umicore
materials for a better life

Elements for success

Annual report 2016

About this report

Our 2016 Annual report consists of the following documents, which can be downloaded in pdf format:

2016 ANNUAL REVIEW
The report tells Umicore's story of the year. It explains who we are and what we do, the context in which we operate, including the risks and opportunities, and outlines our strategy and the progress we have made towards achieving our goals.

2016 GOVERNANCE AND STATEMENTS
The report covers Umicore's approach to corporate governance. It also includes financial results for the year as well as detailed environmental and social performance data for the group.

WEB-BASED REPORT
To access the full web-based report please visit our dedicated reporting centre via the link below.

The report is externally verified and has been prepared in accordance with the GRI Standards: Core option.

Find the full GRI Index online.
Click here to see a full glossary of terms.

CLICK HERE FOR THE ONLINE ANNUAL REPORT

2016 Annual review

As a materials technology and recycling group, we exist to create shared value – for shareholders, employees, business partners, the environment, for you. In recent years, we have shaped our business in response to important global trends, and we have set Umicore on a path to growth. Our unique closed-loop business model is at the heart of our approach. Combined with our materials know-how this gives us a clear competitive edge. Today, we have all the right elements in the right place. So, we are all set for success and are always looking for new ways to create enduring value.

CASE STUDY

Umicore expands to meet the clean mobility challenge

ONE OF UMICORE'S HORIZON 2020 GOALS IS TO BE A CLEAR LEADER IN CLEAN MOBILITY MATERIALS. THIS MEANS KEEPING UP WITH THE RAPID ADOPTION OF ELECTRIFIED VEHICLES (EVS). THERE ARE 2 MILLION EVS ON THE ROAD TODAY. THIS NUMBER IS EXPECTED TO INCREASE EXPONENTIALLY IN THE COMING YEARS

CLICK HERE TO READ MORE ONLINE

CASE STUDY

JUMPing across borders

AS A GLOBAL COMPANY, UMICORE SEEKS TO BROADEN THE INTERNATIONAL EXPERIENCE OF ITS EMPLOYEES TO FOSTER DIVERSE THINKING AND BRING FRESH PERSPECTIVES INTO THE ORGANISATION

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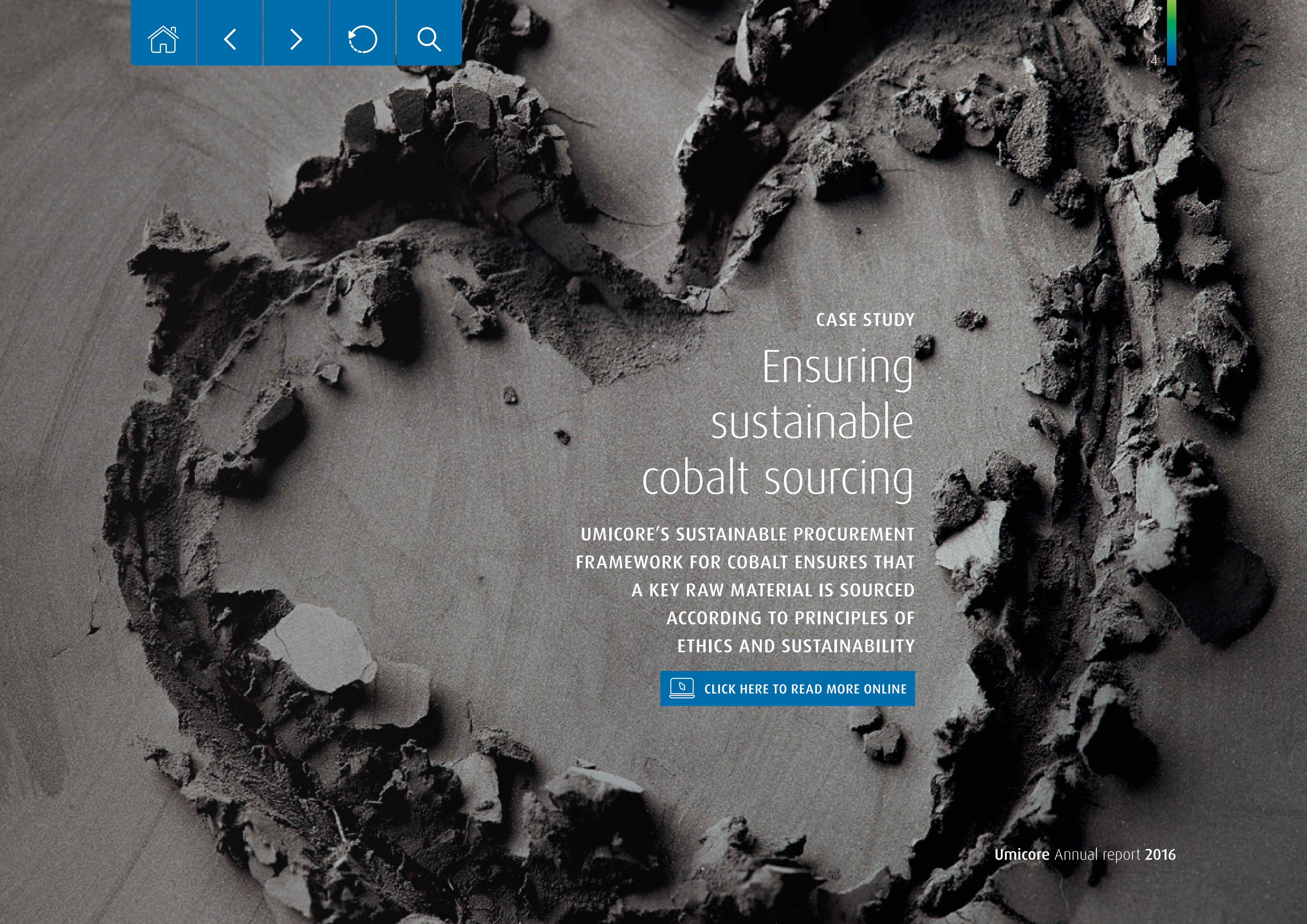

CASE STUDY

Ensuring sustainable cobalt sourcing

UMICORE'S SUSTAINABLE PROCUREMENT FRAMEWORK FOR COBALT ENSURES THAT A KEY RAW MATERIAL IS SOURCED ACCORDING TO PRINCIPLES OF ETHICS AND SUSTAINABILITY

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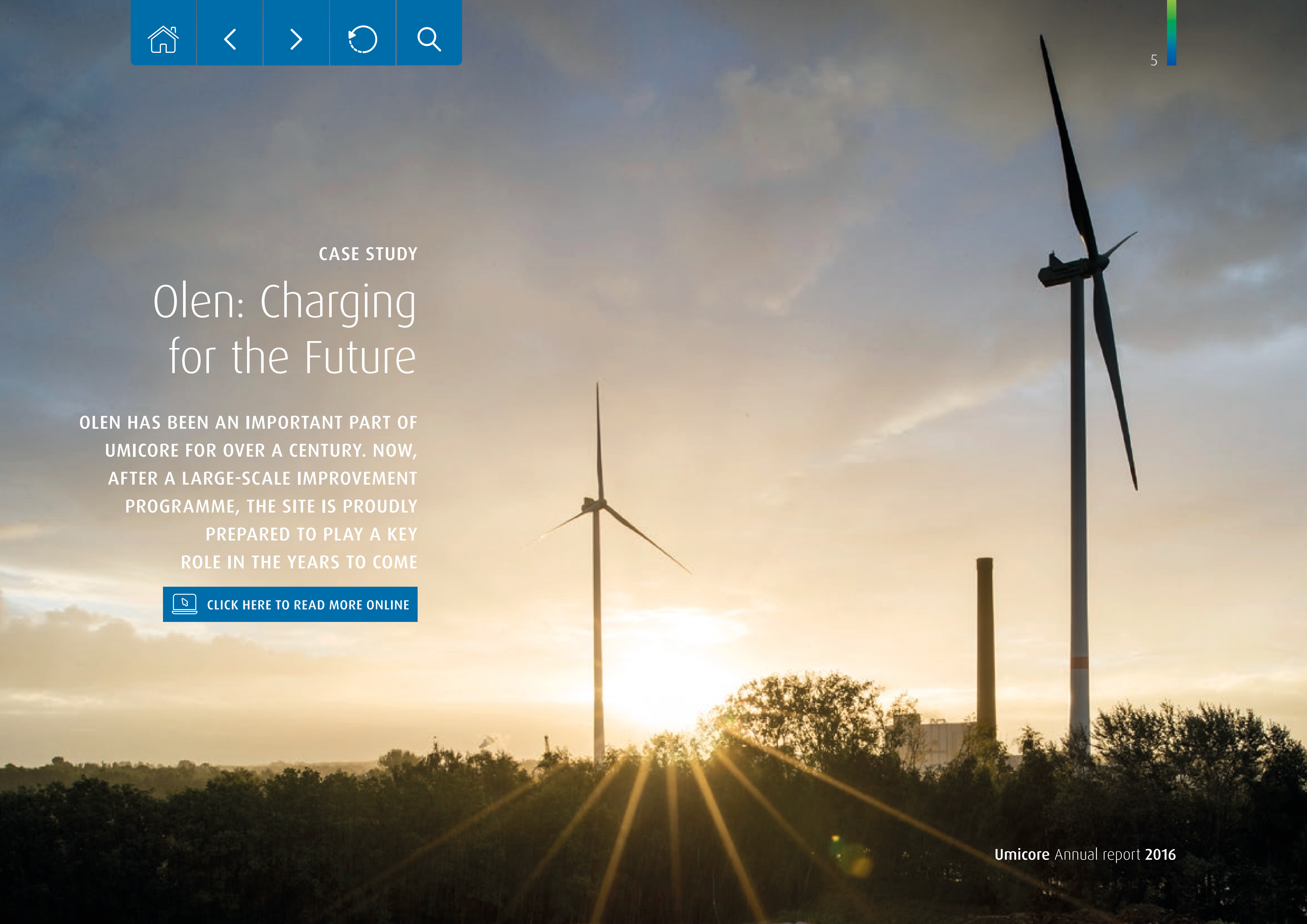


CASE STUDY

Olen: Charging for the Future

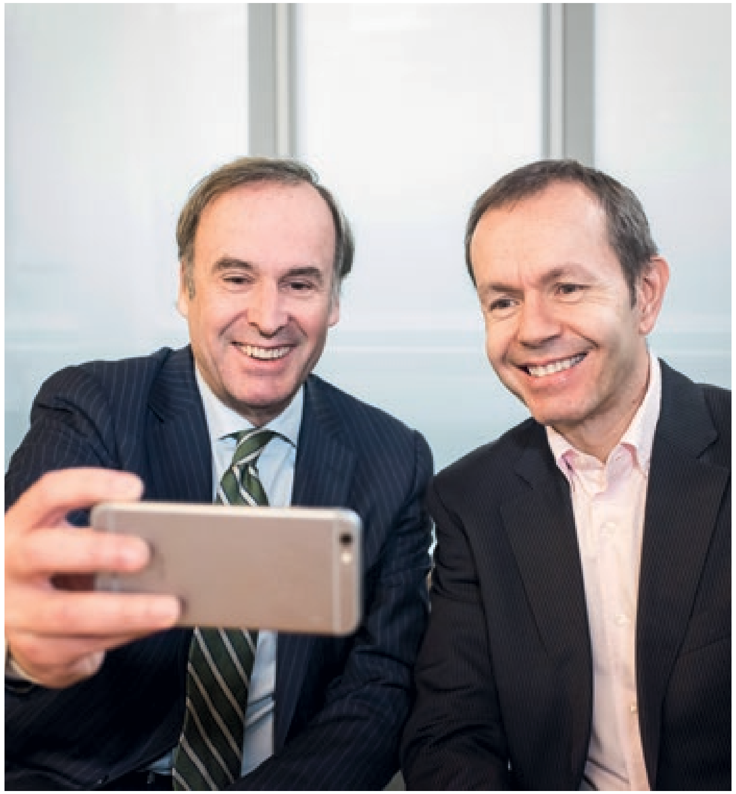
OLEN HAS BEEN AN IMPORTANT PART OF UMICORE FOR OVER A CENTURY. NOW, AFTER A LARGE-SCALE IMPROVEMENT PROGRAMME, THE SITE IS PROUDLY PREPARED TO PLAY A KEY ROLE IN THE YEARS TO COME

CLICK HERE TO READ MORE ONLINE

CEO & Chairman's review

MARC GRYNBERG AND THOMAS LEYSEN LOOK BACK ON 2016 AND TAKE STOCK OF THE ELEMENTS THAT ARE IN PLACE TO ENSURE FUTURE SUCCESS

MARC GRYNBERG CEO
& **THOMAS LEYSEN** CHAIRMAN



We published our first integrated report back in 2006. In doing so, Umicore was part of the pioneering first wave of companies to publish detailed economic, environmental and social performance data. We refined the approach in 2011 and this 2016 report marks a new step in our reporting journey. We have focused on the most material elements that drive our business and have sought to provide a more comprehensive overview of Umicore's business model and how we create value and manage our impacts along the value chain. We have also aligned the reporting framework with the latest recommendations of the Global Reporting Initiative. We hope you find the report clear and informative.

In 2015 we launched our strategic plan Horizon 2020 which aims at making Umicore a clear leader in clean mobility materials and recycling, doubling the earnings of the company while rebalancing the contribution from the three business groups and turning our leadership in sustainability into a greater competitive edge. This report outlines the clear progress that we made in 2016 towards these goals.

In spite of lower metal prices, we were able to grow recurring EBIT by 6% to EUR 351 million. This positive economic performance reflected good volume and margin growth in most product businesses and was only tempered by the continued impact of anaemic metal prices on recycling and refining activities. The return on capital employed for Umicore in 2016 was 14.6%. This represents a good progression from the level of 2015 and is just shy of the 15% threshold that we have set ourselves for value creation over the long term.

In terms of contribution by business group, Catalysis was a top performer, with earnings growing by more than 20%. Automotive Catalysts outgrew the market in volume and value terms in most regions and the combination of a strong product mix and scale effects resulted in substantial margin improvements. Energy & Surface Technologies also performed strongly, and we benefited from a steep acceleration in demand for our NMC cathode materials. The market for electrified vehicles – both for passenger cars and for public transportation – is taking off in a way few of us could have imagined not so long ago. Revenues and recurring EBIT for Recycling were down year on year with lower metal prices being the key factor.

GROUP FINANCIAL HIGHLIGHTS

REVENUES

€ 2,667m

RECURRING EBIT

€ 351m

R&D EXPENDITURE

5.8%

of revenues

CAPEX

€ 287m

We continued to invest substantially in the strategic growth areas related to clean mobility and recycling. This was reflected in the 2016 capital expenditure levels that were well up on the levels of 2015. The increase was most pronounced in the Rechargeable Battery Materials business unit as a result of its project to triple capacity by the end of 2018 and the acquisition of an important intellectual property portfolio that will support the business unit's growth in the coming years. Investments in the Catalysis and Recycling business groups were somewhat lower following the completion of a wave of expansions that include the capacity increase in Hoboken and new production and technology infrastructure in the Automotive Catalysts business unit. These investments will deliver positive scale effects to Umicore in the coming years.

Non-recurring charges in 2016 were higher than they have been in recent years and one of the main reasons for the increase was the EUR 69 million fine imposed by the French competition authority for an alleged abuse of a dominant market position in our Building Products activities in France. While we were obviously disappointed and frustrated that our arguments did not prevail in the initial ruling, we are forcefully appealing the decision in French courts of justice. The patent case in the United States brought by BASF and Argonne National Laboratory relating to certain cathode materials also led to an unfortunate and disappointing ruling at the end of the year, which is, however, subject to appeal.

In 2016, we brought added focus to our portfolio of activities. The most important step in this regard was the sale of the Zinc Chemicals activities to OpenGate Capital in November. In many ways the finalisation of the sale was an emotional moment as it represented the exit from Umicore of a business that had roots going right back to the origins of our company over 200 years ago. That said, it was the right decision for both the business unit and Umicore and we are now turning our efforts towards finding a new home for the Building Products business unit and looking at various strategic options for the Technical Materials and Thin Film Products business units.

Our cash flows and capital structure remained strong in 2016, ensuring a solid basis for future growth. With this in mind, the Board of Directors has proposed an 8% increase in the gross dividend and this will be presented to the shareholders for approval at the Ordinary General Meeting in April.

When we launched the Horizon 2020 strategy in 2015, we outlined our continued pursuit of non-negotiable sustainability goals such as zero accidents in the workplace. We also stated our desire to build on the achievements of prior years and derive a greater competitive edge from our efforts on the social and environmental front. In 2016 the progress has been mixed.

GROUP NON-FINANCIAL HIGHLIGHTS

ECO-EFFICIENCY

7%

improvement in energy consumption vs 2015 benchmark

SAFETY

59

accidents in 2016 vs 47 in 2015

PEOPLE ENGAGEMENT

4.1%

of voluntary leavers in 2016

In spite of the widespread safety initiatives and continued excellence in safety performance at most of our operations, we recorded 59 lost time accidents as a group during the year. This compares to 47 accidents in 2015 and is the third consecutive year that we have recorded an increase. A fatal incident also occurred in our operations in Manaus, Brazil, and while this was ascribed to human error, it brought home all too clearly the need for further improvements in our safety culture. Reversing the trend in 2017 will be a top priority. In terms of occupational health – and allowing for the first-time inclusion of indium biomonitoring results – the total level of excess readings increased slightly in 2016. One of the main reasons was the increased number of excess readings in cobalt biomonitoring in one of our new facilities. Programmes are in place to reduce exposure to metals in all operations where there is an occupational health risk.

On the environmental front, we made good progress on further enhancing the energy efficiency of our operations with more than 35 initiatives around Umicore and an efficiency improvement of 7% in 2016. In terms of metal emissions, our aim in the context of Horizon 2020 is to build on the breakthrough we made between 2011 and 2015. In this sense it was encouraging that the impact of emissions to air was reduced by more than a quarter during the year as a result of further investments in air filtering and process efficiency. At the Hoboken plant we initiated a number of improvement actions following a temporary spike in lead dust emissions at the end of 2015. This will require further investments in 2017.

Our efforts to be considered a great place to work gave rise to some exciting initiatives to enable Umicore to benefit more from diversity within the organisation. We also put into place a number of initiatives that will enable us to face up to the challenges inherent in a rapidly expanding business, especially when much of Umicore's growth is taking place in Asia which has a highly fluid and competitive labour market.

In terms of Umicore's impact along the value chain we further enhanced our sustainable sourcing approach. In 2016 we obtained third party assurance that our cobalt purchases adhere to our Sustainable Procurement Framework for cobalt. This met with a positive response from our customers and also from customers of theirs such as major automotive and electronic brands. It is a great example of a distinctive approach to ethical and sustainable practice that has the potential to become a real competitive advantage for Umicore.

The past year has shown clear evidence that the three megatrends that drive the growth of our business are becoming more pronounced. The need for cleaner air has never been greater, the adoption of electrified transportation has started to accelerate and resource scarcity continues to be a pressing concern, particularly for those metals that are essential for cleaner mobility and new communications technologies. The evolution of these trends and the demand patterns that we are seeing from our customers give us confidence that 2017 will see a further acceleration of our key growth initiatives.

"The past year has shown clear evidence that the three megatrends that drive the growth of our business are becoming more pronounced."

This said, the global geo-political environment remains volatile and is more so today than when we wrote to you one year ago. This unpredictable backdrop reinforces the need for us to remain agile and even more focused in the way we pursue our strategic goals.

We would like to take this opportunity to extend our thanks and appreciation to all our stakeholders for their contribution to our success over the course of 2016. We are looking forward to making further progress in 2017. We firmly believe that all the elements are in place to ensure shared success for customers, employees, shareholders, suppliers and other business partners alike.

MARC GRYNBERG CEO
& THOMAS LEYSEN CHAIRMAN

UMICORE AT A GLANCE

Enabling a more sustainable world

WE ARE A GLOBAL GROUP FOCUSED ON MATERIALS TECHNOLOGY AND RECYCLING. OUR WORK HELPS IMPROVE AIR QUALITY, MAKE ELECTRIFIED TRANSPORT POSSIBLE AND TACKLE RESOURCE SCARCITY

REVENUES

€ 2,667m

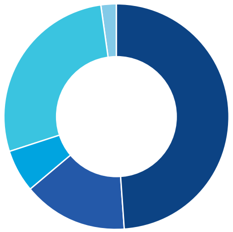
R&D EXPENDITURE

5.8%
of revenues

RECURRING EBIT

€ 351m

REVENUES BY GEOGRAPHY



- 49% EUROPE
- 15% NORTH AMERICA
- 6% SOUTH AMERICA
- 28% ASIA-PACIFIC
- 2% AFRICA

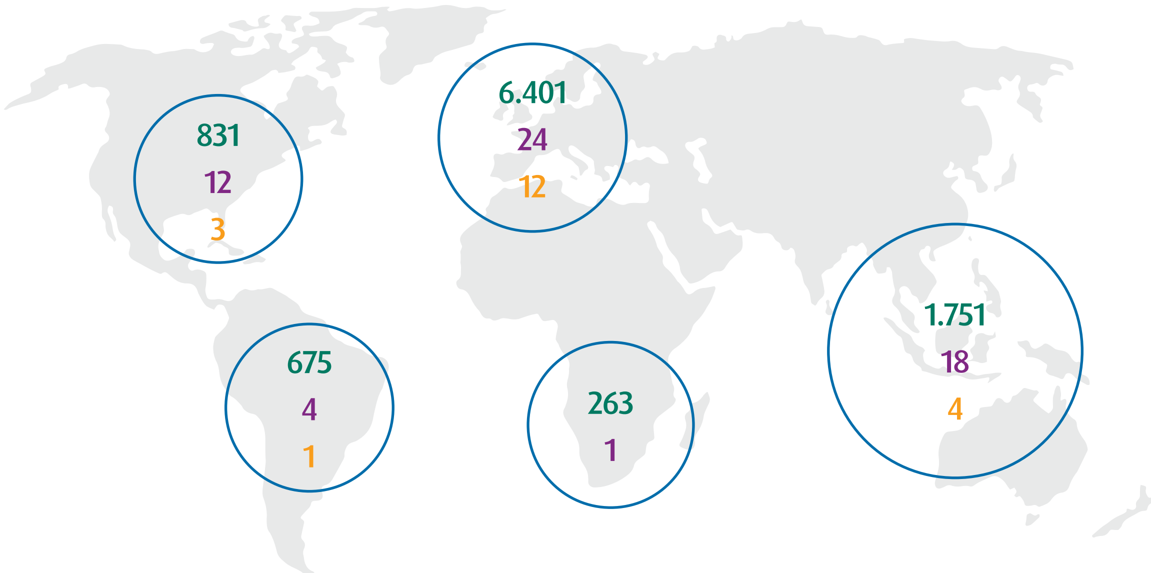
RESOURCE EFFICIENCY

- 45% PRIMARY MATERIALS
- 41% SECONDARY MATERIALS
- 14% END-OF-LIFE MATERIALS

COLLEAGUES
9,921

INDUSTRIAL SITES
59

R&D | TECHNICAL CENTRES
20



Three complementary business groups

OUR THREE BUSINESS GROUPS ADDRESS SPECIFIC CUSTOMER NEEDS. TOGETHER, THEY COMPLEMENT EACH OTHER, SHARING KNOWLEDGE AND EXPERTISE

BUSINESS GROUP	MAIN INDUSTRIES SERVED	MAIN END USES	KEY ACHIEVEMENTS	KEY FIGURES
CATALYSIS Umicore provides automotive catalysts for gasoline and diesel light duty vehicles as well as for heavy duty diesel applications including trucks and off-road vehicles. The business group also produces precious metals based compounds and catalysts for use in the pharmaceutical and fine chemicals industries respectively.	Automotive, chemicals	Emission control for light and heavy duty vehicles, catalysts for life science and chemicals, pharmaceutical ingredients for cancer treatment	- Earnings growth of 23% - Automotive catalysts production plant in Poland fully ramped-up for the European market - Opening of the expanded vehicle emission test laboratory in Auburn Hills, Michigan	REVENUES € 1,163m RECURRING EBIT € 152m COLLEAGUES 2,464
ENERGY & SURFACE TECHNOLOGIES Umicore's products are found in applications used in the production and storage of clean energy as well as in a range of applications for surface technologies that bring specific properties and functionalities to end products. All of the activities offer a closed loop service for their customers.	Electronics, automotive, rechargeable batteries, aerospace	Portable electronics, electrified vehicles, photovoltaics, semiconductors, machining and drilling tools, tires, fibre optics, LED, flat screens	- Earnings growth of 16% - EUR 160 million capacity expansion program announced for NMC cathode materials in China and Korea - Successful launch of the Sustainable Procurement Framework for cobalt	REVENUES € 610m RECURRING EBIT € 82m COLLEAGUES 2,357
RECYCLING Umicore treats complex waste streams containing precious and other speciality metals. The operations can recover some 20 of these metals from a wide range of input materials ranging from industrial residues to end-of-life materials. Other activities include production of precious metals based materials that are essential for applications as diverse as high-tech glass production, electrics and electronics.	Non-ferrous metals mining and refining, automotive, electronics, energy, chemicals, optics and displays, precious metals	Jewellery, high-quality glass, investment bars, power distribution, heating, ventilation and cooling installations, nitric acid production	- ROCE of 26% - Completion of capacity increase investments in Hoboken, Belgium - Continued conflict free smelter certification of all Umicore smelters for gold	REVENUES € 641m RECURRING EBIT € 125m COLLEAGUES 3,170

Taking on the big challenges

WE WANT TO MAKE A DIFFERENCE. SO OUR BUSINESS MODEL AND HORIZON 2020 STRATEGY ARE FOCUSED ON SOME OF THE WORLD'S MOST PRESSING ISSUES

CLEAN AIR

Regulation has gradually led to a reduction in air pollution in many countries and regions over the past 30 years. However, much more needs to be done and there are still major challenges to human health from poor air quality.

WHAT'S THE POTENTIAL IMPACT?

Combustion engines produce toxic emissions such as nitrogen oxides, hydrocarbons and particulate matter, making road transport a major source of air pollution. According to recent data analysis by the World Bank published in 2016, air pollution is the fourth deadliest health risk worldwide, triggering one in 10 premature deaths. A 2016 Unicef study reveals that around 300 million children currently live in areas where the air is toxic – exceeding international limits by at least six times.

WHAT IS UMICORE'S CONTRIBUTION?

We are one of the world's leading producers of catalysts and catalytic filters used in emission abatement systems for light-duty and heavy-duty vehicles as well as off-road equipment. Catalysts and particulate filters convert the pollutants emitted during the combustion of fossil fuel into harmless gases and trap the particulate matter thereby enabling our customers to meet present and future environmental standards.

WHAT'S THE STORY IN 2016?

Worldwide automotive emission legislation keeps on getting tightened with specificities in the different countries and regions. In Europe, for example, the Euro 6 norm entered into force on 1 September 2015, further reducing the permitted level of NO_x for diesel cars. In China, the National VI emissions standard, originally scheduled to be introduced around 2020, will cover major cities from the beginning 2017. It is equivalent to the Euro 6 standards.

2016 was noteworthy for the attention given to diesel emissions in the wake of the 'dieselgate' scandal. This centred on the significant differences in several cases between laboratory tests and real driving emissions. In this context new legislation was enacted that will lead to the enforcement of new test procedures measuring real driving emissions on the road. This will have an impact on the design of the overall emission control system and more stringent technical demands on catalysts and catalytic filters.

UN SUSTAINABLE DEVELOPMENT GOALS:

The need for clean air is also highlighted in specific targets in the United Nations Sustainable Development Goals.

Taking on the big challenges

VEHICLE ELECTRIFICATION

Worldwide, the transport sector causes 14% of all greenhouse gas emissions due to human activities and this is still growing. Electrified mobility will play a key role in reducing CO_2 emissions, improving air quality and reducing dependence on fossil fuels.

WHAT'S THE POTENTIAL IMPACT?

Vehicle emissions are contributing to an increased concentration of gases that lead to climate change, mainly via CO_2 emissions. Furthermore, the transport sector is the fastest growing source of greenhouse gases, and of the total from transport, over 85% are due to CO_2 emissions from road vehicles.

WHAT IS UMICORE'S CONTRIBUTION?

Umicore is one of the world's leading producers of cathode materials for lithium ion batteries. Cathode materials are key in determining the power and energy density of rechargeable batteries, and hence the driving range in the case of electrified vehicles. Umicore's nickel-manganese-cobalt (NMC) cathode materials are a reference in the industry. In 2016, we announced a massive investment programme to increase production capacity at our plants in Korea and China to keep pace with customer demand.

WHAT'S THE STORY IN 2016?

2016 has seen an acceleration of the trend towards electrified vehicles. There are two millions electrified vehicles on the road today. This number is expected to increase exponentially in the coming years.

Several countries and regions have announced ambitious emission reduction targets for vehicles. In Europe, EU legislation requires fleet average to be achieved by all new cars of 95 grams of CO_2 per kilometre by 2021. The European Strategy for Low-Emission Mobility adopted in July 2016 aims to upscale the use of low emission alternative energy for transport and facilitate a move towards zero-emission vehicles (full electric cars and fuel cell vehicles). Several countries have introduced incentives for electric vehicles (e.g. Germany, the Netherlands, Norway). China's booming electric car and bus sales continued in 2016, making it the main market worldwide. The world's rechargeable battery manufacturers – most of which are based in China, Korea and Japan – expanded capacity through 2016.

