to recycle. Our business is, therefore, geared towards innovation. Many recycling systems have been developed and patented by our company. These then act as a springboard for further progress and pioneering solutions, helping to sustainably drive forward recycling.

Oriented towards the future, based on traditional values – this is one of the distinctive features of REMONDIS' business

	substitute		
scrap iron	7,316,000t	10,242,000t	iron ore
old paper	1,675,000t	4,506,000t	wood
e-waste	145,000t	4,868,000t	copper ore
recycled aggregate	2,900,000t	2,900,000t	naturally sourced aggregate
old glass	885,000t	1,062,000t	minerals
gypsum (from flue gases)	262,200t	262,200t	flue gas emissions

### Water supply – At home and abroad

REMONDIS has decades of experience of supplying and treating water as well as operating water and sewer pipe networks. We take care of all the details, from processing drinking water to treating wastewater (e.g. by running sewage treatment plants). What's more, we supply industrial businesses with ultra-pure water and provide them with reliable wastewater treatment services, using environmentally friendly processes to clean their industrial wastewater.

748 million people around the world get their drinking water from polluted sources. This is something we wish to change

### A practical example: Working all around the world for a better future

In India, REMONDIS supports the Clean India project, an initiative launched by the Indian government. As part of this project, REMONDIS Aqua works at a variety of locations in India providing services covering all aspects of water management. At the same time, we support the water and wastewater training courses held by the Indo German Competence Academy (IGCA) to combat the skills shortage in the water sector.

350,000 tonnes of phosphoric acid could potentially be produced if the phosphorus across Germany were to be recovered

**Phosphorus recovery – Using patents to guarantee supplies**

Phosphorus plays a vital role when it comes to biological growth and energy metabolism. Global resources of phosphorus, however, are becoming scarce and are limited to just a few countries. As a result, systems that enable phosphorus to be recovered are becoming increasingly important. REMONDIS has found ways to fully close material and economic cycles with its patented systems. These are able to recover large quantities of phosphorus from sewage sludge and industrial wastewater – not only helping to conserve primary raw materials but also to reduce carbon emissions.

**Recovering phosphorus with patented processes**

Process	Product	Areas of use (product)
REMONDIS-REPHOS®	magnesium ammonium phosphate	fertiliser on agricultural land
REMONDIS-TetraPhos®	phosphoric acid	production of fertiliser industrial applications
	gypsum	building supplies sector
	iron & aluminium salts	wastewater treatment

**Plastics recycling – Conserving resources on a grand scale**

Several million litres of crude oil are used to produce plastics every single year. Recycling plastics not only avoids a build-up of waste but also conserves our planet’s valuable natural resources. REMONDIS has been working in this field for over 60 years now. We are able to reduce consumption of the primary raw material, oil, by supplying our industrial clients with pellets made from recycled plastic.

**A practical example – High-tech recycling: innovations for the future**

Plastics are being combined with other materials in more and more complex ways and in ever smaller quantities, making it increasingly difficult to recover them. Our specialist company, REMINE, has been developing and using processes that enable even the smallest amount of plastics to be recovered and separated more effectively than is possible at any other facility in Germany – even from composite materials that have been melted together.

REMEX ProTerra alone treats 1.7 million tonnes of soil every year

**Land remediation – From contaminated sites to valuable land**

Thanks to its remediation services, REMONDIS is able to breathe new life into contaminated sites so they can be used again. Moreover, the general quality of the soil is improved at the same time. Around 200 million tonnes of mineral waste are generated by construction and demolition projects in Germany every year. Over 90% of this material can be recycled. REMONDIS has both the technology and processes to transform these materials into top quality recycled aggregate which can then be used, for example, to build roads.

### Hazardous substances – Dangerous and yet valuable as well

For over 40 years now, REMONDIS has been making the most of every opportunity to develop ways of transforming hazardous waste into innovative recycled products so that the materials can be returned to production cycles. Just one example here is mercury which REMONDIS QR GmbH can recycle in its unique facility, producing purity levels of 99.999999%. Non-reusable hazardous substances are disposed of – and turned into energy – by REMONDIS using environmentally compatible systems in line with stringent safety standards.

### Energy production – Electricity & heat from the waste management sector

In 2015, around 19 terawatt hours of the total amount of energy produced in Germany came from the waste management sector, around 3% of the gross energy produced. REMONDIS plays an important role here generating environmentally and climate-friendly energy. Besides operating its own plants, REMONDIS has shares in waste incineration plants across Germany which supply their regions with energy. We also find more unusual ways to generate energy, for example producing carbon-neutral energy by incinerating the sewage sludge from wastewater treatment processes.

Generating environmentally friendly electricity and heat – climate neutral, with absolutely no fossil fuels

### A practical example – RE2ENERGY®: energy from wastewater

Industrial wastewater often contains large amounts of organic substances. We are able to eliminate these from the wastewater and generate biogas with our RE2ENERGY® process. This energy efficient system is, for example, used by the Oettinger Brewery in Mönchengladbach, for whom we built a state-of-the-art wastewater pre-treatment facility. When used to full capacity, this facility reduces carbon emissions by up to 2.3 million kilogrammes every year.

Fluidised bed power plant

178,300 MWh

Biomass-fired power plant

158,600 MWh

REMONDIS produces 336,900 MWh of energy at its Lippe Plant alone. Find out more about the plant's services and products in the chart on pages 24/25

Total energy

336,900 MWh

114,600 MWh

Own requirements in-house

222,300 MWh

Energy to external customers



What is the best way to achieve sustainability? From within. The reason is clear: people who call for a better world must themselves be sustainable. And not just now and then – but every single day, in every way possible and with great resolve and conviction. Which is why in-house issues at REMONDIS are also governed by the premise: live sustainably

## Responsibility from within

Despite the size of our business, we continue to be what we have always been: a family-run company. Which means REMONDIS places great importance on values such as transparency, treating each other fairly and conducting its business with a great sense of responsibility and in line with strict moral and ethical principles. High social standards around the world are also important as are strict compliance rules.

1

Our holistic view of sustainability includes us having high standards across the whole of our company set-up

### Approach – A strong financial and operational set-up

At REMONDIS, investing in new technologies and in company growth are more important than distributing profits among the shareholders. Over 90% of the profits made remain in the company. The company's high levels of equity capital and secure financial base provide it with a solid set-up and allow it to remain independent of the capital and raw materials markets. As a matter of principle, we never speculate on raw materials or participate in fields of business that involve risks or short-term gains. All company processes have been optimised to make them as environmentally sound and sustainable as possible. Examples here include our paperless CRM system and our energy management system. Using the biodiesel produced by our sister company, SARIA, reduces carbon emissions by 83%.

### Corporate Compliance – Our business principles

Both our managers and our employees are obliged to follow our Corporate Compliance Guidelines, which define how they should act in all relevant areas so that they work in accordance with the rules and regulations. Every employee is required to comply with the company-specific and legal rules applicable to their field of work.

REMONDIS is fully committed to free markets and believes that competition law is important for protecting fair competition. The company has a zero-tolerance policy on corruption. It does not engage in business transactions that violate legal provisions or company rules relating to giving or receiving advantages. Any actual or perceived conflict between corporate and private interests must be avoided. Personnel decisions must not be influenced by private interests or relationships.

Business relationships with third parties must be based purely on objective criteria, such as price, quality and reliability. The signing of a contract or the continuation or termination of a business relationship must not be influenced by personal relationships, interests or tangible or intangible advantages. The company seeks to maintain a constructive relationship with all the relevant authorities while safeguarding its own interests and rights. Employees responsible for compiling and forwarding information to the authorities should ensure that this is complete, correct and comprehensible and make it available openly and punctually.

REMONDIS complies with all legal requirements and ethical and moral principles – no matter which field of business or country it may be in

### Corporate Compliance – We are committed to:

- 1 Fair competition –  
no illegal cartel agreements
- 2 Integrity in our business dealings –  
no corruption
- 3 Keeping private interests separate from those of the company –  
no conflict of interests
- 4 Full cooperation with the authorities –  
no false information
- 5 Respect for human rights and fair working conditions –  
no compromises

3

We also invest in less developed regions helping to create jobs that are so badly needed

#### **Employer – Jobs for people all around the world**

REMONDIS has a workforce of over 30,000 people. Highly qualified managers can find a job at our company as can workers with few or no qualifications, who may otherwise have problems getting a foothold on the job market. Over 1,100 apprentices work at the company every single year and are able to choose from over three dozen apprenticeship courses. REMONDIS has been presented with a number of awards for its national and international traineeship programmes. What's more, we also offer higher level apprenticeships, which include a university course to receive a BSc or a BA in Business Administration.