UN SUSTAINABLE DEVELOPMENT GOALS:

The United Nations Sustainable Development Goals include targets related to the transition to a lower carbon mobility mainly in goals 11 and 13.

Taking on the big challenges

RESOURCE SCARCITY

Trends such as continued population growth, urbanisation and more affluent lifestyles are driving ever-higher demand for resources. This poses the question – how will we meet future demand?

WHAT'S THE POTENTIAL IMPACT?

Population growth, urbanisation and growing affluence in developing economies will lead to increased demand for most metals. Demand for specialty and precious metals will also be driven by the development of technologies such as rechargeable batteries that aim to reduce society's environmental impacts. Availability of these metals is becoming tighter. Easy to mine deposits are becoming increasingly scarce and ore bodies less and less rich. Furthermore, many specialty metals that are required for new, environmentally friendly technologies are only produced as a by-product of other metals. Mining metals from primary sources also has environmental impacts including a high CO_2 footprint per tonne of recovered metal.

WHAT IS UMICORE'S CONTRIBUTION?

Umicore's facility in Hoboken is the world's largest and most complex precious metals recycling operation, processing more than 200 different types of raw materials and recovering more than 20 different metals. These raw materials range from mining and industrial residues to end-of-life materials such as electronic scrap and spent rechargeable batteries. Treating complex materials from these above ground sources will become more and more important and Umicore is increasing its capacity to cater for growing demand. Most of Umicore's other business units also have the capability to recycle residues from customers as part of its closed-loop business model.

Umicore's recycling capabilities also offer increased security of access to resources and also offer benefits from an environmental and ethical sourcing perspective.

WHAT'S THE STORY IN 2016?

Interest in the concept of a 'circular economy' strengthened further in 2016. The United Nations Sustainable Development Goals gained traction in 2016. The goals include specific reference to the sustainable management and efficient use of natural resources. At the same time, the European Commission presented a new circular economy package mapping out a series of legislative proposals on waste, containing targets for landfill, reuse and recycling, to be met by 2030.

UN SUSTAINABLE DEVELOPMENT GOALS:

These two goals are more specifically touching on the topics of sustainable management and efficient use of natural resources.

Creating a competitive advantage

WE BELIEVE THE CIRCULAR USE OF RESOURCES IS ESSENTIAL FOR SUSTAINABLE GROWTH. OUR BUSINESS MODEL CENTRES ON A SHIFT AWAY FROM A LINEAR 'TAKE, MAKE, WASTE' ECONOMY

WHAT WE NEED

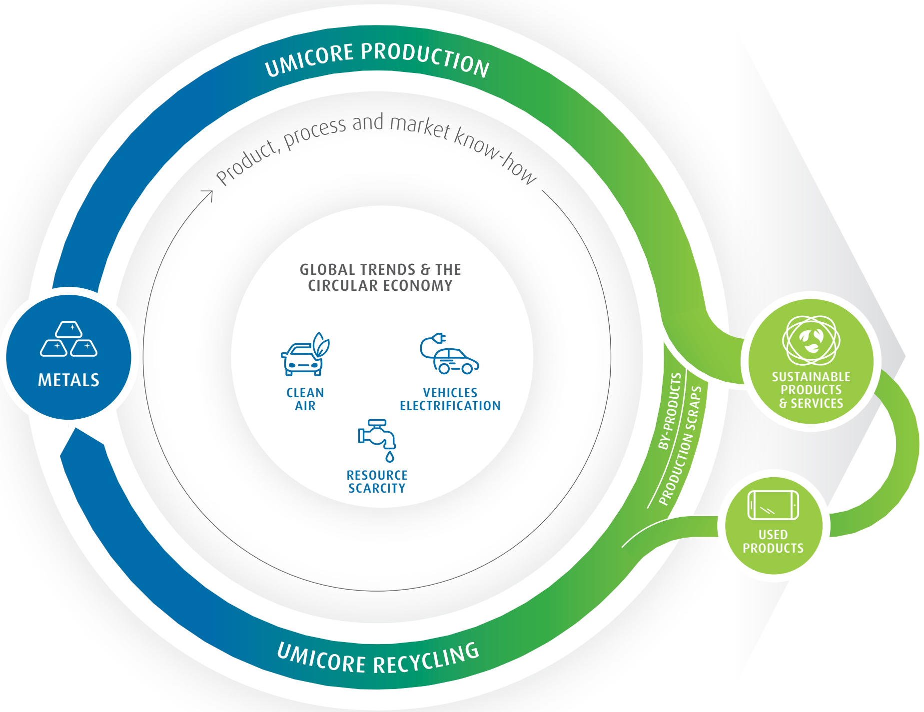
There are some critical resources and relationships we need in order to run an effective and sustainable business.

- Metal containing raw materials
- Energy and auxiliary materials
- Skills and expertise
- Investment and funding

WHAT WE DO & HOW WE DO IT

We produce and recycle metal-related materials. Our closed loop operational model ensures that we extract the valuable metals from industrial residues and end-of-life materials enabling them to be reused.

We combine our competences in metallurgy, chemistry and materials science with a thorough understanding of our customers' needs. The Umicore Way outlines our values, our commitment to the principles of sustainable development and the way in which we wish to achieve our business goals. We aim for a high degree of focus and to simplify the way we do things. This supports us in realizing our ambitions.



THE CONTRIBUTION WE MAKE

Our integrated approach to business means we believe in delivering value for all stakeholders.

- Enhanced quality of life through all of our products
- High quality employment
- Shareholder returns
- Societal contribution

READ MORE ABOUT RESOURCES & RELATIONSHIPS ON PAGE 16

READ MORE ABOUT OUR PRODUCTS & SERVICES ON PAGE 17

READ MORE ABOUT THE VALUE WE CREATE ON PAGE 18

Managing resources and relationships

MANY FACTORS – FROM RAW MATERIALS SUPPLY TO THE RETENTION OF TALENT – COULD AFFECT OUR ABILITY TO DO BUSINESS. WE MANAGE THESE RESOURCES AND RELATIONSHIPS IN A RESPONSIBLE AND ETHICAL WAY

METAL-CONTAINING MATERIALS

Umicore's activities are focused on products and services that have precious and specialty metals at their heart. Umicore's closed loop business model ensures that a high proportion of our metal requirements come from recycled sources – both from our customers' production residues, residues from other industries and from end-of-life materials. Metals have a unique characteristic: they can be recycled infinitely without losing any of their chemical or physical properties. This creates an outstanding ingredient for sustainable materials and one of the foundations of our business model. Overall, we can recover some 28 metals from these closed-loop activities, of which 20 in the Recycling business group alone. The remainder of our metal requirements must come from primary sources. Umicore enters into a mix of long-term and shorter-term procurement arrangements for such critical raw materials and we seek to ensure that the materials that we buy come from sustainable and ethical sources through the deployment of our Sustainable Procurement Charter and/or procurement frameworks specific to certain metals where necessary.

ENERGY AND AUXILIARY MATERIALS

In order for our operations to function we also use input materials such as fuels and chemicals. We purchase these using the framework of the Sustainable Procurement Charter. In most of the countries where we operate and, given the specific nature of many of our operations, there is limited choice in terms of the source of energy that we can use. For this reason, Umicore's main focus in terms of energy is to maximise the energy efficiency of our own operations.

SKILLS AND EXPERTISE

Umicore operates in some 60 industrial sites and in several offices and research centres, located in 25 countries. For Umicore to be successful we need to be able to attract talented people to work for us in positions that range from production operators and engineers to research scientists, commercial and administrative functions. In turn, our colleagues contribute to the success of the company through their expertise and commitment. Metallurgy, chemistry, engineering and materials science know-how are critically important in our key growth areas of recycling and materials for clean mobility. In future years we anticipate that much of our growth will take place in Asia and this will mean a greater focus on attracting talent in this region.

INVESTMENT AND FUNDING

Umicore needs funding in order for us to be able to fulfil our mission of producing materials for a better life and executing our strategy. Through a number of economic cycles, Umicore has a proven track record of funding strategic growth initiatives from the cash generated from our own operations. Indebtedness is generally kept at low levels with the company aiming to retain the equivalent of an investment grade credit status.

Delivering industry-leading solutions

WE HARNESS OUR KNOWLEDGE OF METALLURGY, CHEMISTRY AND MATERIALS SCIENCE TO DELIVER PRODUCTS AND SERVICES THAT ENHANCE PEOPLE'S LIVES

UMICORE OPERATIONS

Umicore's operations are carried out in some 60 production sites ranging from large scale recycling plants to production facilities developing specialised materials and chemicals.

Umicore's recycling operations are of two distinct types: the precious metals recycling operation in Hoboken, Belgium, is built around complexity. It uses a very complex process to recycle and refine the most complex materials and to recover a broad spectrum of metals. Umicore's other recycling operations are carried out in close collaboration with customers and seek to recover one or two metals from production residues.

Umicore facilities that produce materials and products tend to be located close to the customers. We develop specialized materials in close collaboration with customers and to very specific requirements.

Umicore aims for excellence in environmental and social performance at all its operations. We seek, for example, to minimize the impact of metal emissions and to generate improved material and energy efficiency. We also strive to achieve a safe and healthy work place. Operational excellence is not only important in securing our license to operate, it also helps to make Umicore more competitive.

UMICORE TECHNOLOGY

Technology is essential for Umicore to succeed. This can take many forms – from production and process technology to deep knowledge of metallurgy and materials science. Umicore develops a significant part of its technology through its own research & development efforts and invests the equivalent of 6% of its revenues in R&D every year. We also develop technology in collaboration with industrial or academic partners and, where appropriate, we protect our intellectual property through patents.

SUSTAINABLE PRODUCTS AND SERVICES

Umicore's materials are integrated into products by our customers. These customers tend to be industrial companies that make products that are used by other industries or end-consumers. By working in close collaboration with these customers we are able to develop custom-made materials or processes that enhance the sustainability of the product or process by taking into account health and safety aspects, recyclability, cost efficiency, waste reduction and energy efficiency in our own facilities as well as in the value chain. We aim to anticipate developing trends – for example the push towards substituting potentially hazardous materials in products – in order to provide additional value to our customers.

Creating shared value

THROUGH OUR CLOSED-LOOP BUSINESS MODEL, WE CREATE VALUE FOR ALL OUR STAKEHOLDERS ECONOMICALLY, SOCIALLY AND ENVIRONMENTALLY

ENHANCING QUALITY OF LIFE THROUGH OUR PRODUCTS & SERVICES

Umicore's ambition is to produce "materials for a better life". Our main contributions are in the areas of recycling and materials for clean mobility. Our recycling services help solve the issue of resource scarcity and also reduce waste and CO_2 emissions. Our automotive catalysts help reduce air pollution from internal combustion engines, while our rechargeable battery materials help make electrified transportation a reality. Umicore products can be found in a host of other applications that make day-to-day life more comfortable and which often contribute to a cleaner environment. You can find Umicore materials in your television screen, in the mother-board of your computer, in the light switches in your house, in the fibre optics and satellites that keep you connected... the list is almost endless!

HIGH QUALITY EMPLOYMENT

Umicore offers high quality employment to some 10,000 colleagues in 25 countries – positions range from scientific researchers to production engineers and from supply chain experts to administrative support functions. We offer competitive salaries, training & development opportunities and long-term employment prospects to our employees and each of our sites aims to be considered as a preferred employer in its specific context. Umicore supports the principle of collective bargaining and has signed a Global Framework Agreement on Sustainable Development with the IndustriALL Global Union.

SHAREHOLDER RETURNS

Umicore aims to provide superior growth and returns to its shareholders. Our aim – across the economic cycle – is to generate a return on capital employed of more than 15%. One of our Horizon 2020 ambitions is to double the earnings of the company, mainly through growth in recycling and materials for clean mobility. While the primary focus of Umicore is on organic growth, acquisitions are also considered provided they fit the strategy and have the potential to add value for shareholders. Our dividend policy is to pay out a stable or gradually increasing dividend. We have a track-record of returning excess cash to shareholders in the form of share buybacks.

SOCIETAL CONTRIBUTION

Umicore's operations, products and services contribute to addressing many societal and environmental challenges as defined by the United Nations Sustainable Development Goals. While we make a contribution towards many of the goals, the main ones are: Sustainable Cities & Communities, Responsible Consumption & Production, Affordable & Clean Energy, Decent Work & Economic Growth, Good Health & Wellbeing, Gender Equality. You can find out more about this overarching contribution on pages 20 to 36 and explore our approach to stakeholder engagement in more detail on pages 53 to 57.

HORIZON 2020

Delivering a strategy that matters

WE ARE FOCUSED ON DELIVERING A STRATEGY THAT MATTERS AND THAT CREATES BENEFITS FOR EVERYONE

HORIZON 2020 OBJECTIVES

Our Horizon 2020 strategy focuses on four key areas with objectives that focus on specific aspects of each area.

KEY RISKS & OPPORTUNITIES

We have identified six key risks and opportunities that have the most relevance to our business (see pages 39-44). Here we show how they align with our strategic focus areas.

SOCIETAL ALIGNMENT

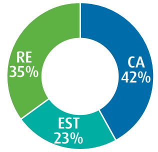
Our strategy contributes to the achievements of the UN Sustainable Development Goals.

	ECONOMIC PERFORMANCE	VALUE CHAIN AND SOCIETY	ECO-EFFICIENCY	GREAT PLACE TO WORK
HORIZON 2020 OBJECTIVES	STRENGTHEN LEADERSHIP DOUBLE THE EARNINGS REBALANCE PORTFOLIO	SUSTAINABLE SUPPLY SUSTAINABLE PRODUCTS & SERVICES	EFFICIENT OPERATIONS	SAFETY HEALTH PEOPLE ENGAGEMENT
KEY RISKS & OPPORTUNITIES	1 Regulatory and legal 2 Supply 3 Technology and substitution 4 Market 5 Metal Price	1 Regulatory and legal 2 Supply 3 Technology and substitution 4 Market	1 Regulatory and legal 3 Technology and substitution	6 Talent attraction & retention
SOCIETAL ALIGNMENT	11 Sustainable cities and communities 12 Responsible consumption and production	8 Decent work and economic growth 12 Responsible consumption and production	7 Affordable and clean energy 12 Responsible consumption and production	3 Good health and well-being 5 Gender equality 8 Decent work and economic growth

PERFORMANCE

Making progress on our strategy

WE HAVE SET OURSELVES SOME CHALLENGING STRATEGIC TARGETS FOR 2020. AND WE ARE MAKING CLEAR PROGRESS

	2020 TARGET	KEY RESULTS	MORE INFO	PROGRESS TRACKER
DRIVING ECONOMIC PERFORMANCE				
STRENGTHEN LEADERSHIP	Confirm our strong position and uniqueness in clean mobility materials offering and recycling processes	- Capacity expansion in cathode materials makes Umicore a clear leader in this domain - Completion of capacity expansion in the Hoboken plant (Recycling) - One of three global leaders in automotive emission control	Economic review (p. 22-27)	**GROUP REVENUES ANNUAL GROWTH +3%**
DOUBLE EARNINGS	At least double the size of recurring EBIT compared to 2014 and excluding the discontinued operations	- Strong earnings growth due to the increased contribution from Catalysis and Energy & Surface Technologies - Ramp-up of recently-completed investments added to scale effects	Financial statements (p. 90 to 160)	**REBIT INCREASE +7% vs 2015 +26% vs 2014** (excl discontinued operations)
REBALANCE OUR PORTFOLIO	Ensure a more balanced distribution of earnings between the three business segments	- The earnings contribution of Catalysis and Energy & Surface Technologies grew in absolute and relative terms in 2016 due to strong growth in sales of automotive catalysts and cathode materials	New automotive catalyst plant in Nowa Ruda (online case study) Expanding to meet the clean mobility challenge (online case study)	
VALUE CHAIN AND SOCIETY				
SUSTAINABLE SUPPLY	Secure our supply and promote our closed loop business offering	- Risk mapping conducted to define the critical raw materials at business unit level as well as identify mitigation actions to ensure security of sourcing. - Achieved third party assurance that our cobalt supplies adhere to our sustainable procurement framework	Ensuring sustainable cobalt sourcing (online case study)	**CRITICALITY MAPPING ACHIEVED FOR 9 OUT OF 11 BUSINESS UNITS**

Making progress on our strategy

	2020 TARGET	KEY RESULTS	MORE INFO	PROGRESS TRACKER
SUSTAINABLE PRODUCTS & SERVICES	Develop products that create sustainable value for our customers or society	– Strong portfolio of products and services contributing to clean mobility and recycling – Economic benefits and overall resource saving through closed loop for germanium	Umicore and Prysmian Group develop new metal recovery processes (online case study)	**62.0% OF TOTAL REVENUES FROM CLEAN MOBILITY AND RECYCLING**
ECO-EFFICIENCY				
EFFICIENT OPERATIONS	Achieve a higher energy efficiency	– Reduction in energy consumption of 7% compared to the 2015 benchmark year – In 2016, 36 projects on energy efficiency were implemented	Olen: Charging for the Future (online case study)	**ENERGY CONSUMPTION -7% VS 2015 BENCHMARK**
GREAT PLACE TO WORK				
SAFETY	Achieve zero accident	– Safety performance worsened for the third straight year. One fatality in Brazil – Initiation of a pilot project on risk competence to raise the awareness level of safety risks and embed a safety culture	Pushing for progress on safety (online case study)	**NUMBER OF ACCIDENTS 59**
HEALTH	Achieve no excess reading	– Increase in the excess readings from biomonitoring – Indium added to the list of the tracked biomarkers	Social statements (p. 181-194)	**EXCESS READINGS 3.2%**
PEOPLE ENGAGEMENT	Make further improvements in the area of people engagement with specific focus on talent attraction & retention, diversity management and employability	– Introduction of a voluntary target of 15% of women in senior management functions – Junior management program to foster international experience and diversity thinking – Access to digital learning platform extended	JUMPing across borders (online case study)	**VOLUNTARY LEAVERS 4.1%**

Economic review

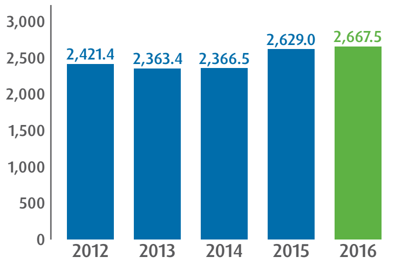
WE AIM TO ENHANCE OUR LEADERSHIP IN CLEAN MOBILITY MATERIALS AND RECYCLING. THE 2016 RESULTS WERE A BIG STEP IN THE RIGHT DIRECTION.

OVERVIEW

Revenues and recurring EBIT from continued operations increased by 3% and 7% respectively. Revenues for the Group including discontinued operations were up 1% and recurring EBIT increased by 6%. Strong growth in Automotive Catalysts and Rechargeable Battery Materials more than offset the impact of lower metal prices on the various recycling activities.

REVENUES (EXCLUDING METAL)

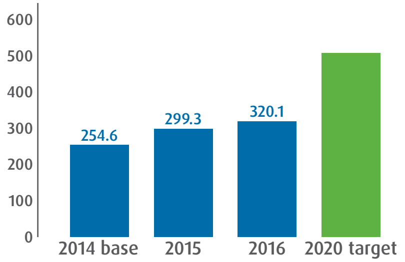
EUR million



The performance in 2016 represented a positive year in moving towards our Horizon 2020 economic objectives. The overall evolution in all three segments demonstrates that we are enhancing our leadership in clean mobility materials and recycling. The growth in earnings in the Catalysis and Energy & Surface Technologies segments also represents a big stride towards the goals of doubling earnings from the base of 2014 (excluding discontinued operations), and rebalancing the portfolio.

RECURRING EBIT

EUR million



SEGMENT COMMENTARY

CATALYSIS

Revenues in Catalysis increased by 6%, driven by strong growth in Automotive Catalysts. Earnings grew by 23% with the volume growth in Automotive Catalysts being complemented by a positive mix effect and scale effects following the ramp up of production in recently commissioned investments.

Revenues for **Automotive Catalysts** were well up year on year, both for light-duty vehicles and heavy-duty diesel applications. In the light-duty vehicles segment, demand was particularly strong for Umicore's catalysts for gasoline engines. Demand for heavy-duty diesel catalysts was well up in Europe and Asia.

Global light-duty vehicle production grew 4.3%, almost entirely driven by the Chinese car market and to a lesser extent by growth in Europe and North America. Umicore's volumes and revenues grew faster than the global market.

In Europe, Umicore's volumes and revenues outperformed car production growth, which was up by 2.6%. Demand for Umicore's catalysts for gasoline engines was strong due to the success of recently launched gasoline platforms on which its catalysts are present. This was particularly the case for direct injection gasoline engines. During the year, Umicore announced the consolidation of its automotive catalyst production in Germany into a single dedicated facility in Bad Säckingen, and its intention to expand the capacity at the plant in Nowa Ruda, Poland, to cater for future growth.

In North America, Umicore's volumes and revenues did not match the market growth of 2%, which was mainly driven by Asian OEMs to which Umicore is relatively less exposed. Umicore completed an expansion of its test lab at the technology development centre in Auburn Hills, Michigan. Umicore's volumes and revenues in South America fell, in line with a weakening market that only

Economic review

started to see signs of stabilisation towards the end of the year.

Chinese car production grew 12.8%. A key factor was the Chinese government's decision at the end of 2015 to cut the sales tax for vehicles with small engines from 10% to 5%. This boosted sales throughout 2016. Umicore sales outpaced the Chinese market both in volumes and revenues due to its strong exposure to international car OEMs which have been growing faster than local producers.

In South Korea, Umicore's volumes and revenues dropped in line with the market. Umicore further increased its market share with Japanese OEMs globally and sales volumes and revenues grew strongly. Umicore's volumes and revenues in India outpaced the growing car market. In Thailand, Umicore commissioned its new catalyst production plant in Hemaraj towards the end of the year.

During 2016, Umicore secured major awards for gasoline particulate filters in Europe and China for compliance with Euro 6c and China 6 emission regulations that come into effect from September 2017.

Revenues for **Precious Metals Chemistry** were slightly down year on year. Higher revenues for homogeneous catalysts used in life science applications and bulk chemicals were more than offset by lower order levels for active pharmaceutical ingredients and weaker demand in South America for inorganic chemicals used in catalytic applications.

ENERGY & SURFACE TECHNOLOGIES

Revenues in Energy & Surface Technologies were up 4%, with strong volume growth in cathode materials for automotive applications more than offsetting lower demand in certain other end markets served by the business group. Earnings were up 16% as a result of higher revenues as well as margin improvements in Cobalt & Specialty Materials and Electro-Optic Materials.

Revenues and volumes for **Rechargeable Battery Materials** were significantly higher year on year driven by burgeoning demand for NMC (nickel manganese cobalt) cathode materials used in the transportation segment. In this market segment, the increasing market penetration of electrified car models and the use of larger batteries enabling a longer driving range are strong fundamentals for growth.

In April 2016 Umicore announced an investment program to triple capacity for cathode materials in China and Korea by the end of 2018. This investment is based on the surge in customer orders for NMC cathode materials for use in electrified transportation applications The new capacity will gradually come on stream as of the second half of 2017. As part of its growth strategy in battery materials, Umicore also acquired the full ownership of three NMC patent families for cathode materials from 3M Corporation. Umicore had previously licensed these patents from 3M. The patents relate to materials that are the reference for large format lithium ion batteries typically used in automotive and energy storage applications.

Shipments of Umicore's proprietary High Energy LCO (lithium cobaltite) cathode materials for high-end portable devices continued to be solid. These materials offer an excellent combination of highest energy density and safety performance for high-energy polymer batteries used in electronic devices. Demand for Umicore's NMC cathode materials used in energy storage applications was higher year on year.

Revenues for **Cobalt & Specialty Materials** were largely stable year on year, despite the impact of lower cobalt and nickel prices on the contribution from the refining activities. While prices for cobalt and nickel improved somewhat towards the end of the year, they remained below the average of 2015.

The distribution activity recorded stable revenues with volume growth offsetting the impact of lower metal

Economic review

prices on distribution margins. Revenues increased for nickel chemicals due to greater demand for battery and catalytic applications. Order levels for metal carboxylates were somewhat below the strong levels seen in 2015, while revenues for tool materials remained stable.

Construction work to upgrade the refining facility in Olen, Belgium, started during 2016 and is expected to be completed by the end of 2018.

Revenues for **Electroplating** were well up year on year, primarily as a result of strong growth in demand for precious metal based electrolytes used in portable electronics. Demand for coating products used in printed circuit boards was also up reflecting market share gains. Revenues for decorative applications were somewhat lower.

Revenues for **Electro-Optic Materials** were lower due to a smaller contribution from recycling and refining as well as lower revenues for the substrate activity. The recycling and refining activities felt the effect of lower metal prices while order levels of substrates remained somewhat below the strong levels seen in 2015. Revenues for germanium tetrachloride were well up and benefited from higher demand as well as market share gains. Demand for infrared finished optics was also higher. The impact of lower revenues on earnings was more than offset by cost reduction measures and productivity improvement programmes.

Thin Film Products recorded lower revenues and earnings year on year due to a reduced contribution from the large area coating activity where competitive pressure continued to weigh on volumes and premiums. Revenues from products sold to the microelectronics industry were up benefiting from higher demand in Europe and Asia. Construction of a new plant in China for the production and recycling of ITO (indium tin oxide) targets was completed in 2016 and started to ramp up production.

RECYCLING

Revenues and earnings for Recycling were down 3% and 12% respectively, reflecting the impact of lower metal prices.

Revenues for **Precious Metals Refining** were slightly down year on year due to lower demand for specialty metals, particularly selenium, tellurium and indium as well as lower received prices for platinum group metals (PGMs). Although demand for specialty metals picked up somewhat towards the end of the year, prices remained well below the levels seen in recent years; this was also the case for PGM prices. The supply mix during the year reflected good availability of complex residues coming from the non-ferrous refining and mining industries.

Umicore carried out two maintenance shutdowns at the Hoboken smelter in 2016. In addition to the regular maintenance work, process improvements were implemented through the year and several investments in auxiliary installations were completed. Annual treated volumes at the facility were in line with those of the previous year.

In 2016 Umicore initiated a series of investments in the Hoboken facility to reduce metal emissions. This will focus in first instance on a revamping of the lead refinery in order to both curtail the risk of lead emissions and further improve occupational health at the plant. While overall emissions have been reduced significantly and consistently over the past twenty years, a spike in dust emissions has occurred at the lead refinery during repair works. The investment aims at achieving the next step of drastic reduction in dust exposure risk.

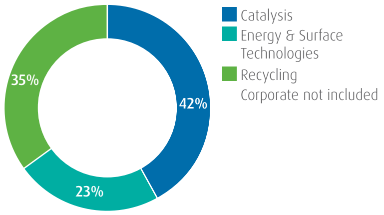
Revenues for **Jewellery & Industrial Metals** were stable compared to the previous year. The refining activity benefited from higher volumes, particularly for gold-containing residues. Revenues in the product businesses, however, were impacted by a lower demand for silver coins from the European and North American mint producers. Demand for industrial applications and jewellery products was stable.

Revenues for **Platinum Engineering Materials** increased slightly year on year as a result of higher demand both for glass and performance catalyst applications. Previously implemented cost reduction measures also had a positive impact on earnings.

In **Precious Metals Management**, the contribution from the trading activity was lower due to the unfavourable metal price environment, particularly in the first half of the year. The demand picture for the physical delivery of metals was mixed: investor demand for gold investment bars increased year on year, while order levels for industrial metals were somewhat lower.

Revenues for **Technical Materials** were slightly down as trading conditions remained challenging, particularly in Europe. Earnings were higher though, reflecting the benefits of the cost reduction and productivity measures. Additional steps are being considered to improve the competitiveness of the business as well as a possible divestment of all or parts of the business unit. In this context, the business unit closed its production facility in China, where structural overcapacity in the contact and brazing materials market had rendered a local production presence unsustainable.

RECURRING EBIT PER BUSINESS GROUP



CORPORATE

Overall, corporate costs remained roughly at the same level as in 2015.

Element Six Abrasives, recorded lower revenues year on year as a result of reduced demand in several of its end markets. While trading conditions improved somewhat towards the end of the year, particularly for oil and gas drilling products, overall demand remained well below the level of the previous year. The impact of lower revenues on the earnings contribution from Element Six Abrasives was to a certain extent mitigated by the impact of cost reduction and efficiency improvement measures.

DISCONTINUED ACTIVITIES

Revenues for **Building Products** were down year on year as demand in France – the largest market for the business unit – remained subdued. First signs of recovery in the French construction market have recently been observed which may support future demand. Revenues for building materials sold in the markets outside Europe were also lower due to delays in some larger building projects. Premiums for the more commoditised market segments were impacted by competitive pressure while increased sales of surface treated products contributed to an improvement in the product mix.

Umicore completed the sale of **Zinc Chemicals** to OpenGate Capital effective 1 November 2016. The activities contributed for 10 months in 2016.

NON-RECURRING ITEMS

Non-recurring items had a negative impact of EUR 110 million on EBIT. The main non-recurring expense related to a EUR 69 million fine imposed by the French Competition Authority in relation to Umicore's Building Products activities in France. The authority claimed that Umicore Building Products France had abused an alleged position of market dominance. Umicore lodged an appeal against the decision.

Economic review

Restructuring charges accounted for EUR 43 million and were primarily related to the announced closure of an Automotive Catalysts production site in Germany and the closure of the Technical Materials production site in China. A recovery of certain metal prices at the end of the year allowed for a reversal of impairments of permanently tied-up metal inventories for a total amount of EUR 16 million. The impact of non-recurring charges on the net result (Group share) amounted to EUR 104 million.

FINANCIAL RESULT AND TAXATION

Net recurring financial charges totalled EUR 32 million, an increase compared to the previous year primarily due to negative foreign exchange results. The average weighted net interest rate increased slightly to 1.76%.

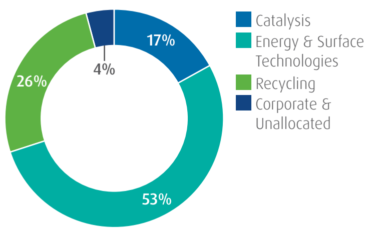
The recurring tax charge for the period amounted to EUR 75 million corresponding to a recurring effective tax rate of 25.0% (vs 21.4% in 2015).

CASHFLOWS

Cashflow from operations was EUR 385 million. Working capital requirements remained stable over the year.

Capital expenditures totalled EUR 287 million, most of which relates to Umicore's growth investments in clean mobility and recycling. The Energy & Surface Technologies business group accounted for the largest portion of the growth expenditures including the start of the investment works to triple total capacity for cathode materials by the end of 2018 as well as the acquisition of the NMC battery material patent families from 3M. In Recycling, capital expenditures included the auxiliary investments linked to the capacity expansion in Hoboken. Investments in Catalysis include the construction and commissioning of the new catalyst production plant in Thailand.

CAPITAL EXPENDITURE PER BUSINESS GROUP



FINANCIAL DEBT

Net financial debt at 31 December 2016 stood at EUR 296 million, slightly down from EUR 321 million at the start of the year The indebtedness was lower due to cash proceeds from the divestment of Zinc Chemicals. Group shareholders' equity stood at EUR 1,848 million resulting in a net gearing ratio (net debt/net debt + equity) of 13.8%. The average net debt to recurring EBITDA ratio corresponded to 0.6, which was in line with that at the end of 2015.

HEDGING

Over the course of 2016, Umicore entered into forward contracts securing a portion of its structural price exposure for certain precious metals and base metals in 2017 and 2018.

RESEARCH, DEVELOPMENT & INNOVATION

R&D expenditure in fully consolidated companies including discontinued operations amounted to EUR 156 million, up from EUR 145 million in 2015. The year-on-year increase reflects higher expenditures in Catalysis. The R&D spend represented 5.8% of revenues.

The main areas of product R&D spending are in automotive catalysis, rechargeable battery materials and fuel cell catalysis. The majority of process-related R&D spending is dedicated to recycling technologies as well as processes for the production of catalysts and rechargeable battery materials. Umicore deducts any research grants that are received from third parties from the reported R&D figures. We also apply the internationally recognised Frascati Manual definitions for R&D expenditure. The reported R&D expenditure in this report excludes R&D of associates.

Economic review

A total of 50 new patent families were filed in the course of 2016, compared to 46 in 2015. Most of these concern automotive catalysts and rechargeable battery materials.

Umicore has prioritised its R&D programmes to offer the best possible support to the Horizon 2020 ambitions with a focus on the development of innovative materials and processes in the areas of clean mobility and recycling.

Umicore promotes open innovation and in 2016 we continued to develop our collaboration network with universities and research institutes around the world. We hosted close to 72 internships for students as part of their masters and bachelors' studies and directly sponsored 15 PhDs and post-doctoral students over the course of their studies. Umicore holds 5 guest professorships at universities and Umicore research and technical staff conducted numerous lectures at universities around the world. We also have numerous university partnerships for research and the sharing of services and infrastructure.

In December 2016, Dr Camila Fernandez received the EUR 10,000 Umicore Materials Technology Award for her PhD work in the field of exploring dynamic catalytic processes for synthesising ammonia on ruthenium-supported nanoparticles at low temperatures. Dr Fernandez's entry was one of 15 submitted from all over Europe.

The Umicore Materials Technology Award is granted to a PhD graduate who, through his or her research, contributes to science in fields that are crucial both to the growth of Umicore's business and the development of a sustainable society. These areas are: Recycling/resource scarcity related to metals, materials for catalysis and materials for batteries.

THE UMICORE SHARE

Umicore's share price was 40% higher at the end of the year compared to the end of 2015, (EUR 54.15 vs EUR 38.67). This was compared to a 3% increase in the Euronext 100 Index of the largest 100 companies quoted on the Euronext stock exchange and a decrease of 2.5% of the Bel20 Index of the largest Belgian companies. This performance won Umicore the award for the best performing stock in the Bel20 index. During the year, we retained our place in the FTSE4Good sustainability index and a number of other sustainability oriented funds.

At the end of 2016, 3 investment companies had holdings in Umicore that were above the declaration threshold of 3%. These companies had combined declared holdings of 23.03% at year's end, by far the largest of which was GBL with a stake of 17%.

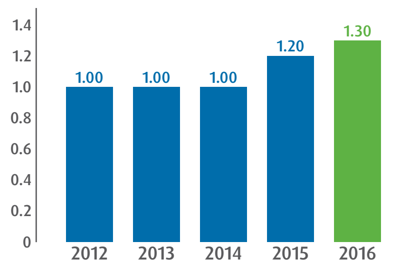
Umicore did not buy back any of its own shares in 2016. In the course of the year, 1,188,875 shares were used in the context of exercised stock options. On 31 December 2016, Umicore held 2,673,150 shares in treasury, representing 2.39% of the Group's outstanding shares.

DIVIDEND

The Board of Directors will propose a gross annual dividend of EUR 1.30 per share at the Annual General Meeting on 25 April 2017. This represents a payout ratio of 61% based on the recurring EPS of EUR 2.14 per share and a yield of 3% based on the average share price of 2016. Taking into account the interim dividend of EUR 0.60 per share paid out on 25 August 2016 and subject to shareholder approval, a gross amount of EUR 0.70 per share would be paid out on 2 May 2017.

GROSS DIVIDEND

EUR



Value chain and society

WE WANT TO LEVERAGE OUR SUSTAINABILITY APPROACH IN THE VALUE CHAIN, BOTH UPSTREAM WITH OUR SUPPLIERS AND DOWNSTREAM WITH OUR CUSTOMERS

Umicore's Horizon 2020 objectives reflect a proactive view of its presence in the overall value chain. They cover Umicore's presence and impact upstream, for example through the interaction with suppliers, in our own operations and also downstream in terms of the impact of our products and services.

Upstream, we have built on the experience of deploying our Sustainable Procurement Charter between 2011 and 2015 and have placed more emphasis on the management of key raw materials supply requirements. We have also sought to ensure that Umicore's efforts in the field of ethical sourcing can generate a competitive edge for the company.

Downstream, we have a strong portfolio of products and services that offer specific sustainability advantages to our customers and society. The knowledge and expertise that we have built in the context of Vision 2015 provide us with a strong platform to demonstrate the sustainability benefits of our products and services to customers and other stakeholders.

SUSTAINABLE SUPPLY

In order for our operations to function, we need raw materials, transportation, energy and other goods and services. Overall we have more than 10,000 suppliers worldwide to which we paid in 2016 some EUR 9.0 billion (including the metal content of raw materials). Umicore's purchasing and transportation teams worldwide take care of the energy and other goods and services (which is referred to as indirect procurement and accounts for some 10% of our spend) while the metal-bearing raw materials are purchased directly by the business units (direct procurement, accounting for 90% of our spend). In the scope of the Horizon 2020 sustainable supply objective we focus on raw materials as they constitute the biggest proportion in spend and risks.

Our commitment to suppliers in terms of conduct and practices is outlined in the Sustainable Procurement Charter. In return, we request that suppliers adhere to specific standards in terms of environmental stewardship, labour practices and human rights, business integrity and supply chain engagement. Since its introduction in 2011, the Sustainable Procurement Charter has been at the heart of all our engagement efforts with suppliers.

Securing adequate volumes of raw materials is an essential factor in the ongoing viability of our product and service offering and in being able to achieve the Horizon 2020 growth objectives. The risks and opportunities vary considerably from one business unit to another and for this reason we have taken a decentralised approach to risk and opportunity management. We have determined to seek a competitive edge in terms of access to critical raw materials and in our ability to secure these raw materials in an ethical and sustainable way.

In 2016, nine of the eleven business units carried out a mapping exercise to identify critical raw materials. Five of these nine business units have already put specific actions in place to mitigate the risk of supply disruption. The criticality mapping is based on some 20 criteria covering various aspects of sustainability from financial reliability of the suppliers and specific market conditions to environmental and product safety risks or human rights and business integrity issues. Mitigation actions can vary depending on the materials and the position of the business unit in the market.

In terms of building a greater competitive edge from ethical and sustainable procurement practices, one example stands out in 2016. Umicore uses cobalt in materials that go into rechargeable batteries, tools, catalysts and several other applications. Over a decade ago, Umicore developed and implemented a specific approach to the ethical and sustainable procurement of cobalt. This approach – which was a first in the cobalt industry – has been formalised in a Sustainable Procurement Framework for Cobalt and covers Umicore's cobalt purchases worldwide. In 2016, we went a stage further and secured third party assurance from PwC that our cobalt purchases were effectively carried out in line with the

Value chain and society

conditions set out in the framework. This approach – another first for the industry – has received a high degree of interest from the customers of our Cobalt & Specialty Materials and Rechargeable Battery Materials business units. Major global electronics and automotive producers are keen to protect their brands from association with unethically mined raw materials and Umicore's approach provides welcome risk mitigation in this regard. You can read more about this in our case study.

"Securing adequate volumes of raw materials is an essential factor in the ongoing viability of our product and service offering"

The focus on conflict minerals strengthened further in 2016 with the EU agreeing on a framework similar in scope to the US Dodd Frank Act of 2012. This requires greater disclosure by companies on whether tin, tantalum, tungsten and gold in their products have originated from the Democratic Republic of Congo or an adjoining country. In 2016, Umicore continued to ensure that its operations are certified as conflict free through various certification schemes such as the "conflict-free smelter" initiative of the London Bullion Market Association (LBMA) and the Responsible Jewellery Council's (RJC) Chain of Custody programme. More details on the conflict-free status of our operations can be found in the statements section on page 197.

Umicore's policy regarding "Responsible global supply chain of minerals from conflict-affected and high risk areas" can be accessed here.

In the context of our Vision 2015 objectives, the Purchasing & Transportation team developed a framework to assess the indirect procurement streams (mainly energy and other goods and services) for suppliers' sustainability performance. This resulted in the formal acknowledgement of the charter by more than 1,000 suppliers. The team also carried out a number of assessments of strategic suppliers of energy, goods and services using the assessment process of Ecovadis. In 2016, the team entered into an extended partnership with Ecovadis that gives access to a greater number of Ecovadis assessments on suppliers. Furthermore a new quick scan tool enables Umicore to make quicker and better informed decisions regarding the indirect procurement, particularly for those suppliers that are deemed critical in terms of services provided, geographical location and Umicore's spend.

SUSTAINABLE PRODUCTS AND SERVICES

In the framework of Vision 2015, we developed our own tool to assess the sustainability of our products and services. The understanding derived through this Assessment of Product (and service) Sustainability (APS) tool gave all business units better insight into the potential for differentiation and competitive advantage through the sustainability profile of their products. The experience gained by the implementation of APS in all business units was a key instrument for Umicore to develop its materiality matrix and to identify those areas where our sustainability approach could be better leveraged to differentiate us from competitors. Umicore's Horizon 2020 objective is to generate further competitive advantage through the development of products that have specific sustainability benefits. This has a strong link with our economic objective of being a clear leader in clean mobility and recycling.

Our primary focus in terms of sustainable products and services is on those activities that provide solutions to the megatrends of clean mobility and resource scarcity. Below are some examples illustrating this, for which we invite you to consult our on-line case studies for more detail:

- Clean mobility (clean air): We opened a new facility for automotive catalysts production in Poland. This investment enables us to supply our

Value chain and society

customers with technologies to meet the most stringent emission legislation and support Europe's aim for 'cleaner air for all'. It also underscores our ambition to be a clear leader in materials for clean mobility.

- Clean mobility (electrified vehicles): We announced an expansion plan to triple production capacity for cathode materials by the end of 2018. Umicore's NMC cathode materials are key ingredients in enabling the improvements required for battery technology to increase driving range and reduce the total cost of electrified vehicle ownership.

- Investments at the Olen site included a new cobalt refining facility that increases Umicore's ability to recycle cobalt and nickel-bearing residues.

- Umicore works with its customers using a business model that supports the circular economy. Several business units do this by recycling production residues, end-of-life materials and industrial by-products. While the highest profile example is our recycling activities in Hoboken, there are many other examples around the company. A collaboration between Umicore and Prysmian Group, for example, has led to innovative recovery processes that reduce waste and hence lower consumption of germanium.

We have developed a new indicator to underline our focus on clean mobility and recycling. In 2016, the revenues of those activities that deliver products or services that are directly linked to one of these two megatrends was 62%. As we work towards the Horizon 2020 goals and bring even more focus to our business, we expect this percentage to increase. It should be noted that many of the materials and services making up the remaining 38% of revenues provide answers to specific societal needs such as improved connectivity (materials for high quality glass, displays) or reduced energy consumption (materials for use in energy efficient lighting such as LEDs).

You can read more about our efforts in this area, including our approach to international regulatory compliance in particular REACH, in the statements section on pages 195 to 201.

Eco-efficiency

WE AIM TO OPTIMISE THE SUSTAINABILITY PERFORMANCE OF OUR OWN OPERATIONS, WITH A PARTICULAR FOCUS ON ENERGY EFFICIENCY

As part of our Horizon 2020 objectives, we continue to pursue selective eco-efficiency initiatives in business units and sites where these can generate compelling value and a competitive edge, for example through reduced costs or a strengthened license to operate.

ENERGY EFFICIENCY

While we already play an important role in the transition to a low carbon society, for example through our materials for rechargeable batteries used in electrified vehicles, we focus in our own operations on achieving further improvements in energy efficiency.

In the scope of Horizon 2020 a greater emphasis is placed on those sites that are contributing the most to Umicore's total energy consumption. Monitoring and reporting of the energy consumption continue to be done at all sites. The bigger contributors are additionally encouraged and required to report on their energy efficiency projects.

In 2016, 27 sites accounted for 95% of the Group's energy consumption. At these sites, 36 energy efficiency projects were implemented during 2016. By the end of the year, Umicore had achieved a 7% reduction in energy consumption compared to the 2015 benchmark year. This means that for equivalent production levels we consumed 7% less energy. This result is the combination of improvements in productivity and the implementation of energy efficiency projects. At the same time the total CO_2e emissions in absolute numbers increased by 12% in comparison with 2015, which is due to higher direct process emissions unrelated to energy consumption on the one hand and a net increase of activity levels on the other hand. For the definition of the scope of the sites in the comparison between both years, please consult the statements section on pages 170 to 180.

Furthermore, a number of Umicore sites have now implemented the energy efficiency standard ISO 50001, while the two largest sites in Belgium are since 2004 part of the energy efficiency covenant with the Flemish government.

METAL EMISSIONS

As part of our environmental management approach we have for many years been monitoring and taking steps to reduce the impact of emissions of metals into the environment – both to water and air.

Each of the different metals that we emit has a very different level of potential toxicity for the environment and human health. For this reason we focus on reducing the impact of our emissions.

A specific methodology is used to establish the environmental impact of metals both to air and to water. For air emissions, we have been inspired by the workplace threshold limit values of the American Conference of Government and Industry Hygienists (ACGIH) benchmarks to calculate impact factors as they relate to human health. For water emissions impact factors are based on the predicted no-effect concentrations (PNEC) that are, among others, used in the EU's REACH regulation.

The aim for 2020 is to build on the Vision 2015 achievements in reducing the impacts of metal emissions while taking into account growing volumes of production. Reporting will now focus on those sites that are contributing to 95% of the emissions expressed in impact and taking into account their activity level. Monitoring continues at all sites.

Over 95% of the impact of metal emissions to water and air are the result of production activities at fewer than 10 sites. This clearly indicates that the overwhelming majority of our sites do not have a significant impact via their metal emissions.

METAL EMISSIONS TO AIR

Regarding impact of metal emissions to air, taking into account activity levels, we achieved a year-on-year impact reduction of 30% in 2016, mainly due to improved filter efficiency across sites.

Eco-efficiency

METAL EMISSIONS TO WATER

Compared to 2015, after correction for activity levels, the impact of emissions to water fell by 1%. This evolution is a combination of differing trends observed at our sites. At Hoboken the increased efficiency of the waste water treatment plant following recent investments has started to pay off; further reductions are expected due to additional improvement projects at the plant. At Umicore's rechargeable battery materials production plant in Korea, efficiency improvements and scale effects led to a notable decrease in metal emissions to water. On the other hand, increased water throughput at two sites in Belgium and China in combination with some higher measured concentrations – all below the permitted discharge limits – led to increased emissions of some metals.

LEAD EMISSIONS AT HOBOKEN (BELGIUM, RECYCLING)

Umicore has reduced overall emissions at the Hoboken plant significantly and consistently over the past twenty years. However, a significant increase in diffuse dust emissions occurred at the lead refinery towards the end of 2015. This resulted in higher lead depositions in the surrounding residential area of Moretusburg. The results of emission measurements for 2016 have shown the average emissions to be below the limit value of 500 ng/m^3.

Twice a year, the provincial authorities conduct a biological monitoring campaign among children living around the facility. At the end of 2016, this monitoring showed that 73 children out of a total of 194 participants had lead in blood levels exceeding the reference value of the Center for Disease Control and Prevention (USA) of 5.0 μg/dl. Of these children, four had values in excess of 20 μg/dl.

A comprehensive action plan has been launched with the authorities and an investment will be carried out to better ventilate and filter the air at the lead refinery. An initial improvement action was completed by March 2017 with more significant improvements set to be finalised by the end of 2017. Other measures are being taken such as a further improvement to the management of diffuse sources during storage and transport of input materials.

Umicore is also working closely with the authorities to implement specific precautionary hygiene measures such as the cleaning of the homes of the children with the highest levels of lead concentration.

Great place to work

THE LONG-TERM SUCCESS OF UMICORE DEPENDS ON US BEING A SAFE, HEALTHY AND ENGAGING PLACE TO WORK

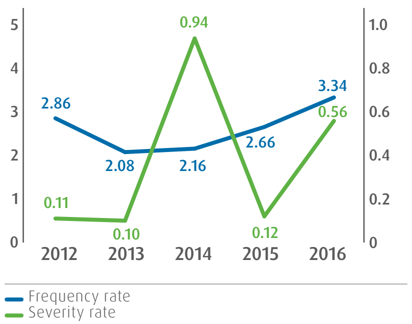
As part of the Horizon 2020 environmental and social objectives Umicore has retained some of the Vision 2015 Group-wide objectives that aim to ensure that Umicore is a great place to work and to which all business units are expected to contribute. The most pressing of these objectives is the continued drive towards zero accidents. We have also retained the goal of reaching the occupational metals exposure target of zero excess readings. In the area of people engagement the accent lies on making progress on the strategically important themes of talent management, diversity and employability.

ZERO ACCIDENTS

Umicore continues to pursue its goal of reaching zero lost-time accidents by 2020. In May 2016, a fatal accident occurred in the operations in Manaus, Brazil. An investigation concluded that the accident was the result of an employee not following the prescribed instructions while carrying out a chemical handling. Efforts will continue in order to ensure that any and all areas for improvement are identified and pursued.

In terms of year-on-year safety performance, the number of lost-time accidents was higher in 2016 (59) compared to 2015 (47) and the accident frequency rate therefore rose from 2.66 to 3.34. The accident severity rate was 0.56 compared to 0.12 in 2015. The 2016 results do not include the Zinc Chemicals activities, which were sold towards the end of the year.

LOST TIME ACCIDENTS



While these results are far from satisfactory, the percentage of sites that operated with no lost-time accidents remained high at 84%. Five business units were able to operate for the full year with no lost-time accidents and one site reported 10 years with no lost time accident or recordable injuries to Umicore staff and no lost time accidents involving contractors. Five sites achieved the three year benchmark and six sites achieved the five year benchmark.

Illustrating Umicore's commitment to improve workplace safety is the Rechargeable Battery Materials business unit, which has developed its own safety programme to continuously increase "Awareness, Competence, Compliance and Excellence". The entire business unit has now gone more than 1,200 days without a lost time accident. More details can be read in this case study.

The Group-wide process safety project that was initiated in 2014 is now drawing to a close, following the successful deployment of safety standards and guidance notes. Moreover, during 2016 the process safety project team completed the development of in-house software to facilitate the process of risk identification and the implementation of risk reduction measures. Additional training and workshops were given in the course of the year to communicate this tool to relevant stakeholders. Daily process safety management is being transferred to corporate EHS.

OCCUPATIONAL EXPOSURE

Umicore makes continuous efforts to eliminate occupational-related illness and to promote well-being in the workplace. The main occupational health risks are related to exposure to hazardous substances (particularly arsenic, cadmium, cobalt, lead, nickel and platinum salts) as well as physical hazards (mainly noise). Umicore has established biological target reference levels for occupational exposure to these potentially hazardous substances, based upon scientific data on the substances.

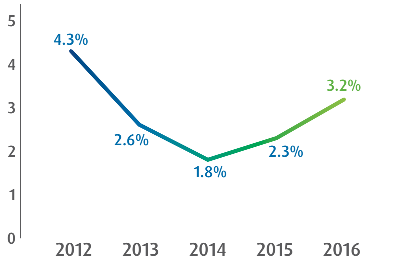
Great place to work

In addition, newly available scientific data indicates the association between exposure to indium (and its compounds) and adverse chronic respiratory effects. For this reason, indium has been added to the above list of hazardous substances. Umicore will continuously review the working conditions around indium, taking into account processes, preventive measures, personal protective equipment, and unacceptable exposure levels. Playing a key role in this review was the work conducted by Umicore and the US National Institute for Occupational Safety & Health (NIOSH) on a project to evaluate the effectiveness of preventive measures to control employee exposure to Indium Tin Oxide (ITO) at our plant in Providence, USA.

The Horizon 2020 objective for occupational exposure is to reduce to zero the number of individual readings that indicate an exposure for an employee that is higher than the internal target levels. While these excess readings do not necessarily indicate a risk for the person concerned, they are important indicators of recent or lifetime exposure and are used as the basis for further improvements in that specific workplace. All employees with a potential workplace exposure to one of the target metals (arsenic, cadmium, cobalt, indium, nickel, lead and platinum salts) or other metals are monitored by an occupational health programme.

In 2016, a total of 5,294 biological samples were taken from employees with an occupational exposure to at least one of the metals mentioned above (platinum salts excluded). 170 readings showed results in excess of the internal target value, equating to an excess rate of 3.2% compared to 2.3% in 2015. One of the main reasons for this increase was the higher number of excess readings in cobalt biomonitoring in one of our new facilities. Measures have been taken to tackle the increased exposure including technical improvements, stricter housekeeping and personal protective equipment policies. In 2016, 311 workers were exposed to indium and indium tin oxide of which 35 workers were exposed above the target level of 1 microgramme per litre of plasma. 2016 was the first year of monitoring of indium exposure. In 2016, one case of platinum salt sensitisation was diagnosed. All occupationally exposed employees are regularly monitored by an occupational health physician.

EXPOSURE RATIO 'ALL BIOMARKERS AGGREGATED'



PEOPLE ENGAGEMENT

Horizon 2020 follows in the footsteps of Vision 2015 and is fine-tuned to take into consideration the evolution of Umicore, the market, and societal expectations. Our objectives relate to talent management, diversity and employability – the three aspects that will have the greatest bearing on Umicore reaching its potential by 2020.

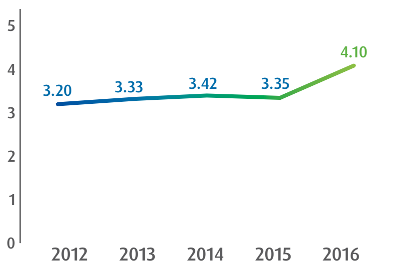
TALENT MANAGEMENT

Talent management involves finding and retaining the right people at all levels of the organisation and in a myriad of different functions. These can range from equipment operators to laboratory analysts and from office staff to production engineers. For Umicore the main drivers are linked to the Horizon 2020 growth

Great place to work

ambitions in the sectors and geographical areas where we are active. Attracting and retaining talent is a particular challenge in Asia – the region where much of Umicore's growth is expected to happen in the coming years. The Asian labour markets tend to be much more fluid and competitive with people much more willing to change job. Overall, our employee turnover increased during 2016 from 3.35% to 4.10%. The number of voluntary leavers was somewhat more pronounced in our newer sites and this demonstrates the particular challenge in attracting and retaining the right people in these growth areas.

VOLUNTARY LEAVERS RATIO



Following on from the successful mentoring pilot project for women managers in Belgium in 2014, we implemented a global, company-wide mentoring program in 2016. The new program targets young, emerging talent with up to five years' experience. These colleagues are paired with a more senior partner from a different business function or activity area and the experience is designed to enrich the mentees' perspective of the company and broaden their network. During the year 114 colleagues – mentors and mentees alike – benefited from the programme.

Another initiative to promote career development within Umicore is the introduction of a new software tool to handle job vacancies. The platform enables all vacancies to be made accessible to internal candidates in the first instance, thereby promoting greater possibilities for internal moves for employees. Since the introduction of this new tool, 32% of the vacancies were filled internally and 68% by external candidates.

Training levels for Umicore employees remained at a satisfactory level. On average, each employee received 41 hours of training in 2016 – the equivalent of five days. This compares to 45 hours in 2015. Training encompasses traditional classroom type modules as well as on-the-job instruction and on-line learning.

DIVERSITY

Umicore seeks to benefit as much as possible from diversity, for example in gender, culture and ethnicity. Umicore believes that management teams that are more diverse improve the quality of decision-making.

Umicore is especially seeking to have broader cultural representation in its management teams. Currently, 17% of the top 130 management positions in Umicore are filled by non-Europeans. Considering that 51% of our revenues are generated outside Europe – a figure that is likely to grow in the coming years – we decided to take action to ensure that non-Europeans are better represented in our senior management. A better balance in this regard will enable us to make business decisions that are better aligned with the markets we serve. While we have chosen not to implement any specific target we will report annually on the evolution of this metric.

Women are under-represented at senior management level at Umicore. While this can be partly ascribed to the fact that chemical companies tend to attract fewer women (only 21.6% of Umicore's total workforce is female), it is evident that more needs to be done to improve the career prospects for talented women within Umicore. At senior management level, the representation of women has evolved slowly from 6% to 9% between 2012 and 2016. Umicore's aim is to accelerate this trend and to ensure that women make

Great place to work

up at least 15% of senior management positions by 2020. One indicator indicates that we are heading in the right direction. At the end of 2016, women occupied 14% of management positions in business operations functions. These are the functions that tend to provide the majority of candidates for all senior leadership positions.

"Coaching Circles" is an example of an initiative to promote diversity. It was initiated in 2015 by a group of women managers in Belgium. In 2016 it was integrated in the HR Learning Campus and made available for all women at management level in Belgium. It involves five half-days of training by an external trainer on topics of relevance for young women managers such as networking, communication & visibility, life balance & resilience, effective leadership. Other similar initiatives to improve support for women in the workplace include the "Frauen@Umicore" network in Germany.

EMPLOYABILITY

We seek to ensure career-long learning and development opportunities for our employees and to promote the transferability of skills and knowledge between different parts of the company.

In 2016, we conducted the inaugural Junior Management Program (JUMP) for young managers in the group. The objective of the programme is to ensure a shared learning experience for young managers, primarily through an extended job-swap that crosses cultural and operational boundaries. You can read more about the experiences of the 16 participants in the case study.

In 2016, we reached an important milestone when all employees' records were included in our digital learning platform My Campus. Through this platform, most employees can now electronically request to follow trainings and download e-learning programmes. The next milestone is to ensure digital access to all employees.

In terms of leadership development, we continued our senior leadership programme at the INSEAD business school to hone the skills of leaders in areas such as strategic business thinking, the Asian business context and personal leadership.

A key strand within the theme of employability seeks to address the societal trend that people now have to work longer before retiring, particularly in Europe. Umicore wants to ensure that people who are working well into their sixties are provided with suitable, motivating and rewarding work and can transfer their skills and knowledge to younger colleagues. This is accomplished by training, maintaining their mental flexibility to carry out new tasks, managing work-life issues, and providing the necessary support in the transition from employee to retiree. At the end of 2016, we also initiated a programme in Belgium to provide career coaching for employees that wanted to reflect on their next career move within Umicore.