#### **A practical example – The Lippe Plant: attractive jobs with a strong future**

REMONDIS has succeeded in transforming a former aluminium plant in Lünen into Europe's largest industrial recycling centre. By restructuring the site and changing its use, over 1,400 new jobs have been created in one of Germany's perhaps less structurally developed regions. And this number continues to rise.

4

#### **Health – Playing it safe**

It goes without saying that we work in line with stringent health and safety regulations. In addition to these, we have our own in-house guidelines and our own specialist Health & Safety Committee to ensure they are implemented. Our quality, health, safety and environment (QHSE) officers take part in specialist seminars led by external and internal specialists every two years. Moreover, ergonomic workstation assessments are carried out at regular intervals and our staff can have their eyes tested by our company doctors if they wish.

#### **A practical example – Safer driving conditions**

A well thought-out health protection programme should include many different individual measures. As many traffic accidents are caused because a vehicle's mirrors are not in the right position, REMONDIS has set up a mirror check station for lorry drivers. Lines have been painted on the ground to help the drivers adjust their mirrors to their correct positions.

5

Regional suppliers account for around 98% of the expenses incurred by our key business locations

#### **Responsibility – Procurement in line with strict principles**

REMONDIS also has high standards when it comes to purchasing. Which is why many of our suppliers have been presented with the German Sustainability Award [Deutscher Nachhaltigkeitspreis] – just as REMONDIS has. Institutions that promote inclusion and have a social or non-profitable set-up are actively involved in our procurement process.

### Architecture – High-tech with excellent energy efficiency levels

The main administration building at REMONDIS' head office in Lünen is a prime example of sustainable architecture and energy efficiency. The brick-lined building, which was built using many of the company's own products and processes, is expected to last for at least 100 years. The site has its own power station, which covers up to 85% of the on-site energy requirements. Environmentally and resource-friendly secondary fuels are used to generate this energy.

The heat generated by the building's own computer centre is also used to heat the administration offices

### A practical example – Energy management creates tangible benefits

Our energy management system stands out thanks to its complex monitoring procedures, which allow the daily energy consumption levels of all machinery to be documented and evaluated. These findings have led to a number of improvements being made – resulting in electricity consumption levels in Lünen being cut by 380,000 kWh and carbon emissions by 280t every year.

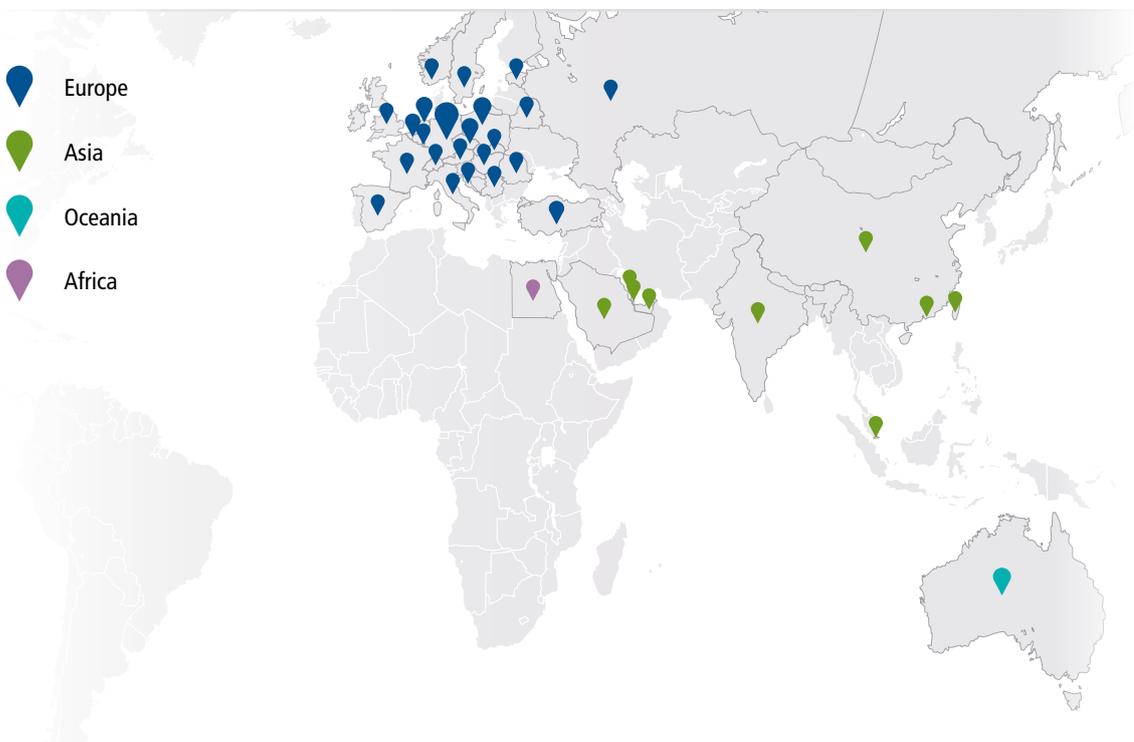
### Commitment – Working to improve living conditions

Know-how and responsibility go hand in hand. And this is something REMONDIS lives up to every single day to establish environmental standards and improve quality of life all around the world – no matter whether it be water management, providing reliable supplies of materials or supporting environmental projects. As part of our social responsibilities, we also support social and cultural projects and often work together with local charities.

REMONDIS has over 500 business locations in Germany and over 300 locations around the globe

### A practical example – Halting environmental pollution

The Russian city of Dzerzhinsk is considered to be one of the most polluted places in the world. REMONDIS has committed itself to this region long term, for example to introduce recycling systems into the city and to teach schoolchildren about separating waste. Why? Because the practice of incinerating waste – and the toxic emissions that sometimes result from this – can only be halted if the waste is separated according to type.





Sustainability is not a state or a condition but an ongoing process that needs teamwork. The more people who join in, the more progress can be made. Which is why we exchange information and collaborate with others – as always working for the future. Our goal: to come together to make a positive impact. And this works best when existing knowledge and skills are brought to the table to create something new

## Successful teamwork for greater sustainability

REMONDIS collaborates closely with customers, partners and research institutes who – just like us – wish to curb global warming and conserve our planet’s natural resources. The range of projects and initiatives is very wide indeed. Sometimes these focus on science and more theoretical aspects and at other times on a more practical approach. The goal, however, is always the same: to work together to come up with new ideas and solutions.

1

The Sustainability Certificate provides proof of how businesses have improved their carbon footprint – a unique opportunity within the industry

### Sustainability Certificate – Environmental protection in black and white

The independent Fraunhofer Institute UMSICHT and REMONDIS have developed a unique sustainability certificate. This enables our customers to document how our services help them to conserve resources and cut CO<sub>2</sub> emissions. As a result, their efforts to run a sustainable business can be proven and expressed in concrete figures. The certificate, which is based on the DIN EN ISO 14040 life cycle assessment, takes the whole of the chain of services provided by REMONDIS into account. Moreover, REMONDIS SAVA’s Energy Certificate provides proof of how much electricity is generated from the customers’ non-recyclable waste.

2

### **Focusing on material streams – A new approach for more recycling**

A raw material goes through various different stages – from the moment it is extracted from the ground all the way through to when it ends up in a recycling facility. REMONDIS is calling for all these different stages to handle the raw materials so that they can be recovered. Which is why we cooperate with industrial businesses – to promote products that are designed so that their raw material contents can be recovered once they reach the end of their useful life.

3

### **PPPs – High recycling standards for local authorities**

It is only possible to work sustainably if money is invested in new technologies. By entering into public private partnerships (PPP) with REMONDIS, local authorities can tap into opportunities, which they would otherwise be unable to access. The advantages of PPPs for local authorities include expert know-how, financial investments and a growth in efficiency and, above all, a much improved carbon footprint. What's more, their local inhabitants benefit from stable fees and charges.

REMONDIS owns shares in around 55 joint ventures based on PPP agreements

### **A practical example – Secure jobs**

A PPP also benefits the employees as REMONDIS guarantees that there won't be any job losses and grows the workforce whenever possible. Our PPP with the City of Frankfurt is a great example of this. The number of people working at Frankfurter Entsorgungs- und Service GmbH has increased from 1,529 to 1,669 since the partnership began in 1995.

4

### **Company Partnerships – One up for environmental protection**

The highest levels of environmental protection hand in hand with safe and reliable operations – this is REMONDIS' goal when it offers its customers bespoke solutions, especially when it comes to water management. What's more, operations management and full operator models are also possible. The advantages: customers, who run their facilities in the best possible way, need fewer resources and have lower treatment costs.

5

### **Transfer of know-how – Eco-industrial parks modelled on REMONDIS' operations**

We also transfer our knowledge and experience to other countries around the world where environmental protection still plays a minor role. Just one example are the Eco-Industrial Parks that have been set up across Asia using the Lippe Plant as an example of best practice and now recycle products using eco-friendly systems. Moreover, we have also facilitated, initiated and implemented many different individual projects to promote resource conservation around the globe.