OTHER RELEVANT DEVELOPMENTS

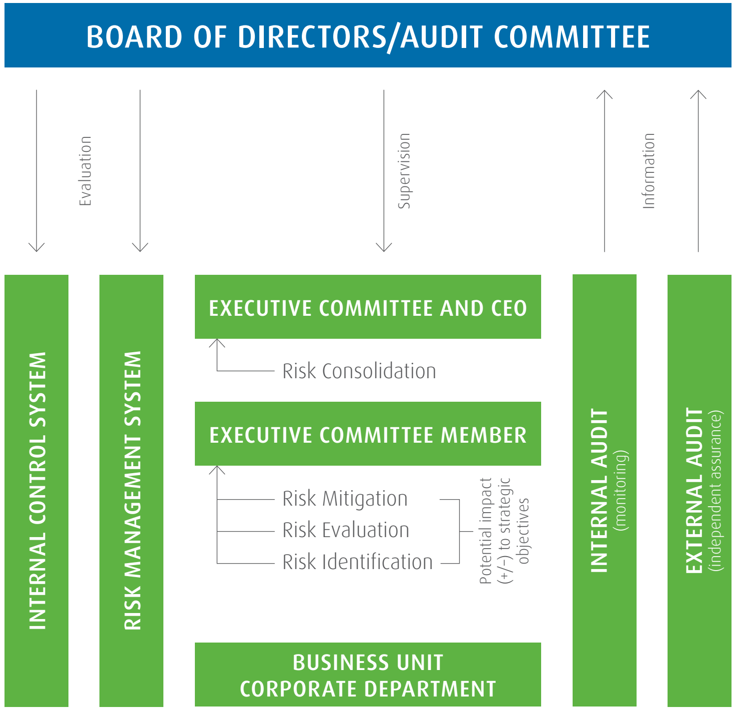
Umicore received Top Employer recognition for its sites in Belgium, France and Germany in 2016.

As part of the Global Framework Agreement on Sustainable Development between Umicore and the IndustriALL Global Union, we conducted a verification and site visit to the Automotive Catalysts plant in Suzhou, China.

RISK MANAGEMENT AND INTERNAL CONTROL

Managing risk effectively

WE TAKE A BALANCED APPROACH TO MANAGING RISK AND SEIZING OPPORTUNITIES. THIS GIVES US THE BEST MEANS OF DELIVERING ON OUR STRATEGIC GOALS



The aim of our risk management system is to:

- Enable the company to identify risks in a proactive and dynamic way; and
- Manage or mitigate risks to an acceptable level wherever possible

BOARD OF DIRECTORS

Umicore's Board of Directors is ultimately responsible for:

- Assessing the risk profile of the company within the context of the Company strategy and external factors; and
- Ensuring adequate risk management and internal control processes are in place.

EXECUTIVE COMMITTEE

Umicore's management is tasked with:

- Successfully exploiting business opportunities;
- Assessing how market conditions, competitor positioning, technology developments or regulatory changes can impact the execution of the business strategy; and
- Managing and mitigating possible business risks.

BUSINESS UNITS

Each of the business units operates in an environment which carries specific growth expectations and differing degrees of market and technological uncertainty which may impact our strategic objectives.

As such, the primary source of risk and opportunity identification lies within the business units themselves.

Umicore has established an assessment process to be carried out by each business unit.

1. Carry out a risk scan to identify all significant risks (financial and non-financial).

2. Describe each risk in detail on an "uncertainty sheet" outlining potential impact, likelihood, status of management action or mitigation, and ownership

3. Business units report bottom up to the Executive Committee member responsible for that business unit.

4. The Audit Committee (on behalf of the Board) performs a periodic review of the company's internal control and risk management system, investigating specific aspects on an ongoing basis.

Managing risk effectively

Each business unit is responsible for mitigation of its own risks. Mitigating actions are systematically reported corresponding to the respective strategic objectives and identified risks. Specific corporate departments are also tasked with managing and mitigating certain risks under the auspices of the Executive Committee. These risks cover Group-wide elements that extend beyond the purview of individual business units. These include environmental risks, financial risks etc.

OUR INTERNAL CONTROL SYSTEM

Internal control mechanisms exist throughout Umicore to provide management with reasonable assurance of the Company's ability to achieve its objectives. They cover:

- Effectiveness and efficiency of operations
- Reliability of financial processes and reporting
- Compliance with laws and regulations; and
- Mitigation of errors and fraud risks

Umicore adopted the COSO framework for its Enterprise Risk Management and has adapted its various controls constituents within its organisation and processes. "The Umicore Way" and the "Code of Conduct" are the cornerstones of the Internal Control environment; together with the concept of management by objectives and through the setting of clear roles and responsibilities they establish the operating framework for the company.

Specific internal control mechanisms have been developed by business units at their level of operations, while shared operational functions and corporate services provide guidance and set controls for cross-organisational activities. These give rise to specific policies, procedures and charters covering areas such as supply chain management, human resources, information systems, environment, health and safety, legal, corporate security and research and development.

Umicore operates a system of Minimum Internal Control Requirements (MICR) to specifically address the mitigation of financial risks and to enhance the reliability of financial reporting. Umicore's MICR framework requires all Group entities to comply with a uniform set of internal controls in 12 processes. Within the Internal Control framework, specific attention is paid to the segregation of duties and the definition of clear roles and responsibilities. MICR compliance is monitored by means of self-assessments to be signed off by senior management. The outcome is reported to the Executive Committee and the Audit Committee of the Board of Directors.

In 2016, five processes were assessed covering 113 control entities. Priority was given to those processes that are of particular importance to Umicore such as hedging, procurement and inventory management. The level of compliance is in line with the results previously reported. The Internal Audit department will review the compliance assessments during its missions.

Identifying the main issues that could impact our business

WE UNDERSTAND THAT KEY RISKS TO OUR BUSINESS MIGHT ALSO OFFER UNIQUE OPPORTUNITIES FOR US TO GROW AND CREATE VALUE

1 REGULATORY AND LEGAL CONTEXT

STRATEGIC FOCUS AREA
- Economic performance
- Value chain and society
- Eco-efficiency

CHANGE IN RISK PROFILE
↑ Increase

CHANGE IN OPPORTUNITY PROFILE
↑ Increase

POTENTIAL IMPACT
- Umicore is exposed to the evolution of the regulatory environment in the countries or regions in which it operates.
- Umicore's businesses stand to benefit from certain regulatory trends, notably those regarding more stringent emission controls for vehicles, low carbon mobility and enforced recycling of end-of-life products.
- Some regulations – such as environmental or product-related laws – can present operational challenges, higher costs and potentially an uneven competitive environment.
- The growth in technology driven businesses induces a potentially higher risk of IP related disputes.

DEVELOPMENTS IN 2016
- The most significant regulatory opportunities and risks are related to the three megatrends that are most relevant to Umicore – resource scarcity, clean air and electrified mobility. The development in these areas are covered in detail in the global trends section on pages 12 to 14.
- In terms of regulations related to product safety and sustainability, including product information, the REACH registration process moved towards its final phase. For Umicore this represents 252 registrations. More information on this topic can be found in the environmental statements on pages 199-200.
- In terms of legal risk please refer to the contingencies section (see page 160 for the note F36). This relates primarily to cases brought against Umicore in the domain of cathode materials for rechargeable battery materials.

UMICORE POSITIONING IN 2016
- Umicore continued to invest in and commission new production facilities (Poland, Thailand, US) and develop new products to enable its customers in the automotive industry to meet more stringent vehicle emission regulations. These include norms such as Euro 6b in Europe.
- Umicore took steps to ensure its ability to meet the surging demand for cathode materials for rechargeable batteries used in electrified transportation in the coming years. This involves an investment to triple the production capacity of cathode material in China and South Korea by the end of 2018.
- Umicore played an active role in informing European legislators about the capabilities of various emission control technologies for both diesel and gasoline powered vehicles. This was in order to help legislators make informed decisions about future emission and testing norms.

Identifying the main issues that could impact our business

2 SUSTAINABLE AND ETHICAL SUPPLY

STRATEGIC FOCUS AREA
- Economic performance
- Value chain and society

CHANGE IN RISK PROFILE
Increase

CHANGE IN OPPORTUNITY PROFILE
Increase

POTENTIAL IMPACT
- Umicore requires certain metals or metal-containing raw materials in order to manufacture its products and feed its recycling activities. Some of these raw materials are comparatively scarce and require very specific sourcing strategies. Obtaining adequate supplies of these materials is important for the ongoing success and growth of our business. Some metals are also found in regions facing environmental and social challenges or which are affected by conflict. Ensuring that our procurement of such materials does not contribute to such problems is important for our overall license to operate as well as for our reputation and that of our customers.
- Conversely, being able to access sufficient quantities of these materials in a suitably responsible way can provide us with a competitive advantage.

DEVELOPMENTS IN 2016
- The focus on conflict minerals strengthened further with the EU agreeing on a framework similar in scope to the US Dodd Frank Act that was implemented in 2012.
- There was a growing awareness around the conditions in which cobalt is mined in the Democratic Republic of Congo. Various NGOs such as Amnesty International as well as international media raised awareness of the social and environmental challenges related to cobalt sourcing.

UMICORE POSITIONING IN 2016
- Umicore further refined its Sustainable Procurement Framework for cobalt. In 2016 Umicore obtained a validation by a third party assurance provider that its cobalt supplies were in conformity with the Framework. This provides additional comfort to customers about the ethical sourcing of our cobalt. For more information see our online case study.
- As part of the Horizon 2020 objective on "sustainable supply" Umicore has identified the raw materials that are critical to the realisation of its growth ambitions. Each business unit is responsible for defining a procurement approach that ensures continuity of supply. For more information on this objective please see pages 196-198 of this report.
- Umicore continued to ensure that all of its operations that are involved in gold recycling and refining are certified as conflict-free under the aegis of specific industry assurance standards More information can be found. For more information see the sustainable supply section on pages 196 to 198. To access Umicore's conflict minerals policy see here.

Identifying the main issues that could impact our business

3 TECHNOLOGY AND SUBSTITUTION

STRATEGIC FOCUS AREA
- Economic performance
- Value chain and society
- Eco-efficiency

CHANGE IN RISK PROFILE

No change

CHANGE IN OPPORTUNITY PROFILE

Increase

POTENTIAL IMPACT

- Umicore is a materials technology Group with a strong focus on the development of innovative materials and processes. The choice and development of these technologies represents the single biggest opportunity and risk for Umicore.
- Achieving the best cost-performance balance for materials is a priority for Umicore and its customers. There is always a risk that customers will seek alternative materials to integrate in their products should those of Umicore not provide this optimum balance. The risk is especially present in those businesses producing materials containing expensive metals (especially those with historically volatile pricing characteristics).

DEVELOPMENTS IN 2016

- The evolution in the area of rechargeable battery materials for automotive applications has underscored that NMC materials are the technology of choice for customers in current and upcoming electrified vehicle platforms.
- In vehicle emission control, the regulatory debates sparked by the diesel-gate affair reinforced the need to have a broad spectrum of technologies available for both gasoline and diesel applications.

UMICORE POSITIONING IN 2016

- Every year, the Executive Committee identifies a number of innovation projects (“Top 10”) which are key to achieve Horizon 2020 (and beyond) growth ambitions and cover product and process developments. A selection of these projects are reviewed during the year either through dedicated technology reviews or as part of strategic business reviews.
- Umicore continued to invest strongly in R&D during 2016. Overall spend was the equivalent of 5.8% of revenues.
- In 2016 Umicore registered 50 new patent families.
- For more information on Umicore’s approach to managing its innovation and technology portfolio see pages 63-64.

Identifying the main issues that could impact our business

4 MARKET

STRATEGIC FOCUS AREA
- Economic performance
- Value chain and society

CHANGE IN RISK PROFILE

No change

CHANGE IN OPPORTUNITY PROFILE

Increase

POTENTIAL IMPACT

- The main end markets served by Umicore are automotive (for clean mobility products) and non-ferrous metal mining and refining industries (recycling activities). Umicore is sensitive to any major growth or global reduction in activity levels in these sectors.
- Activity levels in other areas of the economy such as consumer electronics and construction are also relevant to Umicore as are the levels of activity in specific industries or at specific customers where Umicore provides closed-loop recycling services.
- In the longer term, market disruptions such as new models of consumption have the possibility to significantly alter the landscape of the markets that Umicore serves, posing risks as well as creating new opportunities.

DEVELOPMENTS IN 2016

- Overall, the global economic outlook remained rather stable in 2016. Market forecasts for the coming years continue to point to low growth in developed economies with global growth expected to be driven mainly by Asian markets and China in particular.
- The automotive industry performed very well with higher levels of demand in several regions and a remarkable acceleration in demand for electrified vehicles.
- In all important markets, more stringent vehicle emission legislation has come into force or has been announced for the coming years.

UMICORE POSITIONING IN 2016

- Umicore's growing presence in fast-growing market segments that are driven by global megatrends meant that our economic performance in 2016 again far outstripped that of the economy in general and that of most of our competitors.
- The Executive Committee undertook a review of potentially disruptive market and technology trends in automotive and discussed its findings with the Board of Directors.

Identifying the main issues that could impact our business

5 METAL PRICE

STRATEGIC FOCUS AREA
- Economic performance

CHANGE IN RISK PROFILE

No change

CHANGE IN OPPORTUNITY PROFILE

No change

POTENTIAL IMPACT

- Umicore's earnings are exposed to risks relating to the prices of the metals which we process or recycle. The structural metal price risk relates mainly to the impact that metal prices have on the surplus metals recovered from materials supplied for recycling. It concerns platinum, palladium, rhodium, gold and silver as well as a wide range of base and specialty metals.
  For some metals quoted on futures markets, Umicore hedges a proportion of its forward metal exposure in order to cover part of the future price risks.
  For more information on the structural risk, as well as on the transactional and inventory risk related to the metal prices, please refer to pages 106-107 of this report.

DEVELOPMENTS IN 2016

- 2016 was marked by a volatile metal price environment. Gold and silver prices increased during the first nine months of the year followed by corrections during the last quarter. Despite some spikes during the year, prices for the PGM metals remained well below the levels seen in recent years. Demand and prices for specialty metals remained subdued.

UMICORE POSITIONING IN 2016

- Over the course of 2016, Umicore entered into forward contracts securing a portion of its structural price exposure for certain precious metals and base metals in 2017 and 2018, thereby increasing earnings predictability.

Identifying the main issues that could impact our business

6 TALENT ATTRACTION AND RETENTION

STRATEGIC FOCUS AREA
- Great place to work

CHANGE IN RISK PROFILE

Increase

CHANGE IN OPPORTUNITY PROFILE

No change

POTENTIAL IMPACT

- The attraction and retention of skilled people are important factors in enabling Umicore to fulfil its strategic ambitions and to build further expertise, knowledge and capabilities in the business. Being unable to do so would compromise our ability to deliver on our goals.

DEVELOPMENTS IN 2016

- Horizon 2020 is predicated on disproportionate growth for Umicore in Asia – a region characterised by highly competitive and fluid labour markets. Umicore's challenge is to attract and retain talent in the region on a sufficient scale and at an appropriate pace.

UMICORE POSITIONING IN 2016

- As a result of the successful completion of our Vision 2015 objectives, we have attained preferred employer status for the majority of operations around the world and has ensured that all employees have an annual performance appraisal. The challenge for Horizon 2020 is to build on this and further improve engagement levels within the company. Measures taken to achieve this are detailed on pages 34 to 36 and include initiatives to improve collaboration, manage and encourage diversity and broaden learning and career development opportunities (see online case study). A significant proportion of Asian talent has been involved in such group-wide talent development action in order to promote mobility and create more possibilities for career growth.
- Umicore developed a specific recruitment initiative to ensure that we are able to attract people with the right mix of skills to work in the expanding rechargeable battery materials operations in South Korea and China.
- In order to enhance Umicore's employer brand we have defined a project to develop a global employer brand with a special focus on challenging labour markets in Europe and Asia. The project is expected to be implemented by the end of 2017.
- Construction of the new automotive catalyst production facility in Thailand was completed and the facility was fully staffed during the course of 2016. The plant started production less than two years after the investment plans were announced.

THOMAS LEYSEN

1960 | Belgian

- Chairman, Non-Executive Director
- First appointment: 19 November 2008 (director since 10 May 2000)
- Expiry of mandate: Annual general meeting of 2018
- Nomination & Remuneration Committee: chairman (19 November 2008)

EXPERIENCE

Thomas Leysen became Chairman of Umicore in November 2008 after having served as Chief Executive Officer of Umicore since 2000. Since October 2011 he is Chairman of the board of KBC Group, a banking and insurance group.

CURRENT EXTERNAL APPOINTMENTS

- Chairman of KBC Group, Belgium
- Chairman of Corelio, a Belgian media company
- Chairman of the King Baudouin Foundation
- Chairman of The Shift, a Belgian meeting point for sustainability

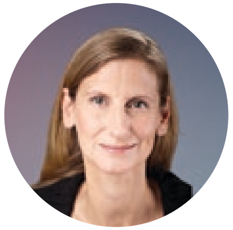
MARC GRYNBERG

1965 | Belgian

- Chief Executive Officer, Executive Director
- First appointment: 19 November 2008
- Expiry of mandate: Annual general meeting of 2018
- Chief Executive Officer since: 19 November 2008

EXPERIENCE

Marc Grynberg was appointed Chief Executive Officer of Umicore in November 2008. He was head of the Group's Automotive Catalysts business unit from 2006 to 2008 and served as Umicore's CFO from 2000 until 2006. He joined Umicore in 1996 as Group Controller. Marc holds a Commercial Engineering degree from the University of Brussels (Ecole de Commerce Solvay) and, prior to joining Umicore, worked for DuPont de Nemours in Brussels and Geneva.



INES KOLMSEE

1970 | German

- Independent, Non-Executive Director
- First appointment: 26 April 2011
- Expiry of mandate: Annual general meeting of 2017
- Audit Committee: chairman (28 April 2015 – member since 26 April 2011)

EXPERIENCE

Ines Kolmsee holds several degrees in engineering (TU Berlin, Germany and Ecole des Mines de Saint-Etienne, France) as well as an MBA degree (Business School INSEAD – France/Singapore). From 2004 to 2014 she was Chief Executive Officer of SKW Stahl-Metallurgie Group, a specialty chemicals company with operations worldwide. After working as an entrepreneur in the rural electrification sector, she joined EWE AG, a large German utility company as CTO until December 2016. In the past she also occupied different positions, including as Chief Financial Officer at Arques Industries AG.

CURRENT EXTERNAL APPOINTMENTS

- Member of the Supervisory Board of Suez Environnement S.A., France

BARBARA KUX

1957 | Swiss

- Independent, Non-Executive Director
- First appointment: 1 January 2014
- Expiry of mandate: Annual general meeting of 2017
- Nomination & Remuneration Committee: member (1 January 2014)

EXPERIENCE

Barbara Kux holds an MBA with Distinction from INSEAD. She was a member of the Managing Board at Siemens AG with the responsibility for a major improvement in supply chain management and sustainability. Prior to that, she held management positions in leading global companies and was a Management Consultant at McKinsey. In 2016 she has been appointed by the European Commission to the newly established high-level Decarbonisation Pathways Panel.

CURRENT EXTERNAL APPOINTMENTS

- Member of the Board of Directors of Engie, France
- Member of the Board of Directors of Total, France
- Member of the Board of Directors of Firmenich, Switzerland
- Member of the Board of Directors of Pargesa Holding, Switzerland
- Member of the Supervisory Board of Henkel, Germany
- Member of the Advisory Board of INSEAD, France

RUDI THOMAES

1952 | Belgian

- Independent, Non-Executive Director
- First appointment: 24 April 2012
- Expiry of mandate: Annual general meeting of 2018
- Audit Committee: member (30 April 2013)
- Nomination & Remuneration Committee: member (24 April 2012)

EXPERIENCE

Rudi Thomaes studied law at the University of Antwerp. He was the Chief Executive Officer of the Belgian employers' federation (FEB-VBO) and Regent of the National Bank of Belgium (2004-2012). He previously served as Managing Director and Chairman of the management committee of Alcatel Bell NV.

CURRENT EXTERNAL APPOINTMENTS

- Honorary President of the Belgian Chapter of the International Chamber of Commerce
- Chairman of Restore NV (energy technology start-up), Belgium
- Chairman of Armonea NV, Belgium

ERIC MEURICE

1956 | French

- Independent, Non-Executive Director
- First appointment: 28 April 2015
- Expiry of mandate: Annual general meeting of 2018

EXPERIENCE

Eric Meurice was formerly President and Chief Executive Officer of Dutch-based ASML Holding, a major provider of advanced technology systems for the semiconductor industry. Eric was previously Executive Vice President in charge of Thomson Multimedia TV Division and prior to that he held senior positions in several technology groups such as Intel, ITT and Dell Computer. He holds Master's degrees in Economics and Mechanical Engineering from the Sorbonne and Ecole Centrale de Paris (France) respectively and an MBA from Stanford (US).

CURRENT EXTERNAL APPOINTMENTS

- Non-Executive Director of NXP Semiconductors, The Netherlands
- Non-Executive Director of IPG Photonics, USA

MARC GARRETT

1962 | Australian/Swiss

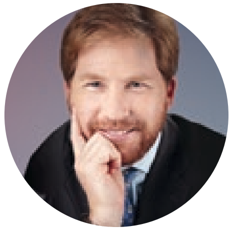
- Independent, Non-Executive Director
- First appointment: 28 April 2015
- Expiry of mandate: Annual general meeting of 2018
- Audit Committee: member (28 April 2015)

EXPERIENCE

Marc Garrett has enjoyed a long career in the chemical industry working with well-known companies such as Ciba-Geigy and DuPont. Since 2007, Mark is CEO and Chairman of the Borealis Executive Board. Borealis is an Austrian based leading provider of innovative solutions in the field of polyolefins, base chemicals and fertilisers. He graduated in Economics and Systems Analysis from the University of Melbourne and the Royal Melbourne Institute of Technology respectively.

CURRENT EXTERNAL APPOINTMENTS

- CEO and Chairman of the Borealis Executive Board, Austria
- Member of the Board of Directors of Abu Dhabi Polymers Company Ltd. (Borouge ADP, a joint venture between Borealis and the Abu Dhabi National Oil Company), UAE
- Member of the Board of Directors of NOVA Chemicals, Canada
- Member of the Board of Directors of Axalta Coating System, USA
- Member of the Supervisory Board of Webster University, USA



JONATHAN OPPENHEIMER

1969 | South African

- Non-Executive Director
- First appointment: 5 September 2001
- Expiry of mandate: Annual general meeting of 2017

EXPERIENCE

Jonathan Oppenheimer has responsibility for various Oppenheimer Family investment activities across different asset classes. Within the group he chairs Tana Africa Capital, an Africa-focused joint venture with Temasek, and sits on a number of other boards. He is primarily focused on the direct investment activities of the group in Africa. Jonathan was an Executive Director of De Beers S.A. from 2006-2012, working in a variety of roles.

CURRENT EXTERNAL APPOINTMENTS

- Chairman of Tana Africa Capital, South Africa
- Various other mandates related to Ernest Oppenheimer & Son, South Africa

IAN GALLIENNE

1971 | French

- Non-Executive Director
- First appointment: 28 April 2015
- Expiry of mandate: Annual general meeting of 2018

EXPERIENCE

Ian Gallienne is Co-CEO Director of Groupe Bruxelles Lambert (GBL), Umicore's largest shareholder. He has been a Director of GBL since 2009 and Co-CEO since January 2012. Ian began his career in Spain, in 1992, as co-founder of a commercial company. From 1995 to 1997, he managed a consulting firm specialised in the reorganisation of ailing companies in France. From 1998 to 2005, he was Director at the private equity funds Rhône Capital LLC in New York and London. In 2005 he founded the private equity funds Ergon Capital Partners in Brussels and was its Managing Director until 2012. Ian Gallienne is a Non-Executive Director at adidas, Imerys, Pernod Ricard and SGS. He holds an MBA from INSEAD in Fontainebleau.

CURRENT EXTERNAL APPOINTMENTS

- CEO of GBL, Belgium
- Non-executive Director at Adidas, Germany
- Non-executive Director at Imerys, France
- Non-executive Director at Pernod Ricard, France
- Non-executive Director at SGS, Switzerland

COLIN HALL

1970 | American

- Non-Executive Director
- First appointment: 26 April 2016
- Expiry of mandate: Annual general meeting of 2019

EXPERIENCE

Colin Hall is currently the Head of Investments at Groupe Bruxelles Lambert (GBL). He began his career in 1995 in the merchant banking group of Morgan Stanley. In 1997, he joined Rhône Group, a private equity firm, where he held various positions for 10 years in New York and London. In 2009, he was the co-founder of a hedge fund, sponsored by Tiger Management, where he worked until 2011. In 2012 he became CEO of Sienna Capital, a 100% subsidiary of GBL, which manages GBL's alternative investments (private equity, credit and specific thematic funds). In 2016, Colin was appointed Head of Investments at GBL. He holds a BA from Amherst College and an MBA from the Stanford University Graduate School of Business.

CURRENT EXTERNAL APPOINTMENTS

- Director and Member of the Audit Committee of Imerys, France
- Director of the Supervisory Board of the credit fund Kartesia Management, Luxembourg
- Director of Ergon Capital Partners, Belgium

FRANÇOISE CHOMBAR

1962 | Belgian

- Independent, Non-Executive Director
- First appointment: 26 April 2016
- Expiry of mandate: Annual general meeting of 2019

EXPERIENCE

Françoise Chombar is co-Founder, Chief Executive Officer and Director of Melexis, a producer of integrated semiconductor sensor, driver and communication circuits for automotive applications. Prior to assuming her role at Melexis she was responsible for Production Planning and Customer Service at Elmos GmbH (Germany). She also worked for the Elex group, where she had different functions such as Purchasing Officer. Françoise was a mentor in the women's network Sofia for 17 years. Françoise Chombar's long-term commitment to actively advocating more Science, Technology, Engineering or Mathematics education and more gender balance is driven by the profound belief in their positive societal impact. She holds a master's degree as Interpreter in Dutch, English and Spanish from Ghent University, where she received an Honorary Ambassadorship for Applied Language Studies in January 2012.

CURRENT EXTERNAL APPOINTMENTS

- CEO and Director of Melexis, Belgium
- President of the STEM Advisory Board to the Flemish Government

KAREL VINCK

1938 | Belgian

- Honorary Chairman

From left to right: Stephan Csoma, Géraldine Nolens, Filip Platteeuw, Marc Van Sande, Pascal Reymondet, Marc Grynberg, Denis Goffaux

MARC GRYNBERG

1965

CHIEF EXECUTIVE OFFICER

Marc Grynberg was appointed Chief Executive Officer of Umicore in November 2008. He was head of the Group's Automotive Catalysts business unit from 2006 to 2008 and served as Umicore's CFO from 2000 until 2006. He joined Umicore in 1996 as Group Controller. Marc holds a Commercial Engineering degree from the University of Brussels (Ecole de Commerce Solvay) and, prior to joining Umicore, worked for DuPont de Nemours in Brussels and Geneva.

FILIP PLATTEEUW

1972

CHIEF FINANCIAL OFFICER

Filip Platteeuw joined Umicore in 2004 and was instrumental in the Cumerio spin-off in 2005. He then led the project team for the creation of Nyrstar and its successful IPO in 2007. He became Vice President of Corporate Development in 2010. He took up the position of Chief Financial Officer (CFO) in November 2012. Filip holds a master's degree in Applied Economics from the University of Ghent and a master's degree in Financial Management from the Vlerick Management

School. Filip has extensive experience in investment banking, corporate banking and equity research with KBC Bank. He is also responsible for Corporate Development, InfoDoc and Procurement & Transportation.

DENIS GOFFAUX

1967

CHIEF TECHNOLOGY OFFICER

Denis Goffaux holds a degree in mining engineering from the University of Liège. He joined Umicore Research in 1995 and has lived and worked in Belgium, Chile, China and Korea. He was head of the Rechargeable Battery Materials business line and successfully developed the business into a world leader in cathode materials for lithium ion rechargeable batteries. In his capacity as Country Manager Japan, Denis Goffaux laid strong foundations for Umicore to grow its industrial presence and commercial activities in Japan. He was appointed to his present post in July 2010. Besides his position as Chief Technology Officer, he is responsible for the Precious Metals Refining business (part of Recycling).

PASCAL REYMONDET

1959

EXECUTIVE VICE-PRESIDENT CATALYSIS

Pascal Reymondet holds an MSc from Stanford University and an Engineering degree from the Ecole Centrale in Paris. He held different management positions within the Degussa group including management of the Port Elizabeth and Burlington automotive catalyst plants. He joined the Umicore Executive Committee in 2003 to be in charge of the Precious Metals Products group. In September 2007, he was appointed to head the Zinc Specialties business group. In June 2010 he assumed responsibility for the Performance Materials business group. Since November 2012 he is responsible for the business group Catalysis.

MARC VAN SANDE

1952

EXECUTIVE VICE-PRESIDENT ENERGY & SURFACE TECHNOLOGIES

Marc Van Sande holds a PhD in Physics from the University of Antwerp as well as an MBA. He joined Umicore in 1980, and held several positions in research, marketing and production. In 1993 he was appointed Vice-President of the Electro-Optic Materials business unit and he joined the Executive Committee as Executive Vice-President of Advanced Materials in 1999. He assumed the role of Chief Technology Officer between 2005 and 2010 after which he took the helm of the Energy & Surface Technologies business group (previously Energy Materials).

STEPHAN CSOMA

1964

EXECUTIVE VICE-PRESIDENT RECYCLING

Stephan Csoma joined Umicore in 1992. He holds diplomas in economics from the UCL University of Louvain and Chinese/Mandarin from Fudan University in Shanghai. He set up Umicore's first industrial operations in China in the mid-1990s. Between 2001 and 2005, he led the Zinc Chemicals business unit and from 2005 to 2009 he was SVP for Umicore South America. Between 2009 and 2012 he was SVP for the newly-established Government Affairs. He joined the Executive Committee in 2012 as EVP of the former Performance Materials business group. He assumed his current responsibilities in 2015 with continued oversight for Government Affairs and Umicore Marketing Services.

GÉRALDINE NOLENS

1971

EXECUTIVE VICE-PRESIDENT

Géraldine Nolens joined Umicore in 2009. She studied law in Belgium and Germany before obtaining her LL.M at the University of Chicago. She started her career at the international law firm Cleary Gottlieb Steen & Hamilton before joining GDF Suez (now Engie) in 2001 where she was Electrabel's Chief Legal Officer for Southern Europe, France and new European markets. Her career has involved periods working and living in the US, Germany, Italy and Belgium. She joined the Executive Committee in 2015. She is Umicore's Chief Counsel and has responsibility for Environment Health & Safety, Corporate Security and Internal Audit.

Key figures

(in million EUR unless stated otherwise)	2012	2013	2014	2015	2016
ECONOMIC PERFORMANCE					
Turnover*	12,548.0	9,819.3	8,828.5	10,441.9	**11,085.9**
Revenues (excluding metal)	2,421.4	2,363.4	2,366.5	2,629.0	**2,667.5**
Recurring EBIT	372.1	304.0	273.7	330.3	**350.7**
Return on Capital Employed (ROCE) (in %)	16.7	13.6	12.2	13.7	**14.6**
R&D expenditure	149.0	140.6	143.3	144.5	**155.9**
Capital expenditure	235.9	279.6	202.4	240.3	**287.3**
Recurring EPS (in EUR/share)	2.47	1.96	1.79	2.27	**2.14**
Gross dividend (in EUR/share)	1.00	1.00	1.00	1.20	**1.30**
SOCIAL AND ENVIRONMENTAL PERFORMANCE					
Revenues from clean mobility and recycling (in %)	–	–	–	–	**62.0**
Total donations (in thousand EUR)	1,759.18	1,612.80	1,409.35	1,219.38	**1,289.68**
CO_2e emissions (scope1+2) – Market based (in tonne)	701,898	690,767	664,568	710,143	**666,814**
CO_2e emissions (scope1+2) – Location based (in tonne)	–	–	–	–	**739,820**
Energy consumption (in terajoules)	7,315	7,557	7,304	7,742	**6,760**
Workforce (fully consolidated companies)	10,396	10,190	10,368	10,429	**9,921**
Lost Time Accidents (LTA)	49	35	37	47	**59**
LTA frequency rate	2.86	2.08	2.16	2.66	**3.34**
LTA severity rate	0.11	0.10	0.94	0.12	**0.56**
Exposure ratio 'all biomarkers aggregated' (in %)	4.3	2.6	1.8	2.3	**3.2**
Average number of training hours per employee	50.72	45.18	45.59	45.06	**41.49**
Voluntary leavers ratio	3.20	3.33	3.42	3.35	**4.10**

* Including the elimination of the transactions between continued and discontinued operations.

For enquiries and additional information please contact

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B-1000 Brussels
Belgium

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www.umicore.com/en/contact

umicore
materials for a better life

Governance and statements

Annual report 2016

Contents

Governance and statements

Stakeholder engagement

Umicore is a publicly listed company. As such, it interacts with a number of parties who have an interest in the way in which the company conducts business. The relationship that the company is able to foster with these parties or stakeholders has a direct impact on the company's success.

Stakeholder engagement at Umicore is, in the first instance, based on a localised approach whereby all sites are required to identify their respective stakeholders and to establish suitable ways of engaging with local stakeholders. This approach was formalised in the Vision 2015 objective relating to local communities. In many instances, such as the dialogue with customers and suppliers, the stakeholder relationships are primarily managed by the business units themselves, in line with Umicore's de-centralised approach to managing its businesses. The Executive Committee receives feedback in different ways from stakeholders. This can range from direct feedback from visits to customers, suppliers, employees and investors to information provided by the business units, departments or workers' representatives during their regular briefings to senior management. Other forms of input include channels such as the periodic employee survey results.

The Horizon 2020 strategy represents a strong focus on what is of material importance for Umicore in the coming five years. The development of the strategy has involved a specific stakeholder approach, described in the materiality assessment process in the next chapter.

Umicore is an active participant in various industry associations through which it engages with policy makers in order to contribute to the better understanding of industry-related issues. These associations are also important platforms for Umicore to contribute to broader, industry-wide action on sustainable development. On a less formal level, members of Umicore's senior management are often called upon or volunteer to participate in public fora to discuss Umicore's business performance and sustainable development approach. Such events provide the opportunity to interact with various groups including business leaders, academics and civil society.

Highlighted below are Umicore's main stakeholder groups. These have been categorised in broad terms using generic stakeholder categories that apply to most industrial organisations. Also shown are the nature of the transactions that occur and a brief description of how the dialogue between Umicore and the stakeholders operates.

SUPPLIERS

UMICORE PROVIDES: REVENUES

SUPPLIERS PROVIDE: RAW MATERIALS, TRANSPORTATION, ENERGY AND OTHER GOODS AND SERVICES

Umicore operates through three business groups on five continents. These business groups not only require materials to make their products but also energy, transportation and a range of other services. Overall Umicore has more than 10,000 suppliers world-wide. These suppliers benefit from Umicore's presence as a customer; during 2016 Umicore paid these suppliers some EUR 9.0 billion (including the metal content of raw materials).

Umicore is engaged in constant dialogue with its suppliers, primarily to define technical specifications as well as to ensure mutually acceptable terms and conditions for continued partnership such as prompt and uninterrupted delivery of materials / services and timely payment. The business units are primarily responsible for the purchases of raw materials while the corporate Purchasing and Transportation department is involved in ensuring the Group's transportation, energy and other provisioning needs are met.

Umicore's approach is shaped by its Sustainable Procurement Charter. This charter is complemented by specific approaches or frameworks, especially for some critical raw materials. Our Horizon 2020 strategy includes an objective on sustainable supply that builds on the experience gained through the Vision 2015 objective on sustainable procurement. For information on the level of achievement on this objective please see pages 28-30 of this report.

CUSTOMERS

UMICORE PROVIDES: MATERIALS AND SERVICES

CUSTOMERS PROVIDE: REVENUES

Umicore's ambition is to produce "materials for a better life". The company's materials can be found in a wide variety of applications that make day-to-day life more comfortable and which help contribute to a cleaner environment.

Umicore has an international customer base, with 51% of 2016 revenues being generated outside Europe.

The business units are responsible for providing support to their customers in order to better understand the hazards and risks of any products that are either in the market or in development. Interaction with customers is an on-going process and is managed by the business units. All business units have a customer feedback process where they are able to gauge periodically the level of customer satisfaction with their products and services. In the most technologically advanced businesses the relationship with the customer is often closely integrated. Developing advanced products often involves years of research and development work in direct collaboration with such customers.

EMPLOYEES

UMICORE PROVIDES: REMUNERATION, TRAINING AND LEARNING OPPORTUNITIES

EMPLOYEES PROVIDE: SKILLS, COMPETENCES & PRODUCTIVITY

Umicore employs some 10,000 people around the world. The company invests significant resources in ensuring its status as an employer of choice in all the regions in which it operates. During 2016 Umicore paid a total of EUR 540 million in the form of salaries and other benefits to the employees of its fully consolidated companies. Social security payments totalled EUR 95 million.

Umicore is committed not only to providing competitive salaries and working conditions to its employees but also to providing the necessary occupational and professional training opportunities. Employees are expected to adhere to the principles and policies outlined in The Umicore Way and Umicore's Code of Conduct. Open dialogue is promoted between the company and its employees. This dialogue includes a three-yearly employee opinion survey.

Umicore respects the principle of collective bargaining wherever it is requested. While such practice is commonplace in Europe, in some other locations collective bargaining mechanisms and trade unions are less common or face local legal restrictions. Umicore has a sustainable development agreement with the international union IndustriALL on the global Group-wide implementation of its policies on human rights, equal opportunities, labour conditions, ethical conduct and environmental protection. The agreement allows trade unions to participate constructively in the pursuit of these objectives. A joint monitoring committee composed of both parties sees to the implementation of the agreement.

Supplementary channels of company-wide communication include the Group intranet and company and business unit newsletters. Umicore operates a Group-wide learning management platform called "MyCampus". This platform also incorporates a social collaboration tool that facilitates knowledge sharing through the company.

INVESTORS AND FUNDERS

UMICORE PROVIDES: RETURN ON INVESTMENT

INVESTORS PROVIDE: CAPITAL AND FUNDS

At the end of 2016 the company's shareholders were primarily situated in Europe and North America. For the latest information on the shareholder base please consult our website.

Umicore strives to provide timely and accurate company information to the investment community. These communication efforts include management roadshows and site visits, conferences, investor fairs for individual investors, webcasts and conference calls. During 2016, 18 brokerage firms published equity research notes on Umicore.

Banks make up the vast majority of the company's creditors and debt investors. Umicore has credit lines with numerous banks both in Belgium and elsewhere.

Dialogue with the banks is primarily the responsibility of the corporate Finance Department although each legal entity within Umicore maintains business relationships with the banking community.

SOCIETY

UMICORE PROVIDES: WEALTH AND INNOVATIVE PRODUCTS AND PROCESSES

SOCIETY PROVIDES: LICENCE TO OPERATE

Through employment Umicore participates in the generation of wealth in the areas in which it operates. Although wealth generation is an obvious benefit, the manner in which this wealth is generated is also of great importance. Ultimately Umicore can only continue operating if it has the licence to do so from society. In order to maintain this licence, Umicore does the utmost to operate in a way which promotes sustainable development. This goes beyond operating within the legally defined boundaries set for all companies. Umicore sets its own standards which are applicable across the Group and which frequently surpass the demands of legislation in many areas where the company operates. In addition to this commitment to sound operating practices, Umicore also strives to develop materials which will enhance peoples' quality of life.

Contact with the communities in which Umicore operates is the most direct way in which the company can interact with society. Open and transparent dialogue with such communities is an integral part of Umicore's stakeholder engagement. Certain civil society groups (non-governmental organisations) also periodically declare a stake in Umicore's operations and the way the company does its business. Umicore welcomes such interest and attempts to engage with such groups in an open and constructive manner.

Umicore makes voluntary contribution at site and Group level to a range of charitable causes in line with an internal policy and guidelines. Umicore manages Group-level engagement efforts through a Group Donations Committee which has the mandate of engaging with civil society groups and determining the extent of partnerships at Group level. For information on these initiatives in 2016 please see pages 200-201 of this report.

ASSOCIATE AND JOINT VENTURE COMPANIES

UMICORE PROVIDES: INVESTMENT AND GUIDANCE

ASSOCIATE AND JOINT VENTURE COMPANIES PROVIDE: CONTRIBUTION TO UMICORE PROFITS, TECHNOLOGICAL COMPLEMENTARITIES, MARKET ACCESS

Umicore has investments in various business activities over which it does not exercise full management control. Associate companies are those in which Umicore has a significant influence over the financial and operating policies, but no control. Typically this is evidenced by ownership of between 20% and 50% on the voting rights, while joint ventures usually entail a 50:50 split in ownership and control. Joining forces is seen as a way to speed up technological developments or gain access to specific markets. Umicore has effective management control in half of the ten associate and joint venture companies in which it holds a stake. Where management control is not exercised by Umicore, representation on the Board of Directors is the way in which Umicore is able to guide and control the management and monitor business developments. Although Umicore cannot impose its own policies and procedures on any associate (or indeed any joint venture where it does not possess majority voting rights) there is a clear communication of Umicore's expectation that the operations be run in accordance with the principles of the Umicore Way.

Umicore is rigorous in safeguarding any intellectual property that it shares with associate or joint venture partners. A full list of associate and joint venture companies can be found on page 110 and 111 of this report.

PUBLIC SECTOR AND AUTHORITIES

UMICORE PROVIDES: TAXES

PUBLIC SECTOR AND AUTHORITIES PROVIDE: SERVICES AND FORMAL LICENCE TO OPERATE

Umicore paid a total of EUR 66 million in taxes as a result of its operations in 2016. Umicore and its employees also contributed a total of some EUR 95 million in social security payments. Umicore periodically enters into partnerships with public institutions such as universities with the primary aim of furthering certain research projects. Similarly, partnerships and research grants are occasionally contracted with public organisations. A total of some EUR 5.7 million of grants were awarded in 2016 relating primarily to planned R&D projects. Previously-awarded grants contributed for some EUR 7.2 million to the EBIT in 2016. The company has a policy of not making donations to political parties or organisations.

In 2016 Umicore continued its efforts to inform public policy and foster contacts with public authorities worldwide. These efforts are co-ordinated through the Government Affairs department and focus primarily on Europe and North America, as well as on China. Umicore aims to raise the profile and understanding of Umicore's technologies, and to add its voice to the discourse about materials-related issues. In Europe this has centred on three main topics: resource efficiency, with policies dealing with waste and raw materials as well as particular emphasis on the ongoing developments for a Circular Economy in the EU; advanced materials as a key enabling technology for low carbon technologies; material technologies for the purification of exhaust gases from automobiles and trucks with combustion engines. Umicore's initiatives also encompass gaining access to EU and national government funding and innovation networks, particularly in the context of programmes that support the development of breakthrough technologies with environmental benefits.

In several cases Umicore experts are invited as members of working groups and panels initiated by European or national authorities. In this respect we are part of, among others, the European Innovation Partnership for Raw Materials, the High Level Group on Key Enabling Technologies, the Steering Committee of EMIRI (Energy Materials Industrial Research Initiative) and the ERA-MIN network on industrial handling of raw materials for European Industries. Additionally, Umicore is part of the more than 100 partners which builds the Knowledge and Innovation Community on Raw Materials, a consortium to address the accessibility, availability and efficient use of raw materials in Europe.

When specific issues arise which are of interest to Umicore the company usually communicates its position through the industry groups to which it is affiliated. The company is mindful of the sensitivity of taking positions on issues of public interest. With this in mind Umicore has developed Group-wide guidelines regarding how this should be done in a responsible way. The main organisations of which Umicore is currently member (both at corporate and business unit level) are listed below:

CORPORATE

- European Round Table of Industrialists (ERT)
- Eurometaux (European Non-Ferrous Metals Association)
- European Technology Platform for Advanced Engineering Materials and Technologies (EuMaT)
- TransAtlantic Business Council
- American European Community Association (AECA)
- Agoria (Belgian multi-sector federation for the technology industry)
- Flemish Chamber of Commerce (VOKA)
- Flemish China Chamber of Commerce
- A3M (L' Alliance des Minerais, Minéraux et Metaux)
- Metalle pro Klima (initiative from WirtschaftsVereinigung Metalle)
- Belgian Indian Chamber of Commerce and Industry (BICC&I)

CATALYSIS

- Emission control associations at national level (US, SA, Brazil, China, India and European Union) – see www.automotivecatalysts.umicore.com/en/links/ for a selection of links
- German Chemical Federation (VCI)
- German Automotive Industry Association (VDA)

ENERGY & SURFACE TECHNOLOGIES

- Cobalt Development Institute
- Nickel Institute
- Energy Materials Industrial Research Initiative (EMIRI)
- European Association for Battery, Hybrid and Fuel Cell Electric Vehicles (AVERE)

RECYCLING

- European Electronics Recyclers Association (EERA)
- European Battery Recycling Association (EBRA)
- International Association of Portable Rechargeable Batteries (RECHARGE)
- International Platinum Group Metals Association
- International Precious Metals Institute
- European Precious Metals Federation
- Minor Metals Trade Association
- Fachvereinigung Edelmetalle (German Precious Metals Association)

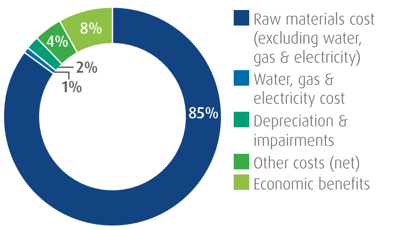
DISTRIBUTION OF ECONOMIC BENEFITS

Of Umicore's total income, the most significant portion was used to secure the metal component of raw materials (the cost of which is passed through to the customer). After subtracting other raw materials costs, energy-related costs and depreciation, the remaining economic benefits available for distribution stood at EUR 862 million.

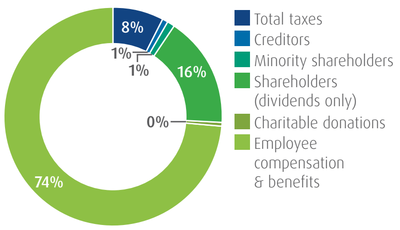
The biggest portion (EUR 640 million) was distributed to employees in the form of salaries and other benefits. The bulk of employee benefits were in the form of salaries, with the balance being in the form of national insurance contributions, pensions and other benefits. Net interest to creditors amounted to EUR 6 million, while taxes to the governments and authorities in the places where it operates, totalled EUR 66 million. The earnings attributed to minority shareholders were EUR 11 million.

Subject to approval by shareholders at the AGM in April 2017, a gross dividend of EUR 1.30 per share will be distributed for the year 2016, resulting in a total provisional pay-out of EUR 142 million (using the number of shares outstanding at the end of 2016). Of this figure a portion was already paid out in September 2016 in the form of an interim dividend, and the remainder will be paid out in 2017. This is in line with Umicore's policy of paying a stable or gradually increasing dividend. Umicore spent some EUR 1.2 million on charitable donations.

TOTAL INCOME (INCLUDING CONTRIBUTION FROM ASSOCIATES)



ECONOMIC BENEFITS



Materiality

Horizon 2020 represents continuity with Umicore's strategic choices of the past decade and sets out a further series of challenging economic, social and environmental goals for the company.

The definition of the environmental and social objectives for the Horizon 2020 strategy involved a materiality assessment to identify those areas that have the potential to turn sustainability into a greater competitive edge. This involved the following steps:

1. VALIDATING THE GLOBAL MEGATRENDS AND ASSESSING THE ACHIEVEMENTS AND SHORTFALLS OF VISION 2015

A. VALIDATING THE GLOBAL MEGATRENDS

In 2014-15, the Executive Committee conducted a detailed scanning of the four megatrends that underpin Umicore's growth ambitions. This illustrated clearly that three of these four major megatrends were strengthening: resource scarcity, the need for clean air and vehicle electrification (see pages 12-14 for more explanation on these megatrends). The one area where the landscape had shifted significantly was in photovoltaics, the fourth megatrend, where a combination of economics and technology choices led to a less favourable market for Umicore's higher-end solutions. Based on the scanning the Executive Committee elected to focus Umicore's Horizon 2020 growth ambitions on those activities that are linked to the drive towards clean air (automotive catalysts), vehicle electrification (rechargeable battery materials) as well as in those areas that tackle resource efficiency through our closed loop business model that ensures the recycling of precious and specialty metals. These activities will therefore be at the heart of our ambition to double the earnings of Umicore by 2020.

B. ASSESSING THE ACHIEVEMENTS AND SHORTFALLS OF VISION 2015

In terms of sustainability performance, Vision 2015 yielded largely positive results. On the environmental front, we achieved a significant reduction in CO_2 and metal emissions to water and air, surpassing our targets in all three cases.

With regards to people development and stakeholder engagement we also made big strides. The people survey of 2014 indicated a high level of engagement and satisfaction among our employees. By 2015 we had ensured that the vast majority of Umicore employees received an annual appraisal and development plan and we had also made good progress in further reducing the exposure levels of our employees to various metals. In the area of sustainable procurement we have built on our reputation as a pioneer in the field through the deployment of our Sustainable Procurement Charter and the implementation of conflict-free certification for our operations.

The one area where performance was less than satisfactory was safety. We set ourselves the target of becoming an accident-free company by 2015 and, while our safety performance improved, we fell short of this objective.

The challenge for Horizon 2020 is to ensure that we maintain the progress that we have made in certain areas, continue focusing on topics such as safety where we fell short of our goals and to strive to develop goals that have a clearer ability to enhance Umicore's competitive positioning. The overall status can be summarised as follows:

Holding onto the benefits – carbon and metal emissions, preferred employer, local community. Although we no longer see a need to set a further objective for these themes we will of course continue to measure and report on the impact and performance when relevant from a materiality point of view.

Could do better – safety and occupational exposure. We will continue to pursue the zero accident and zero excess readings goal over the course of the coming five years.

Competitive advantage – sustainable sourcing. In the period 2011 to 2015 Umicore made good progress in rolling out its Sustainable Procurement Charter to its suppliers and has developed a reputation for ethical sourcing. This approach is aligned with Umicore's values and is undoubtedly the right thing to do. However, it has an economic cost that to date is only starting to be accepted by customers. Horizon 2020 will see Umicore look to leverage this sustainable sourcing approach to generate an enhanced competitive edge in specific business units.

2. IDENTIFYING AND CHOOSING POTENTIAL MATERIAL TOPICS FOR HORIZON 2020

A. MATERIALITY SCREENING

With the activities linked to clean air, vehicle electrification and recycling defined as the main levers for Umicore's growth we then focused on screening for other topics that are considered as being of material importance by our own business units and by our main stakeholder groups (see previous chapter).

An initial list of material topics was drawn up based on the learning from Vision 2015 (see above). It was, for example, determined that safety – and more specifically pursuing a zero accident workplace – should constitute a Horizon 2020 objective irrespective of any specific stakeholder feedback. Other potential topics were identified through direct feedback from stakeholders. This included the findings of the annual internal business risk assessment, the results from the 2014 People Survey for all employees, the data from the implementation of Umicore's APS tool (Assessment of Product and services Sustainability) between 2012 and 2015 and direct questions submitted to Umicore or its business units by customers.

At corporate level we then screened material issues at peer companies and customers as well as potentially relevant topics discussed by international business groups, research groups and media.

B. MATRIX SET-UP AND ROAD TESTING

All of the main topics that we identified in the materiality screening phase were used to draw up a draft materiality matrix. The assessment of the relevance of these topics for Umicore was carried out by a project team and discussed with the EHS and HR corporate teams. The starting matrix, containing some 65 topics was submitted for further refining with the business unit management teams. Based on the feedback of the business units, a revised version of the Umicore Group materiality matrix was compiled consisting of 25 topics in the top quartile of the matrix. The 25 issues formed the basis of the materiality road-testing and for ease of reference were clustered into five categories: Supply, Products, Operational Excellence, Human Resources, Health and Safety.

The list of material topics was then road-tested using an on-line survey that was sent to 48 stakeholders. These stakeholders – ranging from investors to customers and employees gave their feedback on their particular ranking of the topics.

3. DEFINITION OF OBJECTIVES AND REPORTING SCOPE

Based on the results of the first two phases, we established the scope of the objectives for Horizon 2020. This constituted the main focus for Umicore in the period 2016-2020. They have been clustered in four themes of Economic, Value Chain and Society, Eco-Efficiency, Great Place to Work.

We also identified a range of issues that Umicore and its stakeholders identified as important for management purposes and which should remain part of the report, albeit not part of any specific Horizon 2020 objective. (1)

(1) One example is CO_2 emissions. In our own Vision 2015 review, we assessed that the absolute level of our CO_2 emissions was so dependent on the energy mix of the countries in which we operate that it made no sense to continue pursuing a specific CO_2 emission reduction objective. However, many stakeholders still expect Umicore to report on this metric and this data would remain part of the reporting scope.

A simplified grid showing the clustering of the main material topics and how these translate into the Horizon 2020 objectives can be found below:

MAIN MATERIAL TOPICS BY CLUSTER	MAIN STAKEHOLDER GROUPS CONCERNED	TRANSLATION INTO OBJECTIVE FOR STRATEGY HORIZON 2020(1)	RELATED HORIZON 2020 THEME
SUPPLY		**SUSTAINABLE SUPPLY**	**VALUE CHAIN AND SOCIETY**
Resource scarcity	Society, Public sector and authorities, Customers	Umicore will leverage its sustainability expertise in the supply chain to drive further improvements in its competitive positioning. This will be done mainly through securing our supply and promoting our closed loop business offering.	
Criticality of raw materials	Society, Public sector and authorities		
Supply disruptions	Customers, Investors and funders		
Recycled input materials use	Customers		
Recyclability and potential to close the loop	Suppliers, Customers, Public sector and authorities, Society		
Sustainability of supply chain/ responsible sourcing	Suppliers, Public sector and authorities, Customers		
Supplier screening	Suppliers, Customers, Public sector and authorities, Society		
PRODUCTS		**SUSTAINABLE PRODUCTS AND SERVICES**	
Life cycle thinking	Customers, Suppliers, Public sector and authorities	Umicore will continue to develop selective products and services that have specific sustainability benefits and which drive further improvements in its competitive positioning.	
Toxic substances and phase out or ban	Customers, Suppliers, Public sector and authorities		
Product stewardship	Customers, Public sector and authorities, Investors and funders		
Public health and safety	Society, Public sector and authorities		
Opportunities and risk from technologies and products	Customers, Investors and funders, Society		
Resource efficient products and production	Customers, Suppliers, Public sector and authorities		
OPERATIONAL EXCELLENCE		**ECO-EFFICIENCY**	**ECO-EFFICIENCY**
Energy consumption and efficiency	Investors and funders, Public sector and authorities	Umicore will take steps to increase value through even more efficient use of metals, energy and other substances in its operations. The focus lies on improving our energy efficiency.	
Resource efficient products and production	Public sector and authorities, Investors and funders		
Opportunities and risk from technologies and products	Customers, Investors and funders		
HUMAN RESOURCES		**PEOPLE ENGAGEMENT**	**GREAT PLACE TO WORK**
Talent attraction and retention	Employees, Society, Investors and funders	Umicore will safeguard or improve its competitiveness by making further improvements in the area of people engagement with specific focus on talent attraction & retention, diversity management and employability.	
Diversity and inclusion	Employees, Society, Public sector and authorities		
Employee training and development	Employees, Society		
HEALTH AND SAFETY		**HEALTH AND SAFETY**	
Occupational safety	Employees	Umicore strives to become a zero accident workplace.	
Process safety	Employees, Customers		
Occupational health	Employees, Public sector and authorities	Umicore will take steps to further reduce employee exposure to specific metals.	

(1) Other topics that were defined as material by at least one stakeholder group during the materiality assessment but which are not ascribed a specific Horizon 2020 objective (e.g. CO_2 or metal emissions) are reported in the statements section of the report.

4. VALIDATION BY THE EXECUTIVE COMMITTEE

The matrix and its translation into specific environmental and social objectives was validated by the Executive Committee in February 2016. The economic objectives and growth ambitions had been previously validated in 2015. As a result of this process we believe that our Horizon 2020 objectives and the information that we report in this document represent a balanced reflection of external requirements and our own internal needs and enable a balanced appreciation of our performance.

The Horizon 2020 economic, environmental and social objectives are:

Economic

- Leadership: Umicore will confirm its strong position and uniqueness in clean mobility materials offering and recycling processes
- Earnings: Umicore aims to at least double recurring EBIT between 2014 and 2020
- Portfolio: Umicore will rebalance its portfolio & earnings contributions from the three business groups

Value chain and society

- Sustainable supply: Umicore will leverage its sustainability expertise in the supply chain to drive further improvements in its competitive positioning
- Sustainable products and services: Umicore will continue to develop selective products and services that have specific sustainability benefits and which drive further improvements in its competitive positioning

Eco-efficiency

- Umicore will take steps to increase value through even more efficient use of metals, energy and other substances in its operations

Great place to work

- Umicore strives to become a zero accident workplace
- Umicore will take steps to further reduce employee exposure to specific metals
- Umicore will safeguard or improve its competitiveness by making further improvements in the area of people engagement with specific focus on talent attraction & retention, diversity management and employability

Management approach

GENERAL MANAGEMENT APPROACH

GOALS AND PERFORMANCE 2016-2020

Our approach to sustainable development derives in the first instance from our vision, values and organisational principles as stated in The Umicore Way.

Based on The Umicore Way, and in the context of the economic, societal and environmental trends, we have developed our Horizon 2020 strategy. This strategy sets our economic, social and environmental ambitions to 2020 and beyond and lies in the continuity of our Vision 2015 strategy.

The process for defining the social and environmental objectives within Horizon 2020 involved a structured dialogue with the management of each business unit – particularly to determine the social and environmental topics that could generate a greater competitive edge. To ensure a degree of alignment with external expectations we also conducted an on-line stakeholder survey. The objectives were debated and ratified by the Executive Committee in February 2016. For further information see our materiality assessment on pages 58-61.

In order to achieve our Horizon 2020 ambitions we have developed specific objectives grouped in four main themes. Three of the themes have been maintained from Vision 2015, the "Stakeholder Engagement" theme has been replaced by "Value chain and society" to highlight our ambition of adopting a more holistic view of Umicore's presence in and impact on the overall value chain.

Economic performance

- Leadership
- Earnings
- Balanced portfolio

Value chain and Society

- Sustainable supply

Sustainable products and services

Eco-efficiency

- Energy efficiency
- Maintaining and improving the good results achieved in Vision 2015 on metals emissions to air and water

Great place to work

- Zero accidents
- Occupational exposure reduction
- People engagement

The different components described below, including policies, responsibilities and evaluation, ensure a close monitoring of our economic, environmental and social performance.

POLICIES

In addition to The Umicore Way, we have also developed a comprehensive framework for ethical business practice through our Code of Conduct and the Corporate Governance Charter, a document which sets out our management philosophy and governance principles. A number of internal policies have also been developed in support of our vision and values including Safety, Human Rights and Working Conditions, Training & Development, Donations & Sponsorship.