Just as is the case with global warming and resource conservation, responsibility does not stop at a country's border

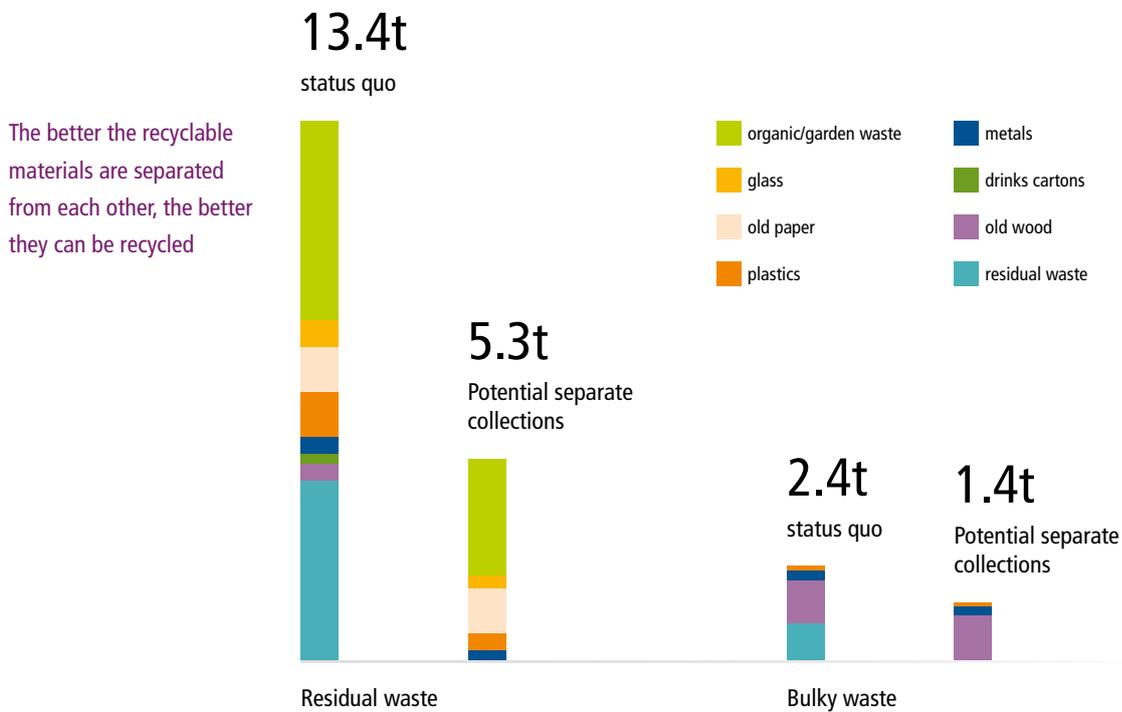
### **A practical example – Processing IBA in Singapore**

We built a facility in Singapore to recycle incinerator bottom ash (IBA) from waste incineration plants and recover the metal contents. During the project, we collaborated closely with the country's National Environment Agency (NEA). REMONDIS' philosophy here is to always work side by side with those responsible on site and get local firms on board.

**Recycling potential – Room for improvement in Germany as well**

Sustainability also involves politics and laws. Which is why REMONDIS does everything in its power to ensure the right conditions are in place to create the best possible recycling economy. Germany urgently needs a recyclables law to drive forward an effective kerbside collection of plastics, metals and packaging. So much more organic waste could be recycled as well: even though the organic waste bin must, by law, be provided in Germany, there are still many households without such a bin. Huge volumes of organic waste are ending up in the residual waste bin, making it impossible to organically recycle them.

**Recyclable material that could potentially be collected in Germany**



An additional 7.8 million tonnes of recyclables could be collected in Germany each year

The new recyclables law drafted by the politicians in Berlin merely focuses on 1.5% of residual waste, which would increase the volume of recyclables collected by just 5kg per person. According to an INFA study, the volume of additional recyclables that could potentially be collected is actually 95kg per person, i.e. 19 times higher. Based on the figures presented by INFA, REMONDIS commissioned CUTEK and Fraunhofer UMSICHT to carry out an independent study to see to what extent better recycling could cut greenhouse gas emissions. Their findings: greenhouse gas emissions would be reduced by 1.6 million tonnes a year, if the additional 95kg per person per year were collected and recycled.

What can be achieved by increasing collection rates

## 7.8m tonnes

of hidden recyclables mean

2.7m tonnes

of recycled raw materials

4.7m tonnes

of substituted primary raw materials

1.6m tonnes

fewer carbon emissions

Action also needs to be taken in the area of technology metals. The recycling rate here currently lies at a mere 1% because it still makes very little business sense to recycle such metals. Sooner or later, however, supply levels of some of these metals may become critical. What's more, many metals are, for the most part, only recycled as production waste. Once they have been installed in a product they are lost to us forever as there is a lack of collection schemes or recycling options.

REMONDIS is driving forward metal recycling – for example with a system to recover top quality aluminium

7

### Cradle to Cradle® – The purest form of recycling

Cradle to Cradle® (C2C) aims to recycle all the components of a product without any loss in quality. REMONDIS can play an important role here. C2C is being developed and implemented by the EPEA Institute. We cooperate with the EPEA to enable us to further improve our processes, technologies and services. In one of its studies, the EPEA determined that over 98% of the material processed by our organic waste recycling systems was being re-used to make top quality products and, as a result, making a valuable contribution towards achieving an integral C2C resource economy.

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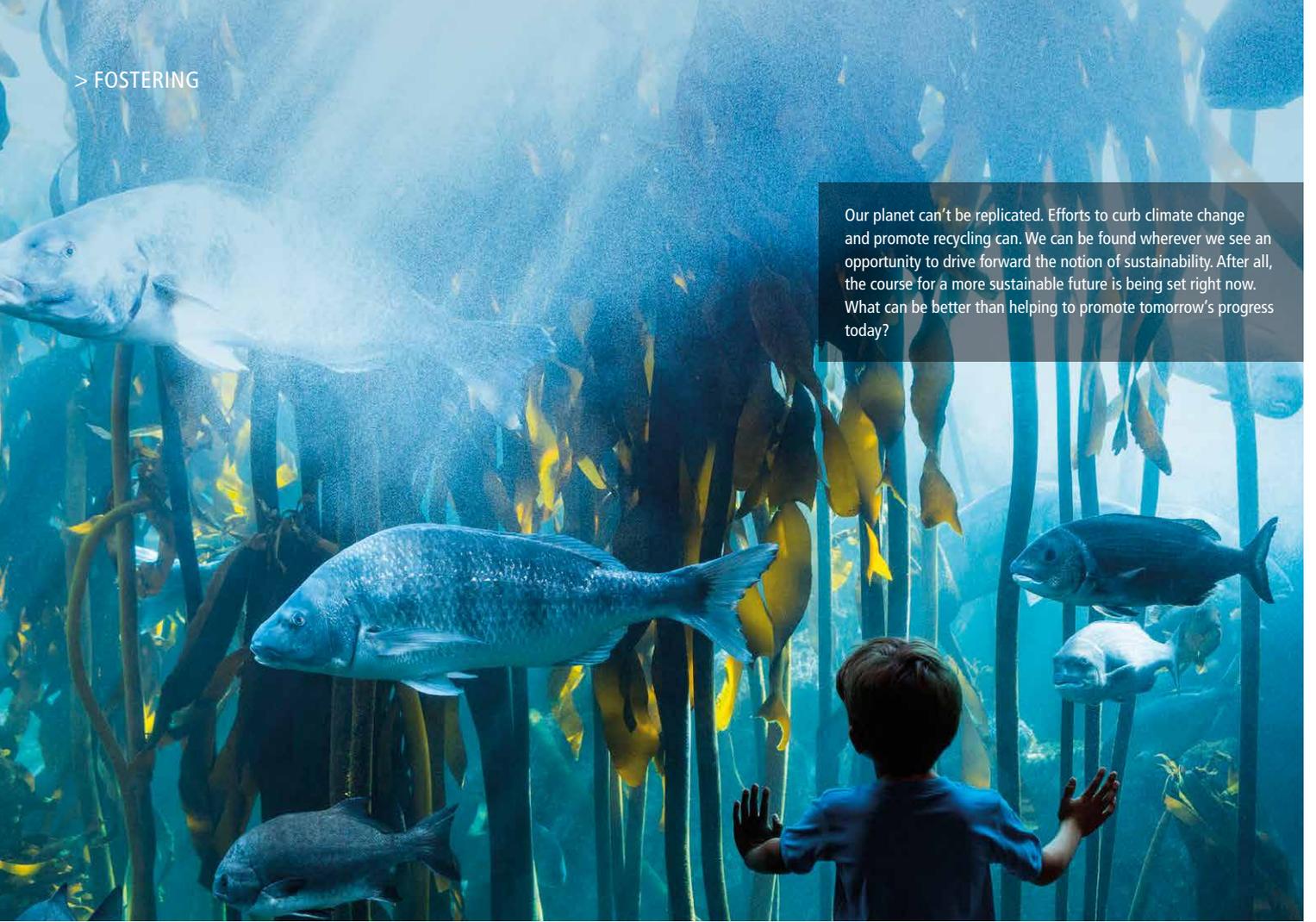
### Research – Heading down new paths

REMONDIS regularly participates in a variety of research projects to make the very most of its know-how. A pilot test with the University of Applied Sciences in Münster is looking at how composite insulation boards can be separated from each other and recycled. Our research collaboration work with the University of Rostock focuses on water processing technologies. And we have been working with the Clausthaler Umwelttechnik-Institut to see how environmentally friendly energy can be produced using a microbial fuel cell.

Further information about our cooperation work with universities can be found in the chapter, "Fostering", on page 17

### A practical example – Research project in South Africa

REMONDIS also takes part in international research projects. Just one example here is a project carrying out research work into integrated water resource management systems in the South African Middle Olifants region. The findings should then be adapted so they can be implemented in other developing countries around the world.



Our planet can't be replicated. Efforts to curb climate change and promote recycling can. We can be found wherever we see an opportunity to drive forward the notion of sustainability. After all, the course for a more sustainable future is being set right now. What can be better than helping to promote tomorrow's progress today?

## The driving force for the future

We are more than happy to share our knowledge with others. By doing so, REMONDIS is helping to ensure that topics such as conserving natural resources and preventing climate change are given the attention they deserve. This work ranges from educational measures, to providing professional advice, all the way through to motivating others to protect the environment. Why? Because the same is true for sustainability as for other areas: so much more can be achieved when people work together as a team.

1

REMONDIS also offers environment-related school projects in Russia and Poland

### THE RECYCLING PROFESSIONALS – A project that is catching on

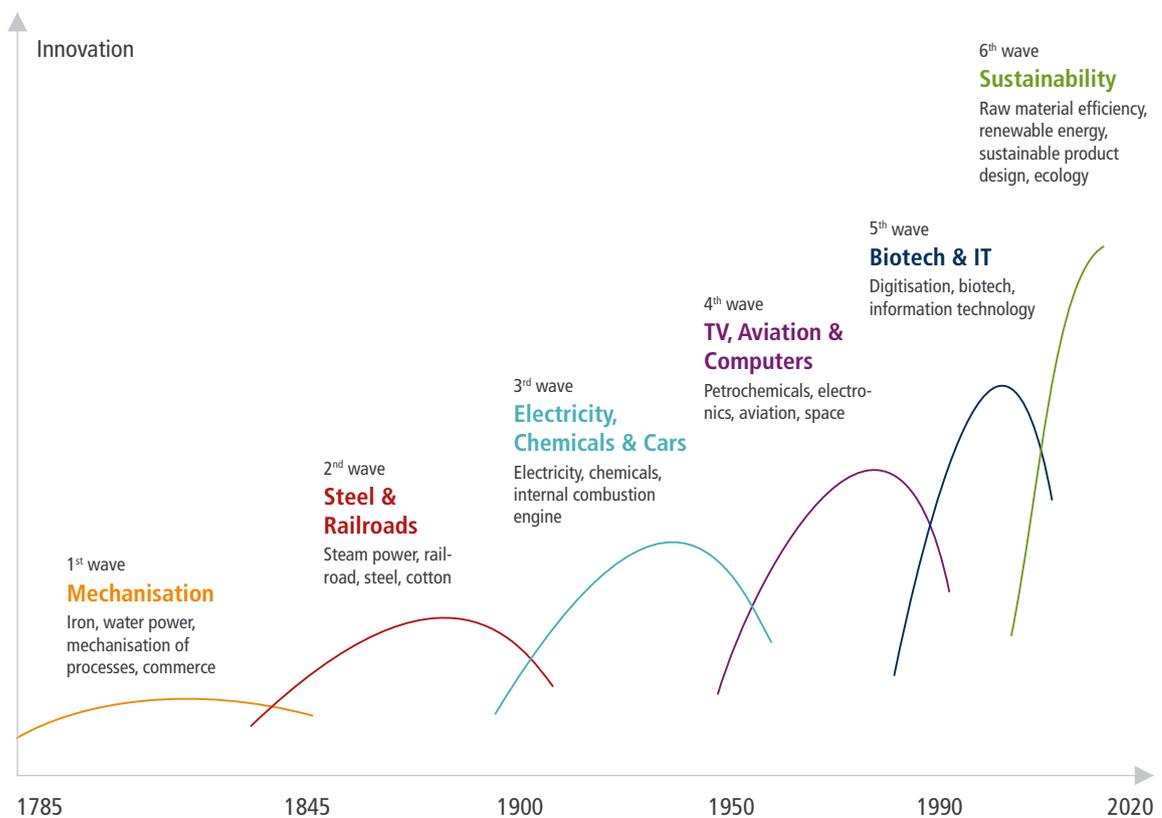
Some years ago now, REMONDIS decided to develop the first ever nationwide educational project to focus entirely on recycling and on conserving natural resources: THE RECYCLING PROFESSIONALS. The project, created with the help of teaching specialists, is aimed at children and teenagers aged between 5 and 15. It provides teaching material for kindergartens, primary schools and secondary schools as well as modular, interactive theatre performances. The goal here is to make the youngsters more aware of the importance of protecting our environment and show them how they can act responsibly. In 2015, THE RECYCLING PROFESSIONALS took part in the Kids Climate Conference – as a partner of the event and as the organiser of two creative workshops. The 'RECYCLING PROFESSIONALS' project has already won a number of awards. For more information, go to page 19.

### Teaching & training – Promoting and sharing knowledge

REMONDIS helps to deepen and share sustainability know-how by funding professorships and supporting institutes. For example, we collaborate with the Technical University of Cottbus-Senftenberg in the German state of Brandenburg and the University of Rostock. An endowed professorship and corresponding Institute of Public Sector Economy and Public Private Partnerships were financed at the University of Bremerhaven.

Further information about our research activities with different universities can be found in the chapter, "Inspiring" on page 15

### The waves of innovation from the 18th to the 21st Century



The global efforts being made towards greater sustainability is creating a wave of innovation that also needs the backing of scientists. Supporting teaching and training measures is very important here

### A practical example – Collaboration with the University of Rostock

REMONDIS' subsidiary, EURAWASSER Nord, has been working together with the University of Rostock since 1994. The focus here is on research work and promoting young talent in the water sector. EURAWASSER has been supporting the university with an endowed professorship – helping it to prepare environmental engineers for their future tasks. In addition, we have been supporting the University's Campus of Excellence since 2010.

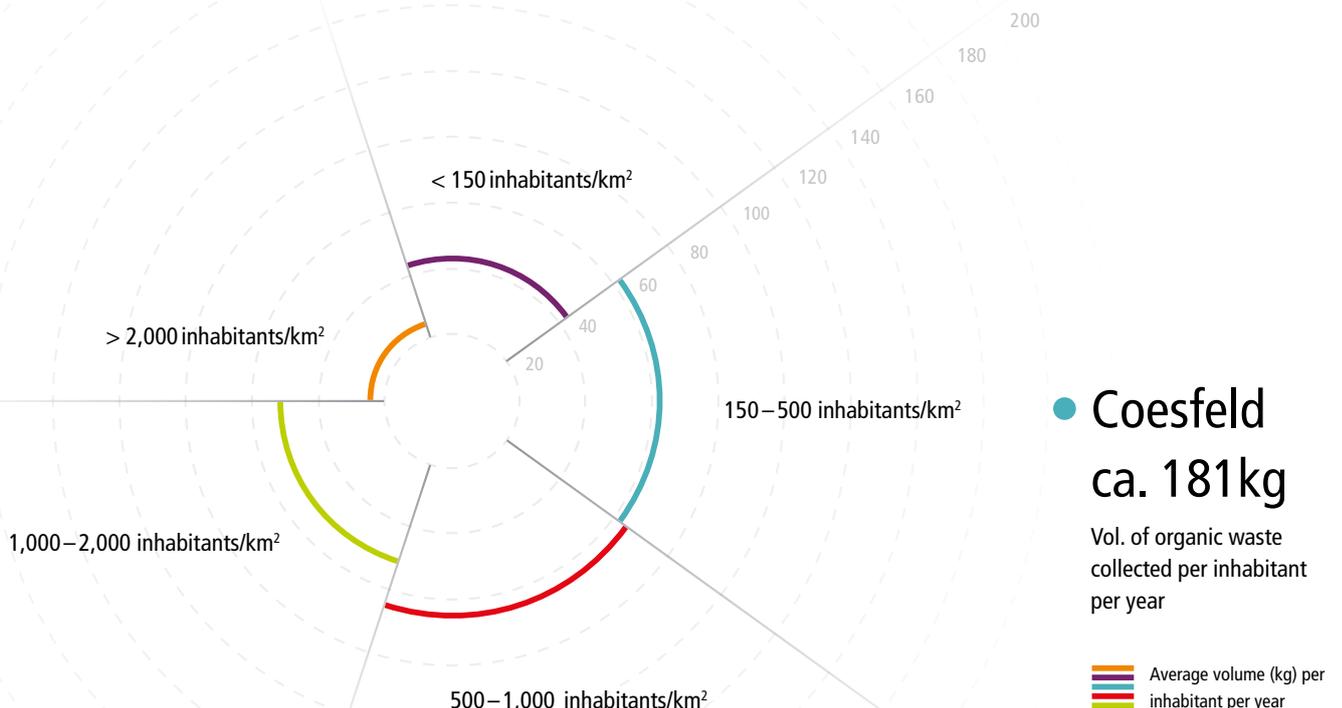
**Advice – Bringing expertise to the table**