RESPONSIBILITIES

Final accountability for all aspects of Umicore's business lies with the Executive Committee. The broad sustainability approach is guided by a team including representatives of Environment, Health and Safety, Human Resources (EHS), Finance, and Procurement & Transportation. This team is responsible for developing and gaining approval for the various sustainable development objectives and guiding the business units in their efforts to contribute to these objectives. At business group level, the economic/financial, environmental and social performance is owned by the Executive Vice-President of that entity. At business unit level, these aspects are owned by the head of the business unit. At site level the site manager is responsible for the economic, social and environmental performance of the site.

MONITORING, EVALUATION AND CONTINUOUS IMPROVEMENT

Corporate EHS and Corporate HR have developed detailed technical guidance notes to assist the business units and sites to ensure a common understanding of concepts, definitions, roles and responsibilities. Regular workshops and meetings are organised each year at various levels of the organisation to exchange best practice.

Progress towards the Group objectives is measured annually against a set of KPI's reported through a group data management system. The data is collected and reported at the relevant entity level: site, business unit or Umicore Group.

Other performance indicators that are relevant to the social and environmental performance of the company are also measured and reported to the extent these are relevant and material in the context of Umicore's operations. Corporate EHS, Corporate HR and Corporate Finance aggregate the performance of the business units at Group level to evaluate Umicore's overall progress towards the Horizon 2020 objectives.

On-site data verification relating to social and environmental performance and progress towards objectives is carried out by Umicore's internal teams. In addition, Umicore uses an assurance provider to check its social and environmental data. From 2011 this function has been carried out by the same company responsible for the audit of Umicore's financial data – PricewaterhouseCoopers (PwC). PwC evaluates the completeness and reliability of the reported data as well as the robustness of the associated data management system. Wherever necessary, performance indicators and reporting processes are reviewed and updated after every assurance cycle as part of a process of continuous improvement.

MANAGEMENT APPROACH TO ECONOMIC AND FINANCIAL PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

In The Umicore Way we state that

"We develop, produce, apply, market and recycle metal-related materials and we contribute to material based solutions. We combine our competences in metallurgy, chemistry and materials science with a thorough understanding of our customers' needs, applications and systems.

We focus on those business areas where we can attain leadership positions which are recognised by our customers and which allow us to create value.

We want to be the preferred partner of our customers. We are committed to the growth of our business through the competence of our people, excellence in operations and technological innovation."

As part of our Horizon 2020 strategy, we have identified specific growth areas linked to societal and environmental megatrends and we expect these areas to enable us to double the recurring EBIT between 2014 and 2020. This relied on the analysis of the validity of the megatrends relevant for Umicore during the Vision 2015 strategy.

Below you will find more information on the following elements:

- Operational returns
- Shareholder returns
- Financial strength
- Research and development
- Market presence
- Policy
- Responsibility

OPERATIONAL RETURNS

Umicore seeks to generate economic value through its existing businesses and any acquisitions or organic growth initiatives that it undertakes in line with its overall strategy. This entails generating a return on capital employed (recurring pre-tax operating profit/ average capital employed for the period) in excess of our overall Group pre-tax cost of capital. This cost of capital can vary over time in function of our risk profile and the state of the world's debt and equity markets. Our targeted return on capital employed (ROCE) in the context of Horizon 2020 is above 15%.

Investments are assessed on a case-by-case basis: acquisitions are normally expected to be earnings enhancing in the early phase of their integration and value enhancing shortly thereafter. Similar criteria exist for organic investments although the pursuit of longer-term growth projects invariably requires a longer view on expected returns.

In terms of operational performance an emphasis is placed on ROCE. We deal with precious and other rare metals and we therefore have relatively high working capital intensity. Operational managers are therefore incentivised to manage performance from both an earnings perspective and also by minimising the operational capital employed.

SHAREHOLDER RETURNS

Umicore aims to create value for shareholders in the medium term. This is achieved in the first instance through achieving solid operational performance as outlined above. We seek to grow our existing businesses and also to enter markets which have attractive growth potential and to develop leadership positions within these markets (see below). Direct shareholder returns are realised through the payment of dividends which are paid out through an interim dividend in October and the difference after the Ordinary General Meeting at the end of April (for more information about the dividend policy please consult this page). Umicore has a policy of paying a stable or gradually increasing dividend (for a history of the dividend payout please click here). We may also, from time to time, return cash to shareholders by other means, for example through share buy backs and cancellations.

FINANCIAL STRENGTH

Umicore aims to safeguard the business through sound financial management and by maintaining a strong balance sheet. We have no fixed target regarding debt levels but we aim to maintain an investment grade status at all times. We also seek to maintain a healthy balance between short term and longer-term debt and between debt secured at fixed and floating interest rates. This approach, coupled with strong cash flow generation, allows us to self-fund the vast majority of our own growth initiatives.

RESEARCH AND DEVELOPMENT

As a materials technology group, the future success and financial sustainability of our business depends on our ability to develop and successfully introduce innovative products and services. With this in mind we invest consistently in research and development, with the equivalent of between 5% and 7% of revenues typically being spent on R&D every year.

MARKET PRESENCE

As part of our Horizon 2020 strategy, Umicore seeks to maintain market leadership positions in recycling and clean mobility materials. The nature of our business, which consists of products for highly specific applications, means that we do not have a presence in any country or region which makes up a significant part of that country or region's economy. Our business is global in nature with 59 industrial sites in 25 countries.

POLICY

Our approach to financial and economic management derives in the first instance from our vision, values and organisational principles found in The Umicore Way. Specific internal policies have been developed to frame the company's approach to specific financial and economic aspects including: Dividend, Financing and Funding, Transfer Pricing, Credit Management, Hedging, Capital Expenditure and Mergers & Acquisitions.

RESPONSIBILITY

Accountability for the economic and financial performance of Umicore lies with the Executive Committee. Each Executive Vice-President is responsible for the overall financial performance of his/her business group. The Chief Technology Officer and his/her organisation has oversight for the technology portfolio of the group and our overall research and development activities. At business unit level the head of the business unit is responsible for the overall financial performance of the business unit. The Chief Financial Officer has overall oversight of the financial and economic performance of the Group and is supported by a Corporate Finance team that includes specific expertise centres covering aspects such as tax, treasury, accounting & control, and the internal control environment. At business unit level, financial controllers are responsible for managing the financial and reporting aspects of the business unit.

MANAGEMENT APPROACH TO ENVIRONMENTAL PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

In The Umicore Way, Umicore subscribes to a set of principles to continually improve its environmental performance. Within the context of our role as a materials technology company active in the specialty chemicals sector, we have defined energy efficiency as the core environment related objective as part of our Horizon 2020 strategy. This objective builds upon the widespread implementation of energy efficiency assessments throughout the entire group. This objective represents what we believe to be the most material environmental aspect of our business and the one that is of the most importance to our various stakeholders (please see our materiality assessment on pages 58-61. The performance review of energy efficiency is reported in the Eco-efficiency section on pages 31-32.

While the Group environmental objective on energy efficiency constitutes a special focus for the period to 2020, we believe it is equally important to continuously monitor, control and report the performance of our organisation in relation to other environmental aspects. We do that via the same measurement tools as indicated in our general management approach. These indicators monitor how we are building on the Vision 2015 achievements in terms of environmental performance. These underlying performance indicators can be found in the Environmental Statements of our Annual report. These are related to:

- Emission to water and air
- Greenhouse gases
- Water consumption
- Waste volumes
- Control and remediation of historical pollution
- Regulatory compliance and management systems

The specific management approach described below applies to both material topics and the underlying performance indicators.

POLICY

Our approach to environmental management derives in the first instance from our vision, values and organisational principles found in The Umicore Way. An internal Group EHS Guidance Note provides detailed guidance for all entities regarding the approach to measuring and reporting on each of the relevant environmental aspects. A specific internal policy on energy efficiency was rolled out throughout the entire group in the period 2011-2015 and has created a high level of awareness and commitment at sites and business units to strive to a continual improvement of the energy efficiency. In addition, Umicore stimulated in all business units initiatives to enhance the potential to recycle. At global scale, recycling of metals reduces the environmental impact related to the acquisition and transformation of metals into products.

RESPONSIBILITY

Accountability for the environmental performance and impact of Umicore lies with the Executive Committee. In the Executive Committee the Executive Vice-President in charge of Environment, Health and Safety, Corporate Security and Internal Audit has oversight responsibilities for environmental aspects at Group level and is supported by the Senior Vice President Environment, Health & Safety. The Executive Vice-Presidents are responsible for the overall environmental performance of his/her segment. At business unit level the head of the business unit is responsible for the overall environmental performance. The general manager of each site has a similar responsibility at site level.

BOUNDARY

The performance with respect to the material topic of energy efficiency as well as with respect to the underlying performance indicators contributes to reducing our impact on the environment, e.g. through an expected reduction of our carbon footprint or lower impact or the metal emissions on air and water.

MANAGEMENT APPROACH TO SOCIAL PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

As set out in The Umicore Way we strive to be a preferred employer for both current and potential employees and to act and operate in line with the expectations of society. We have defined three social objectives within the context of our Horizon 2020 strategy. These objectives are reducing lost-time accidents to zero, further reducing occupational exposure to specific metals for our colleagues and increasing our diversity, talent attraction and retention and employability. We also have objectives which relate to our broader social impact and these can be found in our management approach to value chain and society.

These objectives were defined as material topics in the materiality assessment both by internal and external stakeholders. Talent management is key in order to reach the desired business growth. Attracting, developing and retaining talents in competitive labour markets supports the business units in their growth plans. We are convinced that increasing the diversity of our workforce is not only in line with expectations from society, but that it also will contribute to the success of the company. In the context of the ageing population and the need for longer careers, we are putting also programs in place leading to an increased employability of our employees. The performance review of these material topics, including zero accident and reducing occupational exposure, is reported in the Great place to work section on pages 33-36

While these social objectives constitute a special focus for the period to 2020, we believe it is equally important to continuously monitor, control and report the social performance of our organisation in other areas. We do that via the same measurement tools as indicated in our general management approach. These underlying performance indicators can be found in the Social Statements part of our Annual report. They are:

- Monitoring of workforce demographics
- Monitoring of human rights, compliance and risk
- Monitoring of employee health aspects beyond metal exposure
- Monitoring of contractor safety

The specific management approach described below applies to both materials topics and the underlying performance indicators.

POLICY

Our approach to social aspects derives in the first instance from our vision, values and organisational principles found in The Umicore Way. An internal Group Social Reporting Guidance Note provides detailed guidance for all entities regarding the approach to measuring and reporting on Social performance. Specific internal policies have been developed to frame specific elements of the company's social management approach including Safety, Human Rights and Working Conditions and Training & Development. In addition, Umicore has a Global Framework Agreement on Sustainable Development in place with international trade unions as a confirmation of Umicore's principles of sustainable development related to social aspects.

RESPONSIBILITY

Accountability for the social performance and impact of Umicore lies with the Executive Committee. In the Executive Committee the CEO has oversight responsibilities for Human Resources aspects at Group level and is supported by the Senior Vice President Human Resources. The Executive Vice-Presidents are responsible for the social aspects of his/her business group. At business unit level the head of the business unit is responsible for the overall social performance. The general manager of each site has a similar responsibility at site level. A regional Human Resources organisation exists to manage social aspects at regional and country level and to provide structural support to the business units in all aspects of human resources management.

BOUNDARY

The performance with respect to the material topics (reducing lost-time accidents to zero, further reducing occupational exposure to specific metals for our colleagues and increasing our diversity, talent attraction and retention and employability) as well as with respect to the underlying performance indicators has a direct impact on Umicore's employees (enhanced engagement and well-being and also at site and Group level (attracting and retaining the right skills).

MANAGEMENT APPROACH TO VALUE CHAIN AND SOCIETY PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

Relationships between suppliers and customers are essential elements in building financial and economic value and also play a key role in the promotion of social and environmental best practice. The Umicore Way also covers the relationships with our various stakeholders.

The value chain and society objectives cover Umicore's presence and impact upstream with suppliers, and downstream in terms of the contribution of our products and services to a better life. The performance review of these material topics is reported in the Value chain ans society section on pages 28 to 30.

While these objectives represent a special focus for the period to 2020, we believe it is also important to continuously monitor, control and report the relation of our organisation with all the other stakeholders. You can find more information on our stakeholders groups in the Stakeholder Engagement part of our Annual report. Next to that we also keep reporting on the following topics in the Value chain Statements part of this report:

- Monitoring of the suppliers assessment for indirect procurement
- Product regulatory compliance
- Monitoring of our donations

The specific management approach described below applies to both materials topics and the underlying performance indicators.

POLICY

Our approach to stakeholder engagement derives from our vision, values and organisational principles found in The Umicore Way. Specific charters/policies have been developed to frame specific elements of the company's approach to stakeholder engagement including the Sustainable Procurement Charter, Conflict Minerals Policy, Human Rights & Working Conditions Policy and External Communications Policy.

RESPONSIBILITY

Our presence and impact upstream and downstream is, based on a business specific approach whereby all business units are required to identify and engage with their respective suppliers, customers and stakeholders. At Group level a team comprising members of various department including Corporate EHS, Corporate HR, Group Communications, Corporate Finance and Procurement & Transportation meet regularly to map the overall stakeholder expectations and to convene, whenever necessary, internal or external stakeholder dialogue sessions at Group level.

BOUNDARY

The value chain and society theme focuses on potential impacts on society that we have as a company through our activities, products and services. For reporting, all entities of the group are considered. While we focus primarily on our activities directly linked to clean mobility and recycling, other initiatives targeting suppliers, customers or society are being tracked and appropriately reported, be it via communication such as this Annual report or via other specific communication channels.

Contents

Corporate governance report

G1 CORPORATE GOVERNANCE FRAMEWORK

Umicore has adopted the 2009 Belgian Code on Corporate Governance as its reference code.

The English, Dutch and French versions of the Code can be found on the website of the Belgian Corporate Governance Committee.

The Corporate Governance Charter describes in detail the governance structure of the Company, as well as the policies and procedures of the Umicore group. The Charter is available on the Umicore website and may be obtained on request from Umicore's Group Communications Department.

Umicore has articulated its mission, values and basic organisational philosophy in a document called "The Umicore Way". This document spells out how Umicore views its relationship with its customers, shareholders, employees and society. It is supplemented by detailed company codes and policies, the most significant of which is the Code of Conduct (see G9).

In terms of organisational philosophy, Umicore believes in decentralisation and in entrusting a large degree of autonomy to each of its business units. The business units in turn are accountable for their contribution to the group's value creation and for their adherence to group strategies, policies, standards and sustainable development approach.

In this context, Umicore is convinced that a sound corporate governance structure constitutes a necessary condition to ensure its long term success. This implies an effective decision-making process based on a clear allocation of responsibilities. This approach must ensure an optimal balance between a culture of entrepreneurship at the level of the business units and effective steering and oversight processes. The Corporate Governance Charter deals in more detail with the responsibilities of the shareholders, the Board of Directors, the CEO and the Executive Committee and also the specific role of the Audit Committee and of the Nomination & Remuneration Committee. The present statements provide information on governance issues which relate primarily to the financial year 2016.

G2 CORPORATE STRUCTURE

The Board of Directors is the ultimate decision-making body of Umicore, subject to all matters specifically reserved to the shareholders' meeting by the Belgian Companies Code or Umicore's articles of association. The Board is assisted in its role by an Audit Committee and a Nomination & Remuneration Committee. The day-to-day management of Umicore has been delegated to the CEO, who also chairs the executive committee. The Executive Committee is responsible for devising the overall strategy of Umicore and for submitting it to the Board for review and approval. It is also entrusted with the implementation of this strategy and with the effective oversight of the business units and corporate functions. The Executive Committee is furthermore responsible for screening the various risks and opportunities that Umicore may encounter in the short, medium or longer term (see Risk Management section) and for ensuring that adequate systems are in place in order to address these. The Executive Committee is responsible for defining and applying Umicore's approach to sustainable development.

Umicore is organised in business groups which in turn comprise business units that share common characteristics in terms of products, technologies and end-user markets. Some business units are further subdivided into market-focused business lines. In order to provide a group-wide support structure, Umicore has regional management platforms in China, North America, Japan and South America. Umicore's corporate headquarters are based in Belgium. This centre provides a number of corporate and support functions in the areas of finance, human resources, internal audit, legal and tax, as well as public and investor relations.

G3 SHAREHOLDERS

3.1 ISSUED SHARES – CAPITAL STRUCTURE

On 31 December 2016 there were 112,000,000 Umicore shares in issue. The identity of shareholders having declared a participation of 3% or more as of 31 December 2016 can be found in the chapter "parent company separate summarised financial statements" (p. 166-168).

Also on 31 December 2016 Umicore owned 2,673,150 of its own shares representing 2.39% of its capital. Information concerning the shareholders' authorisation for Umicore to buy back its own shares and the status of such buy-backs can be consulted in the Corporate Governance Charter and on Umicore's website.

During the year 1,188,875 own shares were used in the context of the exercise of employee stock options and 65,509 shares were used for share grants, of which 5,184 to the Board members, 28,325 to the Executive Committee members, 27,500 to senior management members and 4,500 following a partial conversion into shares of the bonus of the CEO.

3.2 DIVIDEND POLICY AND PAYMENT

Umicore's policy is to pay a stable or gradually increasing dividend. There is no fixed pay-out ratio. The dividend is proposed by the Board at the ordinary (or annual) shareholders' meeting. No dividend will be paid which would endanger the financial stability of Umicore.

In 2016 Umicore paid a gross dividend of EUR 1.20 per share relating to the financial year 2015. This was an increase by EUR 0.20 compared to the gross dividend paid in 2015 in respect of the financial year 2014.

In July 2016 the Board, in line with the Umicore dividend policy, decided to pay an interim dividend, equalling 50% of the total dividend declared for the previous financial year. Therefore a gross interim dividend of EUR 0.60 per share was paid on 25 August 2016.

3.3 SHAREHOLDERS' MEETINGS 2016

The annual shareholders' meeting was held on 26 April 2016. On this occasion the shareholders approved the standard resolutions regarding the annual accounts, the appropriation of the results and the discharges to the directors and to the statutory auditor regarding their respective 2015 mandates. At the same general meeting the shareholders appointed Mrs Françoise Chombar and Mr Colin Hall respectively as new, independent director and as new director, both for a period of three years. The annual shareholders' meeting also approved the remuneration of the Board for 2016. Details of the fees paid to the directors in 2016 are disclosed in the remuneration report.

Finally, a special and an extraordinary shareholders' meeting, which were also held on 26 April 2016, approved a change of control clause, as well as the renewal of the authorised capital for another five years and the cancellation of the VVPR strips previously issued by the Company.

G4 BOARD OF DIRECTORS

4.1 COMPOSITION

The Board of Directors, whose members are appointed by the shareholders' meeting resolving by a simple majority of votes without any attendance requirement, is composed of at least six members. The directors' term of office may not exceed four years. In practice, directors are elected for a (renewable) period of three years.

Directors can be dismissed at any time following a resolution of a shareholders' meeting deciding by a simple majority of the votes cast. There are no attendance requirements for the dismissal of Directors. The articles of association provide for the possibility for the Board to appoint directors in the event of a vacancy. The next general meeting must decide on the definitive appointment of the above director. The new director completes the term of office of his or her predecessor.

On 31 December 2016, the Board of Directors was composed of eleven members: ten non-executive directors and one executive director.

On the same date six directors were independent in accordance with the criteria laid down in Article 526ter of the Belgian Companies Code and provision 2.3 of the 2009 Belgian Code on Corporate Governance.

Three of the eleven Board members in office on 31 December 2016 are women. As a result, Umicore does not meet the minimum representation threshold of one-third, as imposed by the Belgian Companies Code, which became effective on 1 January 2017. The Board will submit nomination proposals for new Board members at the annual shareholders' meeting of 2017. Should the proposal be accepted by the shareholders, the minimum representation threshold of women Board members will be met.

The directors on the Board possess a diversity of skills, backgrounds and experience that help ensure that it is an effective governance body for Umicore.

In terms of gender and cultural diversity, the Board counts three women and seven different nationalities among its 11 members. Diversity also arises from the Board's members educational backgrounds that includes engineering, law, economics, finance and applied languages. The Board's cumulative industry experience is broad, covering automotive, electronics, chemicals, metals, energy, finance and jewellery sectors. It also includes people experienced in the public and private sector and members with experience in the different regions in which Umicore is active. Collectively the Board possesses strong experience of managing industrial operations and counts nine active or former Chief Executive Officers in its ranks. The Board also has collective experience in disciplines that are specifically relevant to Umicore's non-financial Horizon 2020 goals such as health and safety, talent attraction and retention and supply chain sustainability.

The composition of the Board of Directors underwent the following changes in 2016:

- Mrs Françoise Chombar was appointed independent director for a period of three years at the annual shareholders' meeting held on 26 April 2016.
- Mr Colin Hall was appointed director for a period of three years at the above annual shareholders' meeting.

4.2 MEETINGS AND TOPICS

The Board of Directors held five regular meetings in 2016. On one occasion the Board also took decisions by unanimous written consent.

During 2016 the matters reviewed by the Board included:

- financial performance of the Umicore group;
- approval of the annual and half-year financial statements;
- adoption of the statutory and consolidated annual accounts and approval of the statutory and consolidated annual reports;
- approval of the agenda of the ordinary, special and extraordinary shareholders' meetings and calling of these meetings;
- approval of a justification report for the proposed renewal of the authorised capital;
- EU-Market Abuse Regulation and approval of a new Umicore Dealing Code;
- investment projects;
- EHS review, including sustainable development;
- reports Audit Committee;
- strategic opportunities and operational challenges;
- business reviews;
- mergers & acquisitions projects;
- annual performance review of the CEO and the other members of the Executive Committee in respect of 2015;
- succession planning at the level of the Board and the executive committee;
- litigation updates;
- interim dividend distribution.

The Board also visited the Umicore Automotive Catalyst site in Nowa Ruda (Poland).

4.3 PERFORMANCE REVIEW OF THE BOARD AND ITS COMMITTEES

Every two to three years the chairman conducts a performance review of the Board and its Committees.

The next performance review will take place in the first half of 2017 on the basis of an individual assessment form.

4.4 AUDIT COMMITTEE

The Audit Committee's composition and the qualifications of its members are fully in line with the requirements of Article 526bis of the Belgian Companies Code and the 2009 Belgian Code on Corporate Governance.

The Audit Committee is composed of three non-executive directors, all of them being independent. It is chaired by Mrs Ines Kolmsee.

All the members of the Audit Committee have extensive experience in accounting and audit matters as demonstrated by their curriculum.

The committee met four times in 2016. Apart from the review of the 2015 full year and the 2016 half year accounts, the Audit Committee discussed matters related to internal controls, treasury risk management, corporate security and IS controls. Audit mission reports were reviewed, the 2017 audit plan validated and the new head of the internal audit department endorsed. Finally, the Audit Committee also reviewed the preparations for the next external auditor mandate assignment.

4.5 NOMINATION & REMUNERATION COMMITTEE

The Nomination & Remuneration Committee is composed of three members who are all non-executive directors, two of them being independent. It is chaired by the chairman of the Board.

Two Nomination & Remuneration Committee meetings were held in 2016. During the same period the committee discussed the remuneration policy for the Board members, the Board Committees members and Executive Committee members, and the rules of the stock grant and option plans offered in 2016. The committee also discussed the succession planning at the level of the Board and the executive committee.

G5 EXECUTIVE COMMITTEE

5.1 COMPOSITION

The Executive Committee has the form of a "comité de direction"/"directiecomité" as defined under Article 524bis of the Belgian Companies Code.

The Executive Committee is composed of at least four members. It is chaired by the CEO, who is appointed by the Board of Directors. The members of the Executive Committee are appointed by the Board of Directors upon proposal by the CEO and upon recommendation of the Nomination & Remuneration Committee.

The composition of the Executive Committee remained unchanged in 2016.

On 31 December 2016 the Executive Committee was composed of seven members including the CEO.

5.2 PERFORMANCE REVIEW

A review of the performance of each Executive Committee member is conducted annually by the CEO and discussed with the Nomination & Remuneration Committee. The results are presented and discussed to/by the Board of Directors.

The Board also meets annually in a non-executive session (i.e. without the CEO being present) in order to discuss and review the performance of the CEO.

The above performance reviews took place on 4 February 2016.

G6 RELEVANT INFORMATION IN THE EVENT OF A TAKEOVER BID

6.1 RESTRICTIONS ON TRANSFERRING SECURITIES

Umicore's articles of association do not impose any restriction on the transfer of shares or other securities.

The Company is furthermore not aware of any restrictions imposed by law except in the context of the market abuse legislation and of the lock-up requirements imposed on some share grants by the Belgian Companies Code.

The options on Umicore shares as granted to the CEO, to the members of the Executive Committee and to designated Umicore employees in execution of various Umicore incentive programs may not be transferred inter vivos.

6.2 HOLDERS OF SECURITIES WITH SPECIAL CONTROL RIGHTS

There are no such holders.

6.3 VOTING RIGHT RESTRICTIONS

Umicore's articles of association do not contain any restriction on the exercise of voting rights by shareholders, providing the shareholders concerned are admitted to the shareholders' meeting and their rights are not suspended. The admission rules to shareholders' meetings are articulated in Article 17 of the articles of association. According to Article 7 of the articles of association the rights attached to shares held by several owners are suspended until one person is appointed as owner vis-à-vis the Company.

To the Board's best knowledge none of the voting rights attached to the shares issued by the Company were suspended by law on 31 December 2016, save for the 2,673,150 shares held by the Company itself on that date (Article 622 §1 of the Belgian Companies Code).

6.4 EMPLOYEE STOCK PLANS WHERE THE CONTROL RIGHTS ARE NOT EXERCISED DIRECTLY BY THE EMPLOYEES

Umicore has not issued any such employee stock plans.

6.5 SHAREHOLDERS' AGREEMENTS

To the Board's best knowledge there are no shareholders' agreements which may result in restrictions on the transfer of securities and/or the exercise of voting rights.

6.6 AMENDMENTS TO THE ARTICLES OF ASSOCIATION

Save for capital increases decided by the Board of Directors within the limits of the authorised capital, only an extraordinary shareholders' meeting is authorised to amend Umicore's articles of association. A shareholders' meeting may only deliberate on amendments to the articles of association – including capital increases or reductions, as well as mergers, de-mergers and a winding-up – if at least 50% of the subscribed capital is represented. If the above attendance quorum is not reached, a new extraordinary shareholders' meeting must be convened, which will deliberate regardless of the portion of the subscribed capital represented. As a general rule amendments to the articles of association are only adopted if approved by 75% of the votes cast. The Belgian Companies Code provides for more stringent majority requirements in specific instances, such as the modification of the corporate object or the company form.

The Company's articles of association amended once in 2016, following the renewal of the authorised capital approved the extraordinary shareholders' meeting held on 26 April 2016.

6.7 AUTHORISED CAPITAL – BUY-BACK OF SHARES

The Company's share capital may be increased following a decision of the Board within the limits of the so-called "authorised capital". The authorisation must be granted by an extraordinary shareholders' meeting; it is limited in time and amount and is subject to specific justification and purpose requirements. The extraordinary shareholders' meeting held on 26 April 2016 (resolutions published on 13 May 2016) has renewed the authorisation granted to the Board to increase the Company's share capital in one or more times by a maximum amount of EUR 50,000,000. Up until 31 December 2016 this authorisation had not been used. It will lapse on 12 May 2021.

Following a resolution of the extraordinary shareholders' meeting held on 26 September 2014 the Company is authorised to buy back own Umicore shares on a regulated market within a limit of 10% of the subscribed capital, at a price per share comprised between EUR 4.00 and EUR 75.00 and until 31 May 2017 (included). The same authorisation was also granted to the Company's direct subsidiaries. No buy-backs occurred in 2016 in implementation of the above authorisation.

6.8 AGREEMENTS BETWEEN THE COMPANY AND ITS BOARD MEMBERS OR EMPLOYEES PROVIDING FOR COMPENSATION IF THEY RESIGN, OR ARE MADE REDUNDANT WITHOUT VALID REASON, OR IF THEIR EMPLOYMENT CEASES BECAUSE OF A TAKE-OVER-BID

All the senior vice-presidents of the Umicore group are entitled to a compensation equivalent to 36 months base salary in the event of a dismissal within twelve months after a change of control of the Company. As far as the members of the Executive Committee are concerned, reference is made to the Remuneration report (p. 76-83).

G7 CONFLICTS OF INTERESTS (ART. 523 – 524TER COMPANIES CODE)

On 4 February 2016, prior to the Board discussing or taking any decision, Marc Grynberg declared that he had a direct conflicting interest of a proprietary nature in the implementation of the decisions taken by the Board relating to his performance assessment and to his remuneration (including the grant of shares and options). In accordance with Article 523 of the Belgian Companies Code, Marc Grynberg did not take part in the Board's discussions concerning this decision and he did not take part in the voting.

The above decisions had/will have the following financial consequences:

A) CASH REMUNERATION

The CEO received a fixed gross remuneration of EUR 660,000 in 2016. Also in 2016 he received a gross variable cash remuneration totalling EUR 220,000 as non-deferred part of his variable cash remuneration for the reference year 2015.