REMONDIS advises the Federal government, helping them, for example, to compile guidelines on recycling e-waste or providing them with support as they draw up the new recyclables law. Moreover, we work in the Resources Commission at the Federal Environment Agency (KRU), whose aim is to turn the spotlight on resource conservation in both Germany and the EU. What’s more, REMONDIS has also showed its support for KlimaExpo.NRW, an initiative of the state government of North Rhine-Westphalia (NRW), by calling on others in its industry to join it in setting up ‘Klimaschutz durch Kreislaufwirtschaft e. V.’ [Recycling to prevent climate change]. The aim here is to have the recycling sector draw up and implement measures to protect the environment and prevent climate change. Last but by no means least, our employees play an active role in many different associations and organisations. This includes a seat on the advisory board of the VDI Center for Resource Efficiency, a centre that helps businesses to optimise the way they use their material and energy resources.

**Nature conservation – REMONDIS and NABU**

Resource conservation and recycling are two ways of protecting our environment and conserving nature. Which is why REMONDIS is an official partner of NABU [German Nature and Biodiversity Conservation Union]. The focus of our work with NABU is on protecting our moors and preventing climate change. We show our support here by sponsoring NABU as well as by promoting the recycling of kitchen and garden waste – something that involves both technological and socio-political components. Moreover, REMONDIS founded the “Resource Conservation Alliance” [Allianz Ressourcenschonung] with NABU and other firms in 2012. Its goal is to convince business leaders and politicians of the need for a more resource-friendly economy and for suitable policies to be put in place to promote this.

**Organic waste in Germany – the volumes collected from local inhabitants each year**



### A practical example – Recycling organic waste in Coesfeld

REMONDIS has been calling on those responsible to make better use of the biowaste produced across the country. This includes providing every household in Germany with a separate bin for organic waste as well as using state-of-the-art systems to generate biogas. A showcase project here can be found in the District of Coesfeld. The high volumes of organic waste collected in the district and the systematic use of the biowaste are helping to cut carbon emissions by up to 5,000 tonnes every year.

### Awards – Recognition at national and state level

We regularly receive awards for our efforts to promote sustainability. REMONDIS has, for example, been named one of the Top 3 most sustainable large corporations in Germany by the jury responsible for selecting the winners of German Sustainability Award [Deutscher Nachhaltigkeitspreis] three times now. In 2016, REMONDIS' TetraPhos® made it to the no. 1 slot in the 'Recycling & Resources' category of the GreenTec Awards, Europe's biggest environmental technology prize. And the Federal government's Council for Sustainable Development [Rat für Nachhaltige Entwicklung] awarded our RECYCLING PROFESSIONALS project the quality label "Werkstatt N Projekt 2016" [Workshop N Project 2016] in the same year.

[Find out more about REMONDIS' TetraPhos® process in the chapter, "Acting", on page 6](#)

A total of four REMONDIS projects have been officially named "engines for progress" and added to KlimaExpo.NRW's list of reference projects that help curb global warming: our organic waste recycling facility in the District of Coesfeld, the recycling activities at our plant in Lünen, our educational project, THE RECYCLING PROFESSIONALS, and our waste treatment plant in Erftstadt. KlimaExpo.NRW is an initiative launched by the state government of North Rhine-Westphalia. It aims to ensure that the energy transition, the measures taken to curb climate change and any changes that have to be made as a result of global warming all act as key driving forces for economic and social development.

[Learn more about our RECYCLING PROFESSIONALS project on page 16](#)

### A practical example – Awards for customers

Our customers also receive awards, for example, the Steigenberger Hotel am Kanzleramt in Berlin. It was presented with the 'Meeting Experts Green Award' in the 'Sustainable Events' category in recognition of its "Green Meeting by Steigenberger" concept. This concept is unique in the hotel trade and includes full carbon compensation. One of the fundamental components of the "Green Meeting by Steigenberger" is the recycling concept developed by REMONDIS.



Some topics are so important that you can never find out enough about them. This is certainly true when it comes to the scarcity of raw materials and sustainability. Which is why this section contains important information about both these subjects that includes both background knowledge and details on the general framework conditions

## A global challenge covering a whole host of issues

Rio de Janeiro, June 1992: the UN Conference on Environment and Development brought the subject of sustainability to the attention of the public for the very first time. It decided that carbon emissions around the world needed to be reduced. Quite a bit of progress has been made since then. There is, however, still a lot to be done if this global issue is to make its way into all national structures around the world.

1

In 2015, almost 190 nations agreed to concrete resolutions at the UN Climate Change Conference in Paris to achieve the 2°C target

### The fundamentals – Curbing global warming & conserving natural resources

Many years ago, a concrete goal was decided on in order to prevent climate change: to slow down global warming and ensure it does not exceed the threshold of a 2°C increase on pre-industrial levels. A goal that can only be achieved if all nations truly pull together. Global carbon emissions must have been reduced to 2.5 tonnes per capita per year by 2050. There is still a long way to go – for Germany, too, where carbon emissions lie at 10.2 tonnes per person per year. At the same time, it is all about not consuming more resources than our planet is able to replenish, than can be regenerated or than can be made available again. This is the only way to ensure there are sufficient raw materials in the future. Recycling and sustainability are very closely connected here.

### Sustainable development strategies – Indicators to measure progress

A large number of individual steps need to be taken to tackle the social, economic and environmental challenges and create a sustainable future. Milestones and benchmarks have been fixed and defined to ensure these steps are undertaken – at global level as well as at EU and national level. In Germany, for example, the Federal government worked together with the Federal Council for Sustainable Development [Rat für Nachhaltige Entwicklung] to compile its "Perspectives for Germany". Published in 2002, this sustainable development strategy defined 21 goals and indicators; this number has risen to around 40 over the years. The EU's sustainable development strategy has a list of over 100 indicators to determine how much progress has been made, including 'climate change & energy', 'natural resources' and 'global partnerships'. At global level, the Rio+20 UN Conference compiled a catalogue of 17 Sustainable Development Goals (SDGs). These SDGs were officially passed at the UN General Assembly in New York in September 2015.

The aim of the SDGs, which have been actively pursued since January 2016, is to get the global community working together to tackle the whole issue of sustainable development

### SDGs – An agenda for a better world

Basically, the SDGs unite two areas: supporting developing countries on the one hand and protecting the environment and preventing climate change on the other. Preferably, all these goals should have been achieved by 2030. Individual goals – such as closing material life cycles and minimising air, water and soil pollution – should even be reached by 2020.

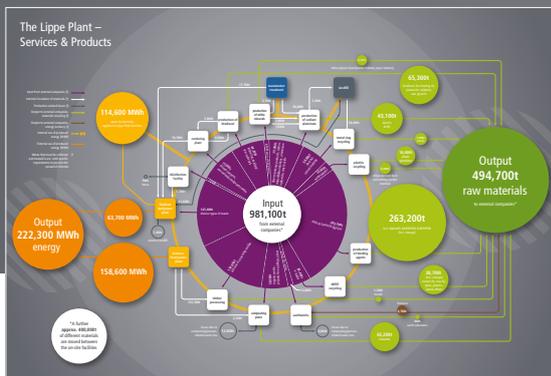
### Scarcity of raw materials – Preventing imminent shortages

The shortage of raw materials and the conservation of our planet's natural resources are closely linked to consumer behaviour. The world's more affluent societies are, in particular, to blame for the fact that supplies of some raw materials are gradually being used up. A number of different aspects need to be taken into account to come to an accurate assessment of whether raw materials are in danger of becoming scarce or not. Besides the static lifetime and recyclability of the raw materials, their economic importance and substitutability must be looked at as well as supply risks such as trade restrictions, unstable mining regions and the regional concentration of raw material reserves.