Furthermore he received in 2016 a gross amount of EUR 74,250 as first half of the deferred payment of his variable cash remuneration for the reference year 2014 based on (1) the two year average Umicore group profitability criterion, i.e. the average return on capital employed (ROCE) for the reference years 2014 and 2015 (i.e. 13% giving rise to a percentage pay-out of 55%) and (2) the degree of meeting the plan performance, as approved by the board, for the same reference years 2014 and 2015 (no adjustment applied based on the degree of meeting the plan performance on group level), and a gross amount of EUR 76,950 as the second half of the deferred payment of his variable cash remuneration for the reference year 2013 based on the three year average Umicore group ROCE for the reference years 2013, 2014 and 2015 (i.e. 13.2% giving rise to a percentage pay-out of 57%).

In 2017 he will receive the first half of the deferred payment of his annual variable cash remuneration for the reference year 2015 based on (1) the two year average Umicore group ROCE for the reference years 2015 and 2016 and (2) the degree of meeting the plan performance, as approved by the board, for the same reference years 2015 and 2016 and the second half of the deferred payment of his annual variable cash remuneration for the reference year 2014 based on (1) the three year average Umicore group ROCE for the reference years 2014, 2015 and 2016 and (2) the degree of meeting the plan performance, as approved by the board, for the same reference years 2014, 2015 and 2016.

The ROCE range is set between 7.5% (= pay-out of 0%) and a maximum of 17.5% (= pay-out of 100% at plan performance). When the achieved ROCE percentage falls between the above targets, the pay-out will be pro-rated. In addition, the deferred pay-outs will furthermore be adjusted upwards or downwards depending on the degree of meeting the plan performance approved by the Board for the applicable reference years.

B) GRANT OF SHARES AND STOCK OPTIONS

The financial consequences for Umicore consist of: either 1) as long as Umicore decides to keep the shares it holds today: the financing and opportunity cost of maintaining such shares in its portfolio until the delivery date of the shares granted or the option's exercise date, or 2) if and to the extent that Umicore sells such shares at a later date: the difference on the date of exercise of the options between the exercise price and the market value of the shares that Umicore would have to buy on that date.

During 2016, no specific transactions or contractual commitments occurred between a member of the Board or of the Executive Committee on the one hand, and Umicore or one of its affiliated companies on the other hand.

G8 STATUTORY AUDITOR

At the annual shareholders' meeting held on 29 April 2014 the statutory auditor's mandate of PricewaterhouseCoopers Bedrijfsrevisoren/Réviseurs d'Entreprises BCVBA/SCCRL was renewed for a period of three years. The statutory auditor is represented by BVBA/SPRL Marc Daelman, represented by Marc Daelman for the exercise of this mandate.

Following the new applicable legislation on auditing services, the mandate of the current statutory auditor, who was initially appointed in 1993, will only be renewable twice, i.e. in 2017 and in 2020 (the latter provided it occurs before 17 June 2020).

The Umicore policy detailing the independence criteria for the statutory auditor may be requested from Umicore.

G9 CODE OF CONDUCT

Umicore operates a Code of Conduct for all its employees, representatives and Board members. This Code of Conduct is fundamental to the task of creating and maintaining a relation of trust and professionalism with its main stakeholders namely its employees, commercial partners, shareholders, government authorities and the public.

The main purpose of Umicore's Code of Conduct is to ensure that all persons acting on behalf of Umicore carry out their activities in an ethical way and in accordance with the laws and regulations and with the standards Umicore sets through its present and future policies, guidelines and rules. The Code of Conduct contains a specific section on complaints and expressions of concern by employees and "whistle-blower" protection.

The Code of Conduct is published in Appendix 4 to Umicore's Corporate Governance Charter.

G10 MARKET MANIPULATION AND INSIDER TRADING

Umicore's policy related to market abuse including insider trading is spelled out in the Umicore Dealing Code. A new version of this Code was approved in 2016 as a result of the entry into force of the EU-Regulation no 596/2014 of 16 April 2016 on market abuse. This new version can be found under Appendix 5 to the Corporate Governance Charter.

G11 COMPLIANCE WITH THE 2009 BELGIAN CODE ON CORPORATE GOVERNANCE

Umicore's corporate governance systems and procedures are in line with the 2009 Belgian Code on Corporate Governance.

Remuneration report

G12 BOARD OF DIRECTORS' REMUNERATION

REMUNERATION POLICY FOR THE BOARD OF DIRECTORS

As a principle the remuneration of the non-executive members of the Board should be sufficient to attract, retain and motivate individuals who have the profile determined by the Board. The remuneration level should take into account the responsibilities and the commitment of the Board members as well as prevailing international market conditions. On the basis of the recommendation made by the Nomination & Remuneration Committee as to the form and structure of remuneration, the Board of Directors adopts the policy for remuneration of the non-executive Directors. The Nomination & Remuneration Committee bases its proposals on a review of prevailing market conditions for quoted companies which are part of the BEL20 index as well as other European companies of similar size operating in the Chemicals, Metals and Materials sectors. The results of the survey are discussed within the Nomination & Remuneration Committee and the Board determines the remuneration for non-executive Directors and Board Committee's members to be proposed to the annual shareholders' meeting.

NON-EXECUTIVE DIRECTORS' REMUNERATION

In order to determine adequate remuneration levels for its non-executive Directors Umicore conducted at the end of 2015 a survey of director's fees of Umicore against those of quoted companies on the BEL20 index as well as other European companies of similar size operating in the Chemicals, Metals and Materials sectors. The results of the survey were reviewed by the Nomination & Remuneration Committee of 3 February 2016. The Nomination & Remuneration Committee concluded that Umicore remains reasonably positioned against the benchmarks and therefore recommended to the Board not to change the fees, but to re-assess the fee structure in 2017.

The Board of Directors of 4 February 2016 followed this recommendation and the annual shareholders' meeting of 26 April 2016 approved the non-executive Directors' remuneration.

The remuneration of the non-executive Board members was as follows in 2016:

- **Chairman:** annual fixed fee: EUR 40,000 + EUR 5,000 per meeting attended + 1,000 Umicore shares.
- **Director:** annual fixed fee: EUR 20,000 + EUR 2,500 per meeting attended + EUR 1,000 per meeting attended for foreign based Board members + 500 Umicore shares.

The remuneration of the Board Committee members was as follows in 2016:

AUDIT COMMITTEE

- **Chairman:** annual fixed fee: EUR 10,000 + EUR 5,000 per meeting attended.
- **Member:** annual fixed fee: EUR 5,000 + EUR 3,000 per meeting attended.

NOMINATION & REMUNERATION COMMITTEE

- **Chairman:** EUR 5,000 per meeting attended.
- **Member:** EUR 3,000 per meeting attended.

2016 BOARD REMUNERATION OVERVIEW

		(IN EUR)	MEETINGS ATTENDED
Thomas Leysen (Chairman) (non-executive Director)	**Board**		
	Fixed annual fee	40,000	
	Fee per attended meeting	5,000	5/5
	Value of 1,000 granted shares	44,870	
	Nomination & Remuneration Committee		
	Fee per attended meeting	5,000	2/2
	Total remuneration	**119,870**	
	Benefits in kind company car	2,971	
Marc Grynberg (executive director)	**Board**		
	No remuneration as a Director (see hereafter 2016 CEO remuneration)		5/5
Françoise Chombar (independent, non-executive Director) Appointed by the AGM of 26 April 2016	**Board**		
	Fixed annual fee	13,661	
	Fee per attended meeting	2,500	3/3
	Value of 342 granted shares	15,346	
	Total remuneration	**36,507**	
Ian Gallienne (non-executive Director)	**Board**		
	Fixed annual fee	20,000	
	Fee per attended meeting	2,500	5/5
	Value of 500 granted shares retroceded to GBL	22,435	
	Total remuneration	**54,935**	
Mark Garrett (independent, non-executive Director)	**Board**		
	Fixed annual fee	20,000	
	Fee per attended meeting	3,500	5/5
	Value of 500 granted shares	22,435	
	Audit Committee		
	Fixed annual fee	5,000	
	Fee per attended meeting	3,000	4/4
	Total remuneration	**76,935**	
Colin Hall (non-executive Director) Appointed by the AGM of 26 April 2016	**Board**		
	Fixed annual fee	13,661	
	Fee per attended meeting	3,500	3/3
	Value of 342 granted shares retroceded to GBL	15,346	
	Total remuneration	**39,507**	
Ines Kolmsee (independent, non-executive Director)	**Board**		
	Fixed annual fee	20,000	
	Fee per attended meeting	3,500	5/5
	Value of 500 granted shares	22,435	
	Audit Committee		
	Fixed annual fee	10,000	
	Fee per attended meeting	5,000	4/4
	Total remuneration	**89,935**	

		(IN EUR)	MEETINGS ATTENDED
Barbara Kux	**Board**		
(independent, non-executive Director)	Fixed annual fee	20,000	
	Fee per attended meeting	3,500	5/5
	Value of 500 granted shares	22,435	
	Nomination & Remuneration Committee		
	Fee per attended meeting	3,000	2/2
	Total remuneration	**65,935**	
	Umicore contribution to the Swiss social security	4,404	
Eric Meurice	**Board**		
(independent, non-executive Director)	Fixed annual fee	20,000	
	Fee per attended meeting	3,500	5/5
	Value of 500 granted shares	22,435	
	Total remuneration	**59,935**	
Jonathan Oppenheimer	**Board**		
(non-executive Director)	Fixed annual fee	20,000	
	Fee per attended meeting	3,500	4/5
	Value of 500 granted shares	22,435	
	Total remuneration	**56,435**	
Rudi Thomaes	**Board**		
(independent, non-executive Director)	Fixed annual fee	20,000	
	Fee per attended meeting	2,500	5/5
	Value of 500 granted shares	22,435	
	Nomination & Remuneration Committee		
	Fee per attended meeting	3,000	2/2
	Audit Committee		
	Fixed annual fee	5,000	
	Fee per attended meeting	3,000	4/4
	Total remuneration	**77,935**	

G13 CEO AND EXECUTIVE COMMITTEE REMUNERATION

REMUNERATION POLICY FOR THE CEO AND EXECUTIVE COMMITTEE

The Nomination & Remuneration Committee defines the remuneration policy principles for the CEO and the Executive Committee members and submits them to the Board of Directors for approval. It strives to have a fixed remuneration to reflect the level of responsibility and in line with market practices, as well as an attractive variable remuneration to reward the performance of the company against financial and sustainability criteria.

The compensation & benefits package for the CEO and Executive Committee members includes the following components: fixed remuneration, variable remuneration, share based incentives (share grant and incentive stock option plans) subject to a three year lock-up period, pension plans and other benefits.

The inclusion of Umicore shares and stock options as part of the remuneration of the CEO and the Executive Committee members reflects the commitment of the company to create shareholder value. Shares and stock options are not linked to individual or business performance criteria. As a result the share based incentives should not be considered as a variable remuneration as meant under the Belgian Corporate Governance law of 6 April 2010 and are vested upon grant.

The remuneration of the CEO and Executive Committee members is reviewed on an annual basis by the Nomination & Remuneration Committee. A survey is conducted every year to assess the competitiveness of the remuneration packages. Umicore benchmarks the total remuneration of the CEO and the Executive Committee members against BEL20 companies and European peer companies.

In line with the Belgian law of 6 April 2010 on Corporate Governance, the payment of half of the variable remuneration is deferred and subject to multi-year targets or criteria.

SYNTHETIC SUMMARY OF THE REMUNERATION OF THE CEO AND THE EXECUTIVE COMMITTEE MEMBERS
TIME TO CASH CONVERSION

Current year	Fixed	Annual review based on market practices BEL 20 and European peer companies
15 months	Undeferred variable 50%	Fixed discretionary based on individual objectives
27 months	Deferred variable 25%	Based on Group ROCE and performance against 2 years plan (y, y-1) for CEO/CFO/CTO/Corporate EVP; for EVP performance against 2 years Business Group plan
39 months	Deferred variable 25%	Based on Group ROCE and performance against 3 years plan (y, y-1, y-2) for CEO/CFO/CTO/Corporate EVP; for EVP performance against 3 years Business Group plan
3 years	Shares	Grant in recognition of services rendered in the ref year – not linked to individual or business performance criteria – subject to a 3 year lock-up
3 to 7 years	Stock options	Upfront grant for the ref year – not linked to individual or business performance criteria – subject to a 3 year lock-up

The above remuneration components are defined and/or assessed by the Nomination and Remuneration Committee subject to Board approval.

CEO'S REMUNERATION

FIXED REMUNERATION

The fixed remuneration of the CEO is reviewed on an annual basis by the Nomination & Remuneration Committee.

VARIABLE CASH REMUNERATION SCHEME AND EVALUATION CRITERIA

The CEO's annual variable cash remuneration potential currently amounts to EUR 540,000, half of which relates to an undeferred payout based on the individual performance including the annual overall financial performance of the Group, the progress achieved against Group strategic and sustainable development objectives, and adherence to the values of the Group.

The other half of the variable remuneration, for which the payout is deferred, is based (1) on the Umicore Group profitability criterion, i.e. the Return on Capital Employed (ROCE), as published in the annual report and (2) the degree of meeting the plan performance, as approved by the Board. The deferred payout is assessed over a multi-year timespan, with half of it paid after a period of two years based on the two year average ROCE and the plan performance as reference. The other half is paid after a period of three years using as a reference the three year average ROCE and the plan performance. The ROCE range is set between 7.5% (= payout of 0%) and a maximum of 17.5% (= payout of 100% at plan performance). When the achieved ROCE percentage falls between the minimum threshold and the maximum target, the payout will be pro-rated. In addition, the deferred payouts will furthermore be adjusted upwards or downwards depending on the degree of meeting the plan approved by the Board.

In case of any relevant structural change the Nomination & Remuneration Committee reserves the right to review and adjust the variable remuneration as appropriate.

At the beginning of every reference year the individual objectives of the CEO are discussed during a session of the Nomination & Remuneration Committee. During a Board session they are presented by the Chairman, discussed and approved by the Board.

The annual performance of the CEO is assessed by the Nomination & Remuneration Committee and the results of this assessment are presented by the Chairman and discussed during a Board session where the CEO is not present.

The variable cash remuneration may be converted partly or totally into Umicore shares at the discretion of the CEO. There are no provisions allowing the Company to reclaim any variable remuneration paid to the CEO.

SHARE BASED INCENTIVES (SHARE GRANT AND STOCK OPTIONS)

Umicore shares are granted to the CEO at the discretion of the Board of Directors in recognition of services rendered in the previous year. The number of shares granted to the CEO in respect of the year 2016 was 5,200. The shares are subject to a three year lock-up and are not subject to forfeiture conditions.

Stock options are granted to the CEO as part of the annual Umicore Incentive Stock Option Plan approved by the Board of Directors. The number of stock options granted to the CEO currently amounts to 75,000. There is no vesting period and the options are subject to a three year lock-up. Stock options allow the beneficiary to acquire a specific number of Umicore shares at a fixed price (the exercise price) within a specific period of time.

PENSION AND OTHER BENEFITS

Pensions include both defined contribution plans and the service cost of a defined benefit plan. Other benefits are representation allowance, benefits in kind (company car), and insurance benefits.

EXECUTIVE COMMITTEE MEMBERS' REMUNERATION

FIXED REMUNERATION

The fixed remuneration of the Executive Committee members is reviewed on an annual basis by the Nomination & Remuneration Committee. The fixed remuneration can be different for each Executive Committee member and depends on criteria such as experience and responsibilities.

VARIABLE CASH REMUNERATION SCHEME AND EVALUATION CRITERIA

Umicore has adopted a variable cash remuneration scheme which aims to ensure that all Executive Committee members are rewarded in line with their annual individual performance as well as the overall performance of the Umicore Group. All the members of the Executive Committee are eligible for the same annual variable cash remuneration potential currently amounting to EUR 300,000, half of which involves an undeferred payout based on the annual individual performance (including adherence to the values of the Group, environmental and social performance).

The other half, involving a deferred payout, is based (1) on the Umicore Group ROCE profitability criterion, i.e. the Return on Capital Employed (ROCE), as published in the annual report and (2) the degree of meeting the plan performance, as approved by the Board. For Executive Committee members having Group responsibility such as the Chief Financial Officer, the Chief Technology Officer and the Corporate Executive Vice-President the plan performance is on Group level. For the Executive Vice-Presidents having full Business Group responsibility, the plan performance is their respective Business Group plan performance. The deferred payout is assessed over a multi-year timespan, with half of it paid after a period of two years, using the two years average ROCE and the plan performance as reference. The other half is paid after a period of three years based on the three years average ROCE and the plan performance. The ROCE range is set between 7.5% (= payout of 0%) and a maximum of 17.5% (= payout of 100% at plan performance). When the achieved ROCE percentage falls between the minimum threshold and the maximum target, the payout will be pro-rated. In addition, the deferred payouts will furthermore be adjusted upwards or downwards depending on the degree of meeting the plan approved by the Board.

In case of any relevant structural change the Nomination & Remuneration Committee reserves the right to review and adjust the variable remuneration as appropriate.

At the beginning of every reference year the annual individual objectives of each Executive Committee member are fixed by the CEO on basis of their areas of responsibility. The annual individual objectives are specific, measurable, agreed, realistic, time bound and take into account the group's sustainability objectives.

The annual performance of each Executive Committee member is initially assessed by the CEO. The results of the assessments and the individual variable cash remuneration proposals are presented by the CEO to the Nomination & Remuneration Committee before approval by the Board.

There are no provisions allowing the Company to reclaim any variable remuneration paid to the Executive Committee members.

SHARE BASED INCENTIVES (SHARE GRANT AND STOCK OPTIONS)

Umicore shares are granted to the Executive Committee members at the discretion of the Board of Directors in recognition of services rendered in the previous year. The number of shares granted to each member of the Executive Committee in respect of the year 2016 was 3,700. The shares are subject to a three year lock-up and are not subject to forfeiture conditions.

Stock options are granted to the Executive Committee members as part of the annual Umicore Incentive Stock Option Plan approved by the Board of Directors. The number of stock options granted to each Executive Committee member currently amounts to 17,500. There is no vesting period and the options are subject to a three year lock-up. Stock options allow the beneficiary to acquire a specific number of Umicore shares at a fixed price (the exercise price) within a specific period of time.

PENSION AND OTHER BENEFITS

Pensions include both defined contribution plans and the service cost of a defined benefit plan. Other benefits include representation allowances, company cars and insurance benefits.

TOTAL CEO AND EXECUTIVE COMMITTEE REMUNERATION FOR 2016

All components of the remuneration earned by the CEO and the Executive Committee Members for the reported year are detailed in the table below:

(IN EUR)		CEO	EXECUTIVE COMMITTEE (IN AGGREGATE)
Status		Self-employed	
Time to cash conversion			
Current year	Fixed	660,000	2,375,000
15 months	Undeferred Variable 50% (ref year 2016)	210,000	660,000
27 months	Deferred Variable 25% (ref year 2015)	90,450	296,475
39 months	Deferred Variable 25% (ref year 2014)	81,000	243,000
3 years	Shares	265,200	1,133,976
3 to 7 years	Stock options	350,250	490,350
Pension	Defined contribution plan	46,200	172,330
	Defined benefits plan (service cost)	118,527	538,986
Others benefits	Representation allowance, benefit in kind company car, insurance benefits	42,881	235,005
Total		**1,864,508**	**6,145,122**

G14 SHARE AND SHARE OPTION OWNERSHIP AND TRANSACTIONS 2016

EXECUTIVE COMMITTEE SHARE OPTION OWNERSHIP AND TRANSACTIONS 2016

	OPTIONS AT 31 DEC 2015	OPTIONS GRANTED IN 2016	NUMBER OF OPTIONS EXERCISED	AVERAGE EXERCISE PRICE (IN EUR)	YEAR OF GRANT OF OPTIONS EXERCISED	NUMBER OF OPTIONS FORFEITED	OPTIONS AT 31 DEC 2016*
Marc Grynberg	503,000	75,000	113,000	23.16	2007/2010	0	465,000
Stephan Csoma	41,000	17,500	6,000	35.32	2012	0	52,500
Denis Goffaux	85,000	17,500	32,500	36.59	2011/2012	0	70,000
Géraldine Nolens**	24,000	17,500	6,000	35.32	2012	0	35,500
Filip Platteeuw	52,500	17,500	17,500	36.38	2013	0	52,500
Pascal Reymondet	95,000	17,500	60,000	37.95	2011/2012/2013	0	52,500
Marc Van Sande	95,000	17,500	42,500	36.94	2011/2012	0	70,000

* These options can be exercised at strike prices between EUR 32.286 and EUR 38.07

** Including options granted in her capacity prior to appointment to the Executive Committee

Details of all options exercised and other share-related transactions of Executive Committee or Board members can be found on the FSMA website.

EXECUTIVE COMMITTEE SHARE OWNERSHIP 2016

	SHARES OWNED AT 31/12/2015	SHARES OWNED AT 31/12/2016
Marc Grynberg	240,500	315,200
Stephan Csoma	7,200	10,900
Denis Goffaux	12,700	18,900
Géraldine Nolens	–	2,350
Filip Platteeuw	8,200	11,400
Pascal Reymondet	24,450	25,150
Marc Van Sande	15,700	19,400
Total	**308,750**	**403,300**

BOARD OF DIRECTORS SHARE OWNERSHIP 2016

	SHARES OWNED AT 31/12/2015	SHARES OWNED AT 31/12/2016
Thomas Leysen	573,920	454,920
Françoise Chombar	–	3,342
Ian Gallienne	–	–
Mark Garrett	333	833
Colin Hall	–	–
Ines Kolmsee	1,805	2,305
Barbara Kux	1,000	1,500
Eric Meurice	333	833
Jonathan Oppenheimer	1,900	2,400
Rudi Thomaes	2,205	2,705
Total	**581,496**	468,838

CONTRACTUAL RELATIONSHIPS

CONTRACT BETWEEN UMICORE AND MARC GRYNBERG, CHIEF EXECUTIVE OFFICER

Taking into account Marc Grynberg's seniority in the Umicore Group, the Board resolved as follows in 2008:

- In case of termination of the contract by Umicore, a total compensation equivalent to 18 months of his annual base salary will be paid.
- A total compensation of three years of annual base salary as minimum indemnity will be paid to the Chief Executive Officer if his employment as Chief Executive Officer would be terminated within a 12 month period following a change of control due to a takeover bid (not cumulative with the previous provision).
- It is at the Board of Directors' discretion as to whether the variable cash remuneration would form part of any final indemnity.

CONTRACTS BETWEEN UMICORE AND EXECUTIVE COMMITTEE MEMBERS

Following a Board decision taken in 2007, in case the employment of an Executive Committee member should be terminated within twelve months of a change of control of the Company, that member would stand to receive a total compensation equivalent to 36 months' base salary. This only applies for Pascal Reymondet and Marc Van Sande who were Executive Committee members at the date of this Board decision.

INDIVIDUAL ARRANGEMENTS IN CASE OF TERMINATION OF THE CONTRACT BY UMICORE

Denis Goffaux was appointed Chief Technology Officer on 1 July 2010. Taking into account Denis Goffaux's seniority in the Umicore Group a total compensation equivalent to 18 months of his annual base salary will be paid in case of contract termination. In line with the Belgian Corporate Governance Law of 6 April 2010, the Nomination & Remuneration Committee recommended this arrangement and this was approved by the Board of Directors on 1 June 2010.

Stephan Csoma and Filip Platteeuw were appointed Executive Committee members on 1 November 2012. Taking into account their seniority in the Umicore Group a total compensation equivalent to 18 months of their annual base salary will be paid in case of contract termination. In line with the Belgian Corporate Governance Law of 6 April 2010, these arrangements were approved by the Nomination & Remuneration Committee of 18 September 2012 subject to the absence of any objections of the Board, which were not formulated.

Géraldine Nolens was appointed Executive Committee member on 1 July 2015. Taking into account Géraldine Nolens' seniority in the Umicore Group, a total compensation equivalent to 18 months of her annual base salary will be paid in case of contract termination. In line with the Belgian Corporate Governance Law of 6 April 2010, the Nomination & Remuneration Committee recommended this arrangement and this was approved by the Board of Directors on 28 April 2015.

For all prior mentioned Executive Committee members it is at the Board of Directors' discretion as to whether the variable cash remuneration would form part of any final indemnity.

The contract of Marc Van Sande was signed before the Belgian Corporate Governance Law of 6 April 2010 came into force. In case of termination the compensation is based on age, seniority in the Umicore Group and the total compensation and benefits.

Pascal Reymondet has a German employment agreement signed on 1 March 1989. There is no contractual arrangement in case of termination and German law will be applicable.

G15 CHANGES TO REMUNERATION SINCE THE END OF 2016

NON-EXECUTIVE DIRECTORS' REMUNERATION

At the request of the Nomination & Remuneration Committee, Umicore conducted end 2016 a survey of directors fees of Umicore against those of quoted companies on the BEL20 index as well as other European companies of similar size operating in the Chemicals, Metals, and Materials sectors. The results of the survey were reviewed by the Nomination & Remuneration Committee of 20 January 2017.

Based on the review of the overall compensation of the Board members and of each element of the compensation, the Nomination & Remuneration Committee concluded that the annual fixed fee requires adjustment. The Nomination & Remuneration Committee proposed to the Board an increase of the annual fixed fee with EUR 7,000. The annual fixed fee of the Chairman of the Board will remain unchanged.

The Board of Directors of 9 February 2017 followed this recommendation and decided to submit this increase to the approval of the shareholders.

CEO'S REMUNERATION

On 20 January 2017 the Nomination & Remuneration Committee reviewed the remuneration of the CEO and the Executive Committee members based on a comparison survey with European peer companies and BEL20 index companies.

On proposal of the Nomination & Remuneration Committee, the Board of Directors of 9 February 2017 decided to increase the fixed remuneration of the CEO with EUR 20,000 to EUR 680,000 as of 1 January 2017.

EXECUTIVE COMMITTEE MEMBERS' REMUNERATION

The Nomination & Remuneration Committee of 20 January 2017 reviewed the remuneration of the Executive Committee members. On proposal of the Nomination & Remuneration Committee, the Board of Directors of 9 February 2017 decided to increase slightly the annual fixed remuneration of the Executive Committee members as of 1 January 2017.

CEO & EXECUTIVE COMMITTEE MEMBERS' DEFERRED VARIABLE REMUNERATION

The Nomination & Remuneration Committee discussed a re-design of the deferred variable remuneration policy. While ROCE continues to be the key metric of financial performance, the Nomination & Remuneration Committee supported a concept to provide for a growth incentive. It was agreed that the current ROCE deferred variable will remain in place and that an upward adjustment or additional variable will be considered based on EBIT growth.

This additional variable, based on the target of the deferred variable remuneration or for the CEO EUR 270,000 (target of EUR 135,000 after a period of two years and target of EUR 135,000 after a period of three years) or for the Executive Committee members EUR 150,000 (target of EUR 75,000 after a period of two years and target of EUR 75,000 after a period of three years), will be determined by adding to the target a percentage equal to twice the average EBIT growth percentage over the last 2 years, respectively 3 years. A threshold of 2% average EBIT growth will be applied i.e. no adjustments for EBIT growth below 2%.The deferred variable plan including the additional variable will be measured collectively for the CEO and the Executive Committee members.

The new concept intends to reward for the quality of the results (ROCE criteria) and provide an incentive for growth (EBIT growth criteria).

The Board of Directors of 9 February 2017 approved this new concept of the deferred variable remuneration applicable as of pay-outs in 2018.

Economic statements

GROUP

KEY FIGURES

(in million EUR unless stated otherwise)	NOTE	2012	2013	2014	2015	2016
Turnover*		12,548.0	9,819.3	8,828.5	10,441.9	11,085.9
Revenues (excluding metal)		2,421.4	2,363.4	2,366.5	2,629.0	2,667.5
Recurring EBITDA	F9	524.1	462.6	442.2	504.7	526.8
Recurring EBIT	F9	372.1	304.0	273.7	330.3	350.7
of which associates	F9	22.2	11.8	28.3	14.3	18.3
Non-recurring EBIT	F9	(46.7)	(43.4)	(21.6)	(74.9)	(110.2)
IAS 39 effect on EBIT	F9	3.2	(0.5)	(2.7)	(2.7)	(9.0)
Total EBIT	F9	328.6	260.0	249.3	252.7	231.6
Recurring EBIT margin (in %)		14.4	12.4	10.4	12.0	12.5
Return on Capital Employed (ROCE) (in %)	F31	16.7	13.6	12.2	13.7	14.6
Average weighted net interest rate (in %)	F11	1.9	1.6	1.6	1.5	1.8
Effective recurring tax rate (in %)	F13	20.6	21.3	21.8	21.4	25.1
Recurring net profit, Group share	F9	275.2	218.0	193.1	246.0	232.9
Result from discontinued operations, Group share		0.0	0.0	14.4	16.4	(50.3)
Net profit, Group share	F9	233.4	179.0	170.6	169.2	130.7
R&D expenditure	F9	149.0	140.6	143.3	144.5	155.9
Capital expenditure	F34	235.9	279.6	202.4	240.3	287.3
Net cash flow before financing	F34	150.3	185.9	139.9	119.0	141.9
Total assets of continued operations, end of period		3,667.9	3,512.3	3,851.4	4,030.1	4,145.7
Group shareholders' equity, end of period		1,751.7	1,677.1	1,704.6	1,731.6	1,789.6
Consolidated net financial debt of continued operations, end of period	F24	222.5	215.0	298.3	321.3	296.3
Gearing ratio of continued operations, end of period (in %)	F24	11.0	11.1	14.6	15.3	13.8
Average net debt/recurring EBITDA (in %)		47.7	44.2	51.9	61.8	57.6
Capital employed, end of period	F31	2,259.4	2,233.6	2,335.3	2,414.5	2,397.4
Capital employed, average	F31	2,224.6	2,241.3	2,240.1	2,402.2	2,398.7

* including the elimination of the transactions between continued and discontinued operations.