Learn more about the future availability of our most important raw materials in the chart on page 30

### A practical example – Recycling helps combat the scarcity of raw materials

Indium is one of the raw materials that has been classified as critical. The Clausthal Institute of Environmental Technology has calculated that indium reserves will have been used up by 2028. There will, therefore, be a shortage of this metal in just a few years' time. At first glance, the same would appear to be true for copper. The reserves of copper, that can be viably mined today, will have run out by 2054. And yet copper has not be classified as critical as there are very good recycling systems in place. The current global recycling rate of 20% is likely to rise considerably in the future. Copper recycling rates in Germany already lie at 45%.



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INFOGRAPHIC  
The Lippe Plant – Services & Products

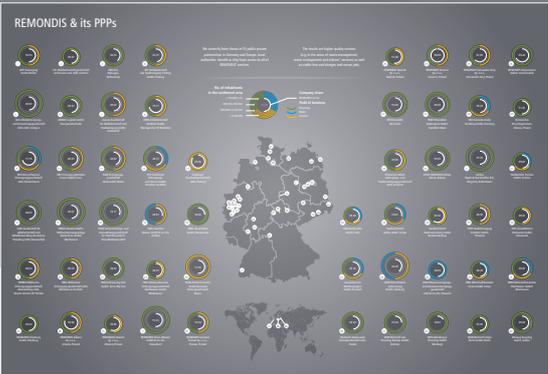


26

INFOGRAPHIC  
REMONDIS' global network of plants and facilities

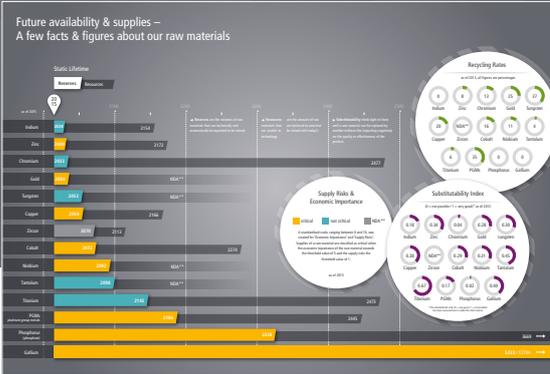
# Sustainability: a few facts & figures

There are so many different facets to sustainability and sustainable development – and this is especially true for our company where we work to conserve our planet’s natural resources and curb global warming every single day. We are constantly developing new recycling systems, extending our network of plants and facilities and driving forward the notion of sustainability. The following charts provide a summary of the most important facts and figures – to give you a quick overview of what’s what. Besides being able to find information about REMONDIS, you can also read about the future availability of a number of raw materials. This chart certainly underlines just how important it is to use intensive recycling measures to counteract the shortage of raw materials.



28

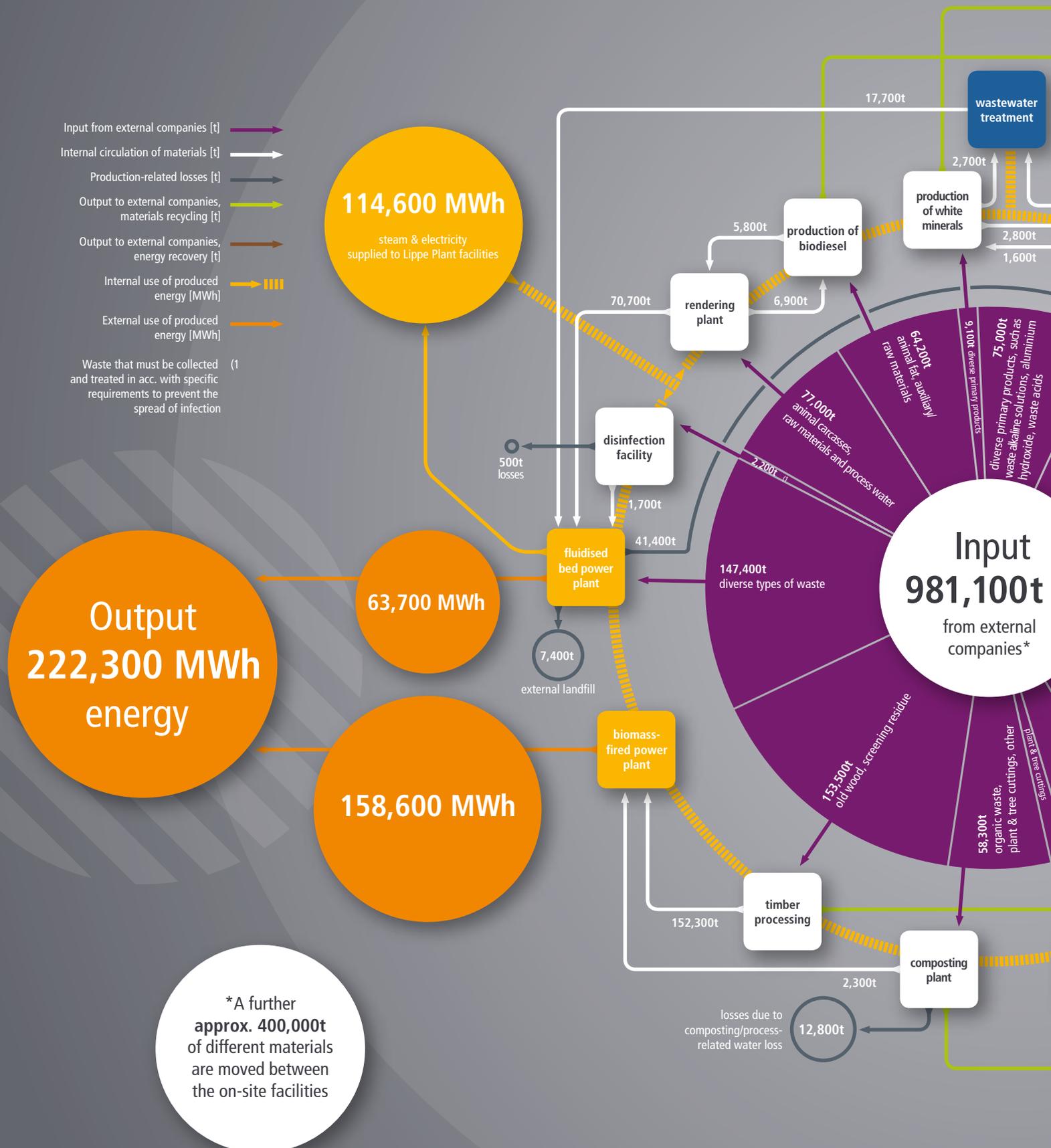
INFOGRAPHIC  
REMONDIS & its PPPs



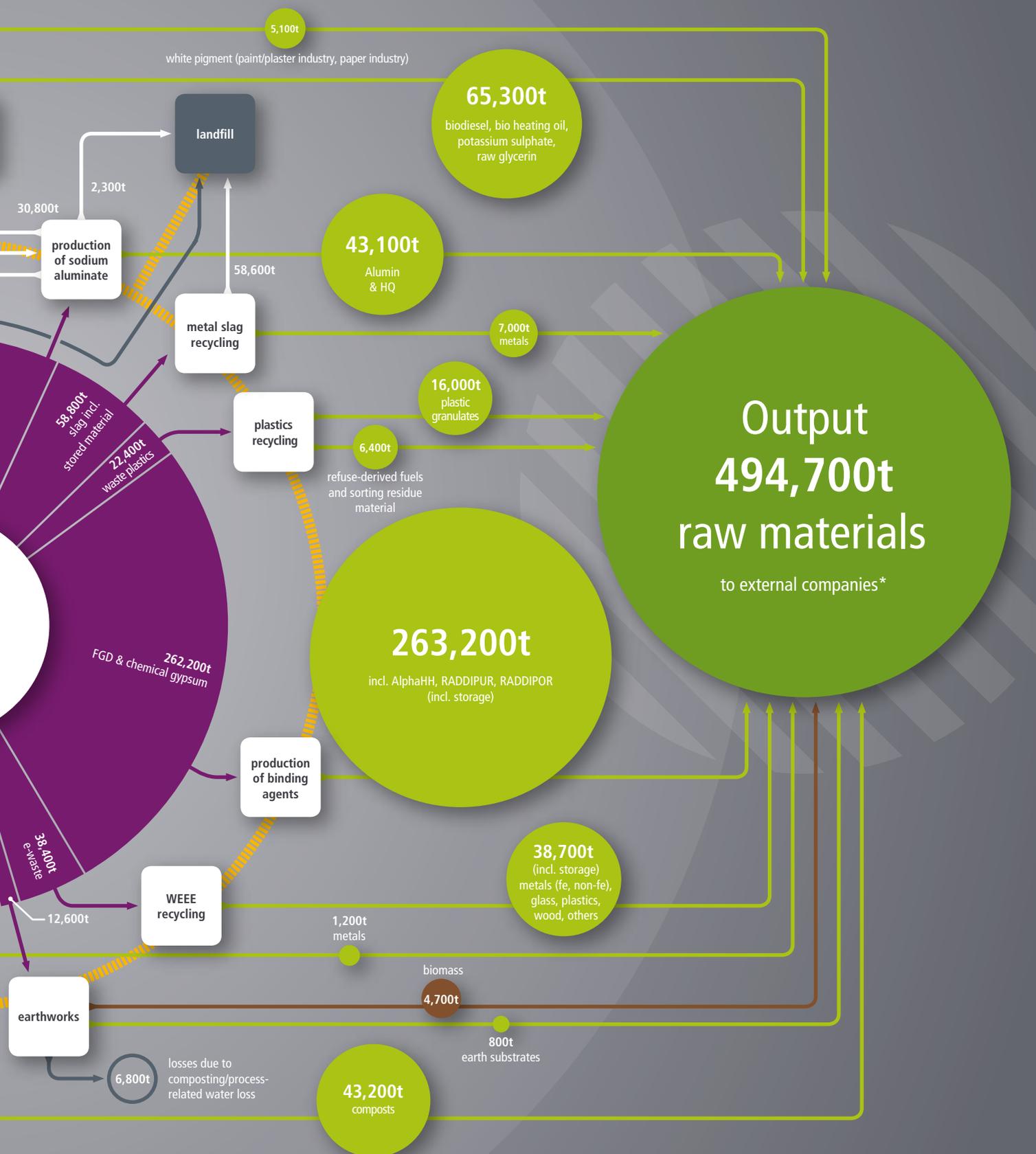
30

INFOGRAPHIC  
Future availability & supplies – A few facts & figures about our raw materials

# The Lippe Plant – Services & Products



\*A further approx. 400,000t of different materials are moved between the on-site facilities



# REMONDIS' recycling plants worldwide

200

sewage treatment plants

12

hazardous waste processing plants

100

drinking water processing plants

63

scrap metal processing facilities

3 hazardous waste incineration plants

2 solvent recovery facilities

1 biomass-fired power plant

# 3

52  
composting plants

35  
construction waste  
processing plants

23  
landfills

23  
biogas plants

17  
wood processing  
facilities

14  
sorting plants for light  
packaging & recyclables

14  
paper sorting  
facilities

13  
residual waste  
processing facilities,  
mechanical/biological

12  
glass  
processing  
facilities

10  
landfill gas  
plants

10  
commer-  
cial waste  
processing  
facilities

10  
thermal  
waste  
treatment  
plants

8  
photo-  
graphic  
chemical  
treatment  
facilities

7  
gypsum production  
plants

7  
WEEE dismantling  
centres

7  
plastics  
processing  
facilities

6  
RDF production  
plants

1 chemicals  
treatment facility

1 RDF power plant

1 sewage sludge  
incineration plant

1 metal slag  
processing facility

1 white mineral  
production plant

# REMONDIS & its PPPs

We currently have shares in 55 public private partnerships in Germany and Europe. Local authorities benefit as they have access to all of REMONDIS' services.



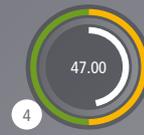
AHE Entsorgung GmbH, Wetter



AJL Abfallwirtschaftsgesellschaft Jerichower Land mbH, Genthin



ARN B.V., Nijmegen, Netherlands



ASF Abfallwirtschaft und Stadtreinigung Freiburg GmbH, Freiburg



AVG Abfallentsorgungs- und Verwertungsgesellschaft Köln mbH, Cologne



AWIGO Logistik GmbH, Georgsmarienhütte



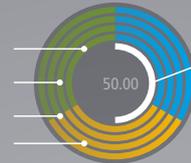
Awista Gesellschaft für Abfallwirtschaft und Stadtreinigung GmbH, Düsseldorf



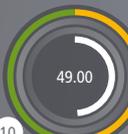
AWN Abfallwirtschaft Nordharz GmbH, Wernigerode/OT Reddeber

No. of inhabitants in the catchment area

< 100,000 / n/s  
100,000–500,000  
500,000–1,000,000  
> 1,000,000



BEG Bremerhavener Entsorgungsgesellschaft mbH, Bremerhaven



EBE Entsorgungsbetriebe Essen GmbH, Essen



EGM Entsorgungsgesellschaft Mainz mbH, Mainz



FES Frankfurter Entsorgungs- und Service GmbH, Frankfurt am Main



Freiberger Eisenbahngesellschaft mbH, Freiberg



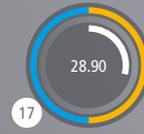
GAB Gesellschaft für Abfallwirtschaft und Abfallbehandlung des Kreises Pinneberg mbH, Kummerfeld



GMVA Gemeinschafts-Müllverbrennungsanlage Niederrhein GmbH, Oberhausen



KDM Kompostierungs- und Vermarktungsgesellschaft für Stadt Düsseldorf/ Kreis Mettmann mbH



LWG Lausitzer Wasser GmbH & Co. KG, Cottbus



MBA Neumünster GmbH, Neumünster



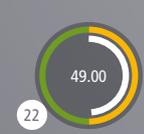
MEBRA Märkische Entsorgungsgesellschaft Brandenburg mbH, Kloster Lehnin/OT Prützke



MEG Mülheimer Entsorgungsgesellschaft mbH, Mülheim an der Ruhr



Müllverbrennung Kiel GmbH & Co. KG, Kiel



NEG Niederschlesische Entsorgungsgesellschaft Weißwasser GmbH, Weißwasser



NIAG Niederrheinische Verkehrsbetriebe Aktiengesellschaft, Moers



REMONDIS Eilenburg GmbH, Eilenburg



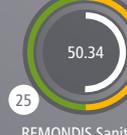
REMONDIS Gliwice Sp. z o.o., Gliwice, Poland



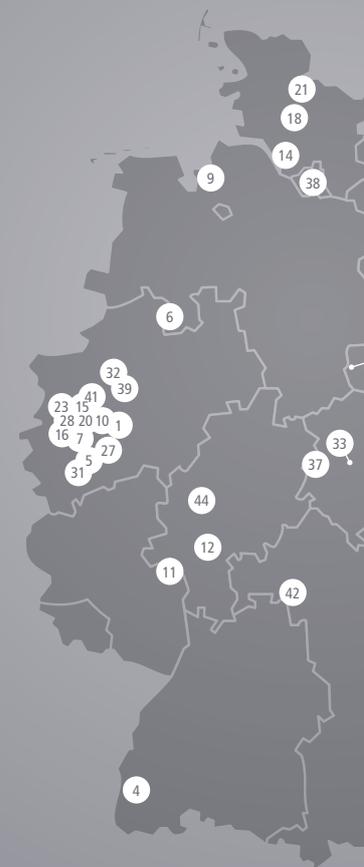
REMONDIS Otwock Sp. z o.o., Otwock, Poland



REMONDIS Rhein-Wupper GmbH & Co. KG, Düsseldorf



REMONDIS Sanitech Poznan Sp. z o.o., Poznan, Poland



The results are higher quality services (e.g. in the areas of waste management, water management and citizens' services) as well as stable fees and charges and secure jobs.

**Company share**

REMUNDIS (in %)

**Field of business**



25 REMUNDIS Swidnik Sp. z o.o., Swidnik, Poland



25 REMUNDIS Szczecin Sp. z o.o., Szczecin, Poland



25 REMUNDIS Tarnowskie Gory Sp. z o.o., Tarnowskie Gory, Poland



26 REMUNDIS Vorpommern GmbH, Ueckermunde



27 REVEA GmbH, Burscheid



12 RMB Rhein-Main Biokompost GmbH, Frankfurt/Main



28 SBD Servicebetriebe Duisburg GmbH, Duisburg



25 Schlesisches Recyclingzentrum, Gliwice, Poland



29 Schweriner Abfallentsorgungs- und StraBereinigungsgesellschaft mbH, Schwerin



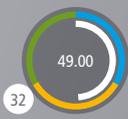
30 SOOO REMUNDIS Minsk, Minsk, Belarus



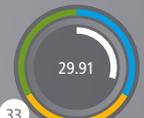
3 Sortiva Papier & Kunststoffen B.V., Wognum, Netherlands



31 Stadtbetrieb Frechen GmbH, Frechen



32 Stadtwerke Selm GmbH, Selm



33 Stadtwirtschaft Gotha GmbH, Gotha



34 Stadtwirtschaft Neubrandenburg GmbH, Neubrandenburg



35 STEP Stadtentsorgung Potsdam GmbH, Potsdam



36 UDS Umweltdienst Sömmerda GmbH, Sömmerda



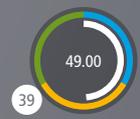
37 Umweltservice Wartburgregion GmbH, Eisenach



38 VERA Klärschlammverbrennung GmbH, Hamburg



29 WAG Wasserversorgungs- und Abwasserentsorgungsgesellschaft mbH & Co. KG, Schwerin



39 WBL Wirtschaftsbetriebe Lünen GmbH, Lünen



15 WBO Wirtschaftsbetriebe Oberhausen GmbH, Oberhausen



40 Weißeritz Humuswerk Besitzgesellschaft mbH, Freital



41 WRB Wertstoff und Recycling Bottrop GmbH, Bottrop



42 WRG Würzburger Recycling GmbH, Würzburg



43 WUB Wertstoff-Union Berlin GmbH, Berlin



44 ZR Zaugg Recycling GmbH, Gießen

# Future availability & supplies – A few facts & figures about our raw materials

## Static Lifetime

Reserves

Resources

2015

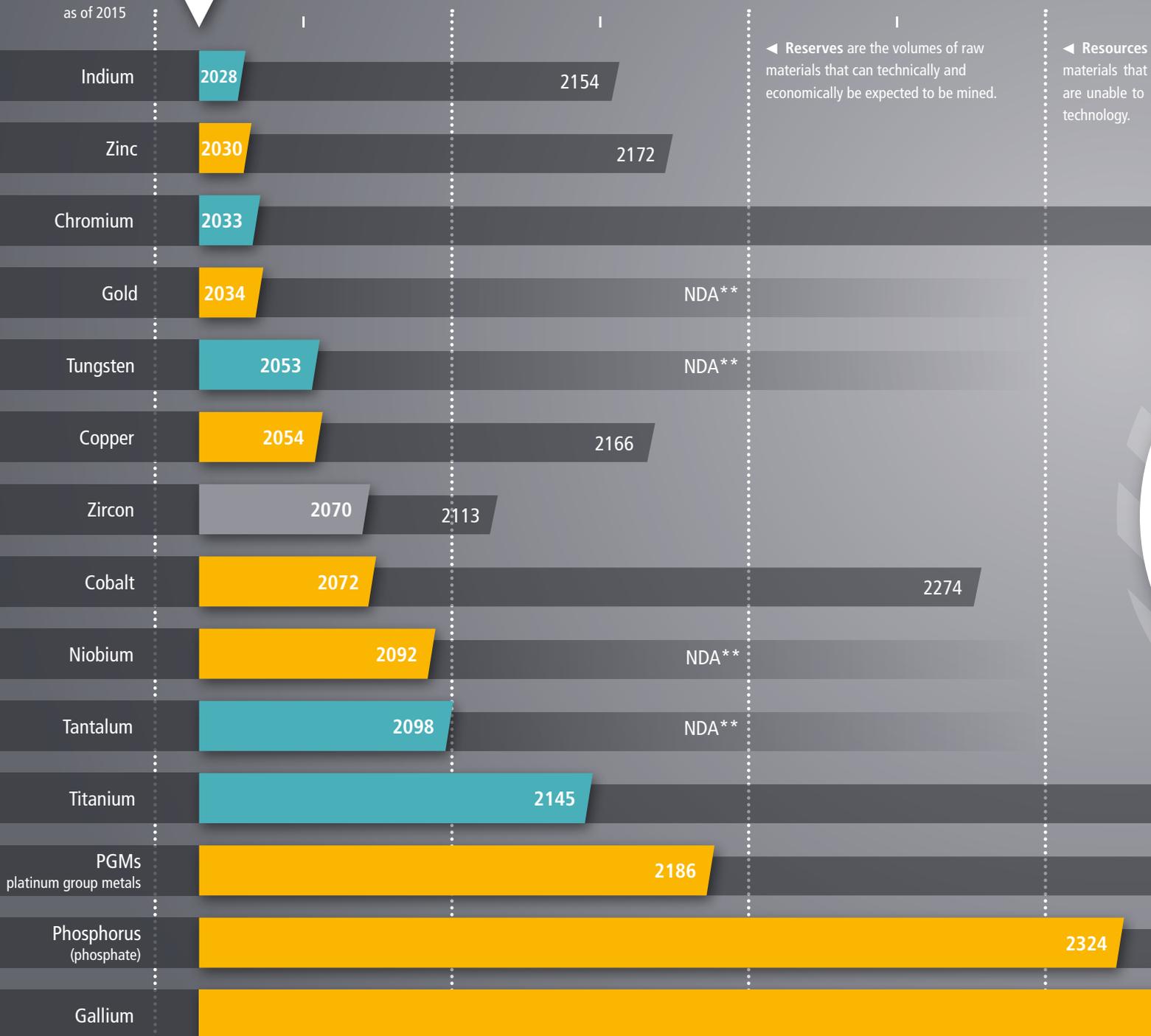
2100

2200

2300

◀ Reserves are the volumes of raw materials that can technically and economically be expected to be mined.

◀ Resources materials that are unable to technology.



2400

2500

are the amount of raw  
are believed to exist but  
be mined with today's

► **Substitutability** sheds light on how well a raw material can be replaced by another without this impacting negatively on the quality or effectiveness of the product.

2477

## Supply Risks & Economic Importance

critical not critical NDA\*\*

A standardised scale, ranging between 0 and 10, was created for 'Economic Importance' and 'Supply Risks'. Supplies of a raw material are classified as critical when the economic importance of the raw material exceeds the threshold value of 5 and the supply risks the threshold value of 1.

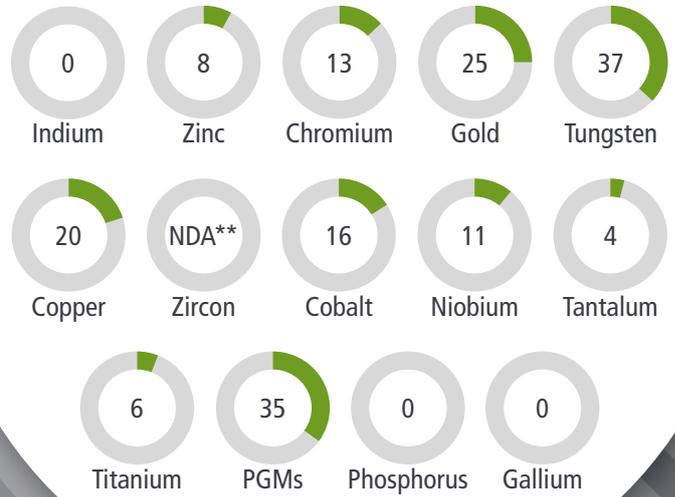
as of 2015

2473

2445

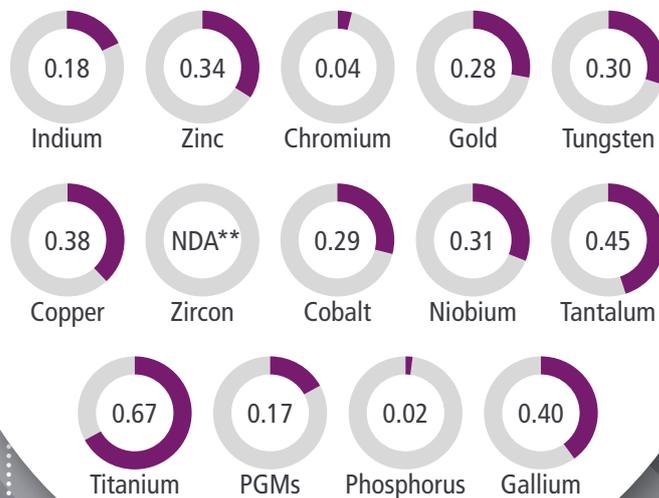
## Recycling Rates

as of 2013, all figures are percentages



## Substitutability Index

(0 = not possible / 1 = very good)\* as of 2013



\* The standardised scale (0 = very good, 1 = not possible) has been reversed here to make the chart clearer.

3669 →

5233 / 12704 →



WORKING FOR THE FUTURE

REMONDIS is one of the world's largest recycling, service and water companies. The company group has branches and associated businesses in more than 30 countries across Europe, Africa, Asia and Australia. With over 30,000 employees, the group serves around 30 million people as well as many thousands of companies. The highest levels of quality. Working for the future.

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