DATA PER SHARE

(in EUR / share)	NOTE	2012	2013	2014	2015	2016
Earnings per share						
Recurring EPS	F39	2.47	1.96	1.79	2.27	2.14
EPS – basic	F39	2.09	1.61	1.58	1.56	1.20
EPS – diluted	F39	2.08	1.60	1.57	1.55	1.19
Gross dividend		1.00	1.00	1.00	1.20	1.30
Net cash flow before financing, basic	F34	1.35	1.67	1.29	1.10	1.30
Total assets of continued operations, end of period		32.78	32.00	35.63	37.29	37.92
Group shareholders' equity, end of period		15.66	15.28	15.77	16.02	16.37
Shareprice						
High		44.12	42.12	38.21	45.55	58.72
Low		32.30	31.54	30.42	31.82	32.38
Average		38.57	35.72	34.32	39.12	47.77
Close		41.69	33.96	33.31	38.67	54.15

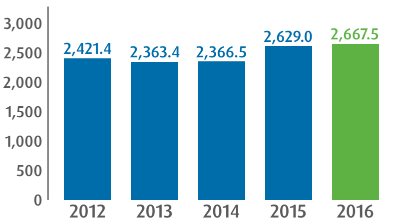
All Group KPIs include the discontinued operations, unless mentioned otherwise. Zinc Chemicals contributed for 10 months in the 2016 KPIs of the Discontinued Operations, unless mentioned otherwise.

NUMBER OF SHARES

	NOTE	2012	2013	2014	2015	2016
Total number of issued shares, end of period	F39	120,000,000	120,000,000	112,000,000	112,000,000	112,000,000
of which shares outstanding	F39	111,886,512	109,771,339	108,085,728	108,072,466	109,326,850
of which treasury shares	F39	8,113,488	10,228,661	3,914,272	3,927,534	2,673,150
Average number of shares outstanding, basic	F39	111,593,474	111,257,259	108,062,085	108,445,128	108,887,828
Average number of shares outstanding, diluted	F39	112,346,081	111,733,165	108,451,847	108,927,245	109,685,160

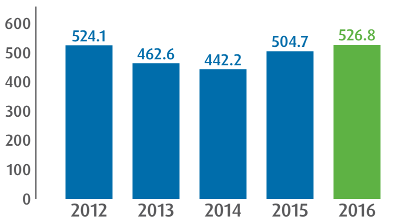
REVENUES (EXCLUDING METAL)

EUR million



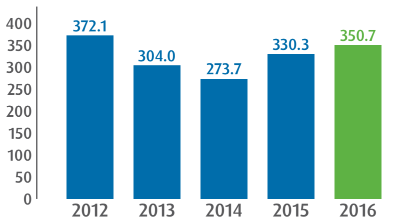
RECURRING EBITDA

EUR million



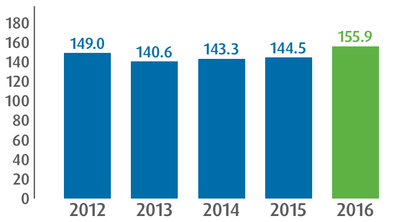
RECURRING EBIT

EUR million



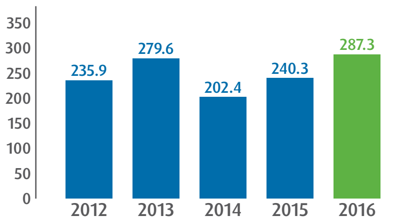
R&D EXPENDITURE

EUR million



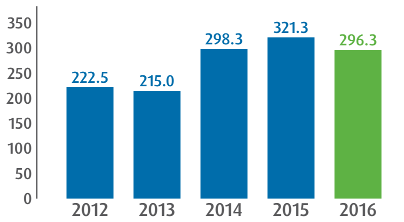
CAPITAL EXPENDITURE

EUR million



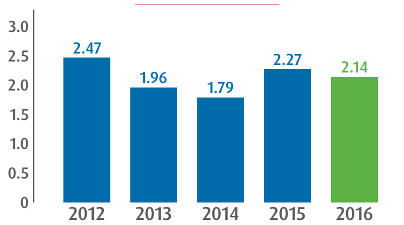
NET FINANCIAL DEBT

EUR million



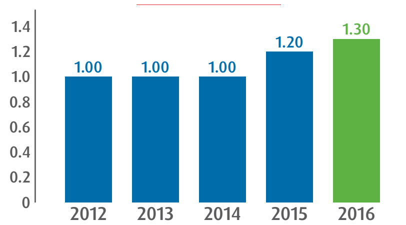
RECURRING EPS

EUR



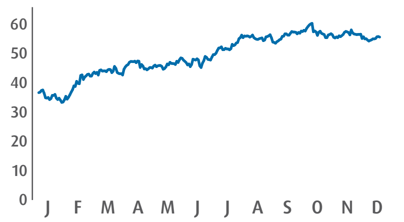
GROSS DIVIDEND

EUR



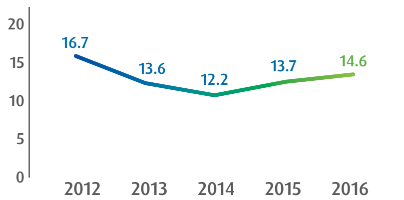
SHARE PRICE

EUR



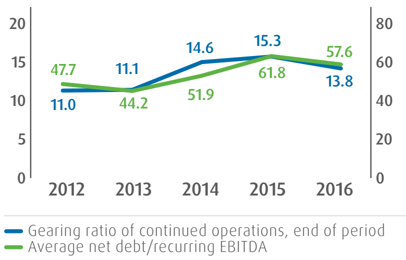
RETURN ON CAPITAL EMPLOYED (ROCE)

%



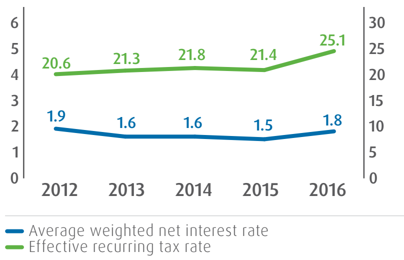
GEARING RATIO & AVERAGE NET DEBT/RECURRING EBITDA

%



INTEREST RATE & TAX RATE

%

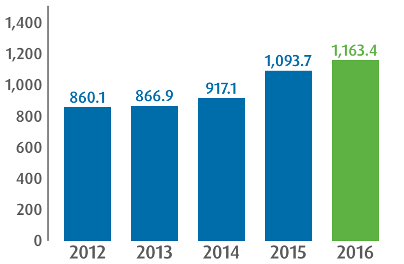


CATALYSIS

(in million EUR unless stated otherwise)	2012	2013	2014	2015	2016
Total turnover	1,871.9	2,020.2	2,181.3	2,749.3	2,779.1
Total revenues (excluding metal)	860.1	866.9	917.1	1,093.7	1,163.4
Recurring EBITDA	124.4	112.8	124.9	172.3	203.4
Recurring EBIT	91.0	73.3	82.6	124.2	152.5
of which associates	10.5	2.5	7.0	8.8	9.2
Total EBIT	83.8	73.7	79.9	115.9	125.6
Recurring EBIT margin (in %)	9.3	8.2	8.2	10.6	12.3
R&D expenditure	85.8	82.0	83.2	91.1	102.0
Capital expenditure	75.7	84.4	59.8	78.7	46.5
Capital employed, end of period	795.5	809.5	851.4	968.2	911.2
Capital employed, average	797.6	804.6	811.4	929.6	917.7
Return on Capital Employed (ROCE) (in %)	11.4	9.1	10.2	13.4	16.6
Workforce, end of period (fully consolidated)	2,120	2,173	2,290	2,443	2,464
Workforce, end of period (associates)	161	167	167	168	177

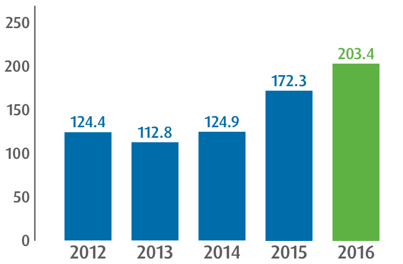
REVENUES (EXCLUDING METAL)

EUR million



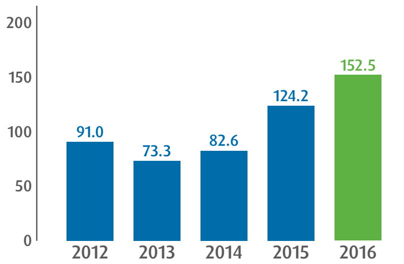
RECURRING EBITDA

EUR million



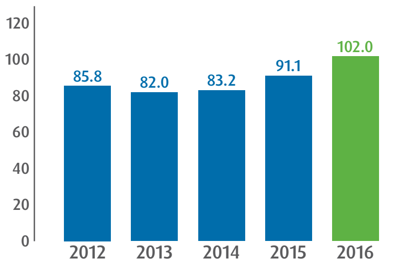
RECURRING EBIT

EUR million



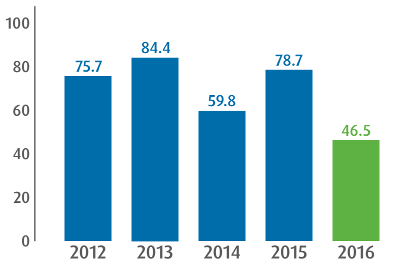
R&D EXPENDITURE

EUR million



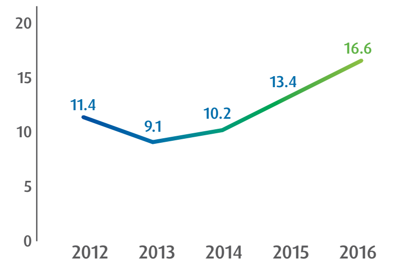
CAPITAL EXPENDITURE

EUR million



RETURN ON CAPITAL EMPLOYED (ROCE)

%

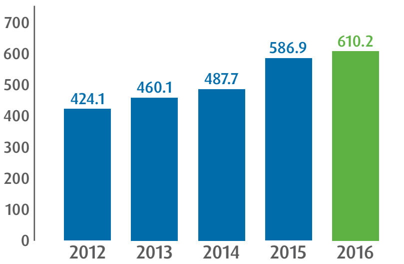


ENERGY & SURFACE TECHNOLOGIES

(in million EUR unless stated otherwise)	2012	2013	2014	2015	2016
Total turnover	1,078.9	1,132.3	1,191.6	1,475.1	1,469.0
Total revenues (excluding metal)	424.1	460.1	487.7	586.9	610.2
Recurring EBITDA	67.9	72.1	90.4	112.6	131.6
Recurring EBIT	33.8	40.0	54.1	70.2	81.7
of which associates	4.2	2.7	4.7	(3.5)	1.0
Total EBIT	3.4	36.6	53.4	37.3	74.2
Recurring EBIT margin (in %)	7.0	8.1	10.1	12.6	13.2
R&D expenditure	18.3	18.6	19.9	20.3	20.2
Capital expenditure	54.4	65.6	46.6	42.5	144.3
Capital employed, end of period	510.6	502.8	618.6	633.4	752.0
Capital employed, average	509.6	512.5	535.8	640.0	695.3
Return on Capital Employed (ROCE) (in %)	6.6	7.8	10.1	11.0	11.7
Workforce, end of period (fully consolidated)	2,111	2,061	2,181	2,258	2,357
Workforce, end of period (associates)	1,057	1,056	930	936	847

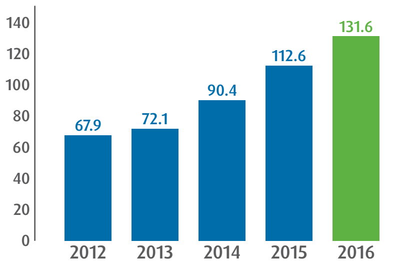
REVENUES (EXCLUDING METAL)

EUR million



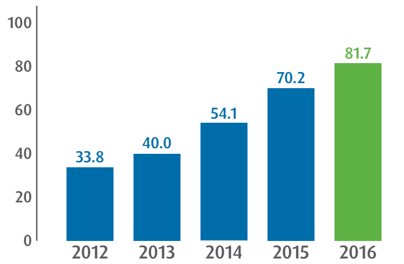
RECURRING EBITDA

EUR million



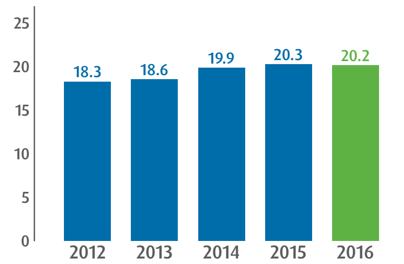
RECURRING EBIT

EUR million



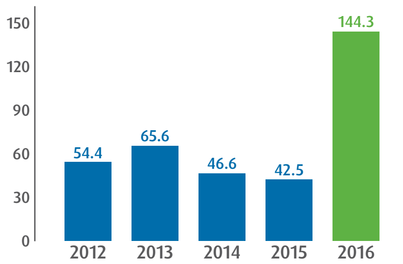
R&D EXPENDITURE

EUR million



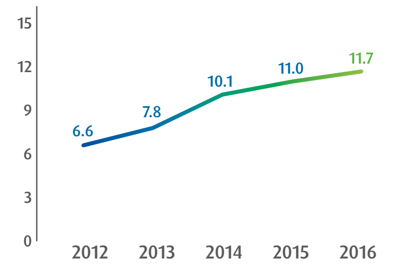
CAPITAL EXPENDITURE

EUR million



RETURN ON CAPITAL EMPLOYED (ROCE)

%

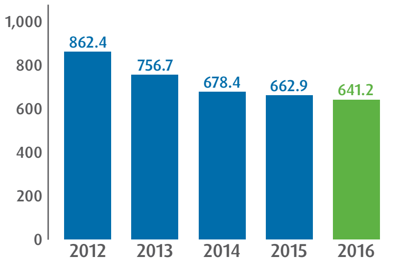


RECYCLING

(in million EUR unless stated otherwise)	2012	2013	2014	2015	2016
Total turnover	9,572.1	6,603.4	5,326.2	6,252.1	6,886.4
Total revenues (excluding metal)	862.4	756.7	678.4	662.9	641.2
Recurring EBITDA	335.1	278.3	208.7	204.3	187.2
Recurring EBIT	279.6	220.5	148.6	141.5	124.9
Total EBIT	272.3	220.5	141.2	132.5	115.5
Recurring EBIT margin (in %)	32.4	29.2	21.9	21.3	19.5
R&D expenditure	24.5	23.7	24.3	21.2	23.0
Capital expenditure	78.1	93.7	63.8	83.0	72.3
Capital employed, end of period	495.4	520.5	411.7	465.9	498.1
Capital employed, average	465.9	496.1	472.6	460.2	474.5
Return on Capital Employed (ROCE) (in %)	60.0	44.4	31.4	30.7	26.3
Workforce, end of period (fully consolidated)	3,371	3,304	3,302	3,211	3,170

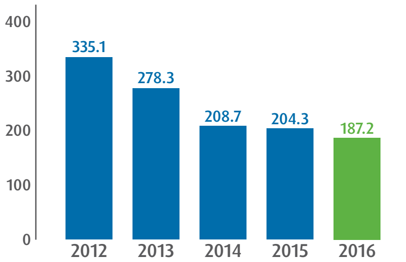
REVENUES (EXCLUDING METAL)

EUR million



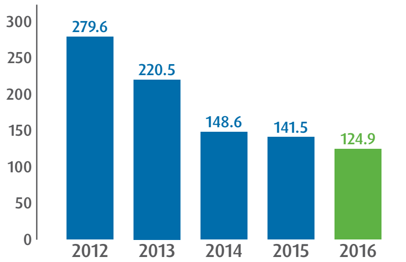
RECURRING EBITDA

EUR million



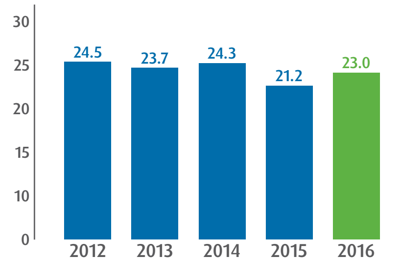
RECURRING EBIT

EUR million



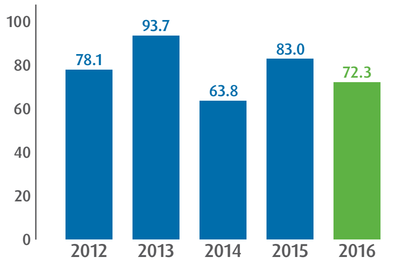
R&D EXPENDITURE

EUR million



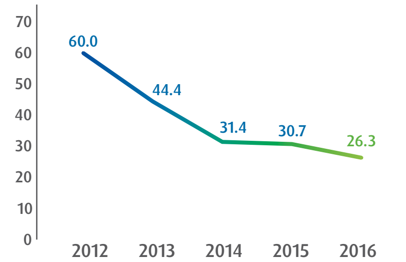
CAPITAL EXPENDITURE

EUR million



RETURN ON CAPITAL EMPLOYED (ROCE)

%

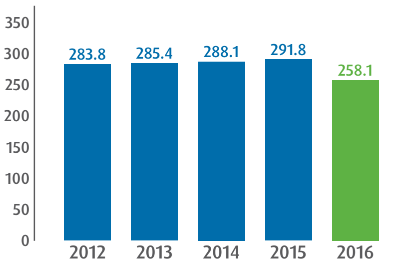


DISCONTINUED OPERATIONS

(in million EUR unless stated otherwise)	2012	2013	2014	2015	2016
Total turnover	664.9	647.4	709.0	744.7	652.6
Total revenues (excluding metal)	283.8	285.4	288.1	291.8	258.1
Recurring EBITDA	27.4	28.3	36.9	39.6	30.7
Recurring EBIT	8.8	9.8	19.1	31.0	30.6
of which associates	0.6	0.4	1.3	0.7	0.9
Total EBIT	12.1	(6.8)	19.7	19.6	(34.2)
Recurring EBIT margin (in %)	2.9	3.3	6.2	10.4	11.5
R&D expenditure	3.6	3.0	3.4	3.0	3.1
Capital expenditure	17.5	21.5	21.3	27.5	14.5
Capital employed, end of period	243.4	231.2	264.2	199.3	99.2
Capital employed, average	253.3	244.4	251.2	207.6	153.1
Return on Capital Employed (ROCE) (in %)	3.5	4.0	7.6	14.9	20.0
Workforce, end of period (fully consolidated)	1,642	1,545	1,505	1,517	946
Workforce, end of period (associates)	488	502	501	508	420

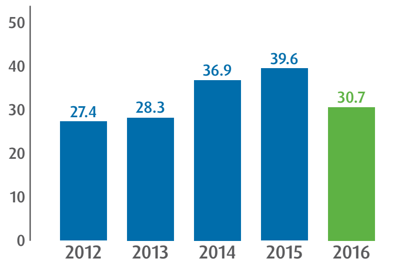
REVENUES (EXCLUDING METAL)

EUR million



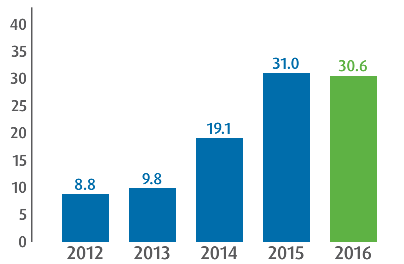
RECURRING EBITDA

EUR million



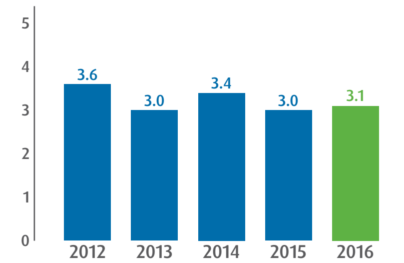
RECURRING EBIT

EUR million



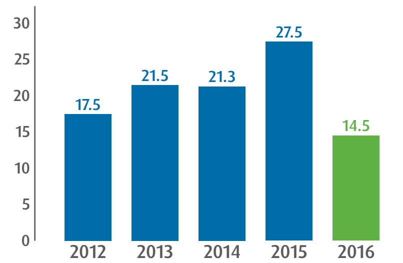
R&D EXPENDITURE

EUR million



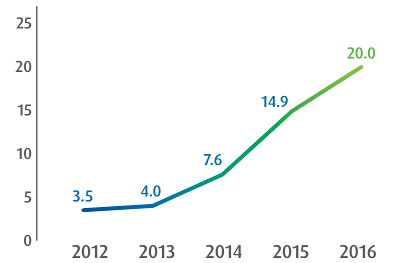
CAPITAL EXPENDITURE

EUR million



RETURN ON CAPITAL EMPLOYED (ROCE)

%



FINANCIAL STATEMENTS

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CONSOLIDATED INCOME STATEMENT

EUR thousand	NOTES	2015	2016
Turnover	F9	9,697,685	10,443,541
Other operating income	F9	58,030	59,813
Operating income		**9,755,715**	**10,503,354**
Raw materials and consumables	F9	(8,316,334)	(9,040,437)
Payroll and related benefits	F10	(640,390)	(636,071)
Depreciation and impairments	F9	(218,842)	(192,278)
Other operating expenses	F9	(354,338)	(379,664)
Operating expenses		**(9,529,903)**	**(10,248,451)**
Income (loss) from other financial assets	F12	(2,580)	(5,937)
RESULT FROM OPERATING ACTIVITIES		**223,232**	**248,966**
Financial income	F11	4,063	4,829
Financial expenses	F11	(16,580)	(19,962)
Foreign exchange gains and losses	F11	(12,070)	(2,535)
Share in result of companies accounted for using the equity method	F17	9,827	16,786
Profit (loss) before income tax		**208,472**	**248,084**
Income taxes	F13	(47,736)	(56,420)
Profit (loss) from continuing operations		160,736	191,663
Profit (loss) from discontinued operations (*)	F42	16,423	(50,303)
PROFIT (LOSS) OF THE PERIOD		**177,159**	**141,360**
of which minority share		7,934	10,636
of which Group share		169,225	130,724
EUR			
Basic earnings per share from continuing operations	F39	1.41	1.66
Total basic earnings per share	F39	1.56	1.20
Diluted earnings per share from continuing operations	F39	1.41	1.65
Total diluted earnings per share	F39	1.55	1.19
Dividend per share		1.20	1.30

(*) Attributable to equity holders of these companies.

The notes on pages 95 to 168 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

EUR thousand	NOTES	2015	2016
Profit (loss) of the period from continuing operations		**160,736**	**191,663**
Items in other comprehensive income that will not be reclassified to P&L			
Changes due to remeasurements of post employment benefit obligations		(16,450)	(27,638)
Changes in deferred taxes directly recognised in other comprehensive income		2,873	6,018
Items in other comprehensive income that may be subsequently reclassified to P&L			
Changes in available-for-sale financial assets reserves		(15,776)	111
Changes in cash flow hedge reserves		(13,090)	35,991
Changes in deferred taxes directly recognised in other comprehensive income		4,474	(10,483)
Changes in currency translation differences		(656)	30,226
Other comprehensive income from continuing operations	F23	**(38,625)**	**34,225**
Total comprehensive income from discontinued operations		23,218	(55,378)
Total comprehensive income for the period		**145,328**	**170,510**
of which Group share		139,578	158,249
of which minority share		5,751	12,261

The deferred tax impact on the consolidated statement of comprehensive income is due to the cash flow hedge reserves for EUR -10.5 million and to employee benefit reserves for EUR 6.0 million.
The notes on pages 95 to 168 are an integral part of these consolidated financial statements.

CONSOLIDATED BALANCE SHEET

EUR thousand	NOTES	31/12/2015	31/12/2016
Non-current assets		**1,614,204**	**1,727,409**
Intangible assets	F14, F15	251,791	305,340
Property, plant and equipment	F16	1,022,591	1,070,403
Investments accounted for using the equity method	F17	189,802	195,332
Available-for-sale financial assets	F18	29,236	26,414
Loans granted	F18	1,534	1,201
Trade and other receivables	F20	15,194	11,114
Deferred tax assets	F21	104,057	117,605
Current assets		**1,996,272**	**2,164,857**
Loans granted	F18	2,654	14,787
Inventories	F19	1,053,669	1,188,822
Trade and other receivables	F20	829,805	844,271
Income tax receivables		35,659	32,517
Cash and cash equivalents	F22	74,486	84,460
Assets of discontinued operations	F42	**419,599**	**253,484**
TOTAL ASSETS		**4,030,075**	**4,145,751**
Equity of the Group		**1,784,970**	**1,848,045**
Group shareholders' equity		**1,698,721**	**1,829,014**
Share capital and premiums		502,862	502,862
Retained earnings		1,501,290	1,559,969
Currency translation differences and other reserves	F23	(175,518)	(144,200)
Treasury shares		(129,913)	(89,616)
Minority interest		**52,577**	**58,446**
Elements of comprehensive income of discontinued operations		**33,671**	**(39,417)**
Non-current liabilities		**490,243**	**491,290**
Provisions for employee benefits	F27	312,357	337,907
Financial debt	F24	71,298	24,394
Trade and other payables	F25	24,654	41,656
Deferred tax liabilities	F21	6,235	6,924
Provisions	F29, F30	75,699	80,409
Current liabilities		**1,525,669**	**1,661,512**
Financial debt	F24	338,871	400,786
Trade and other payables	F25	1,095,371	1,161,371
Income tax payable		54,889	57,666
Provisions	F29, F30	36,538	41,690
Liabilities of discontinued operations	F42	**229,193**	**144,908**
TOTAL EQUITY & LIABILITIES		**4,030,075**	**4,145,751**

The notes on pages 95 to 168 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

EUR thousand	SHARE CAPITAL & PREMIUMS	RESERVES	CURRENCY TRANSLATION & OTHER RESERVES	TREASURY SHARES	MINORITY INTEREST	TOTAL FOR CONTINUING OPERATIONS	ELEMENTS OF COMPREHENSIVE INCOME OF DISCONTINUED OPERATIONS	TOTAL EQUITY
Balance at the beginning of 2015	**502,862**	**1,458,344**	**(135,955)**	**(130,871)**	**45,301**	**1,739,681**	**10,452**	**1,750,134**
Result of the period	–	153,203	–	–	7,530	160,733	16,424	177,157
Other comprehensive income for the period	–	–	(36,335)	–	(2,290)	(38,625)	6,794	(31,831)
Total comprehensive income for the period	**–**	**153,203**	**(36,335)**	**–**	**5,240**	**122,108**	**23,218**	**145,325**
Changes in share-based payment reserves	–	–	5,841	–	–	5,841	–	5,841
Capital increase	–	–	–	–	7,414	7,414	–	7,414
Dividends	–	(108,601)	–	–	(5,377)	(113,978)	–	(113,978)
Transfers	–	(1,655)	(9,070)	10,725	–	–	–	–
Changes in treasury shares	–	–	–	(9,767)	–	(9,767)	–	(9,767)
Balance at the end of 2015	**502,862**	**1,501,290**	**(175,518)**	**(129,913)**	**52,577**	**1,751,299**	**33,671**	**1,784,970**
Result of the period	–	181,203	–	–	10,460	191,663	(50,303)	141,360
Other comprehensive income for the period	–	–	32,513	–	1,712	34,225	(5,075)	29,150
Total comprehensive income for the period	**–**	**181,203**	**32,513**	**–**	**12,172**	**225,888**	**(55,378)**	**170,510**
Changes in share-based payment reserves	–	–	3,820	–	–	3,820	–	3,820
Dividends	–	(141,769)	–	–	(4,747)	(146,515)	–	(146,515)
Transfers	–	6,839	(9,094)	2,255	–	–	–	–
Changes in treasury shares	–	–	–	38,041	–	38,041	–	38,041
Changes in scope	–	12,405	4,079	–	(1,557)	14,927	(17,708)	(2,781)
Balance at the end of 2016	**502,862**	**1,559,969**	**(144,200)**	**(89,616)**	**58,446**	**1,887,460**	**(39,416)**	**1,848,045**

The legal reserve of EUR 50,000 thousand which is included in the retained earnings is not available for distribution.

The share capital of the Group as at 31 December 2016 was composed of 112,000,000 shares with no par value.

The notes on pages 95 to 198 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOW

EUR thousand	2015	2016
Profit (loss) from continuing operations	160,736	191,664
Adjustments for profit of equity companies	(9,827)	(16,786)
Adjustment for non-cash transactions	234,635	188,912
Adjustments for items to disclose separately or under investing and financing cashflows	50,707	66,731
Change in working capital requirement	(113,111)	13,253
Cashflow generated from operations	**323,139**	**443,778**
Dividend received	23,921	8,517
Tax paid during the period	(80,931)	(65,301)
Government grants received	(981)	(2,270)
NET OPERATING CASHFLOW	**265,148**	**384,723**
Acquisition of property, plant and equipment	(204,494)	(207,017)
Acquisition of intangible assets	(20,856)	(80,764)
Acquisition of new subsidiaries, net of cash acquired	458	–
Acquisition of/capital increase in associates	(1,764)	–
Acquisition of financial assets	(76)	(8,554)
New loans extended	(3,252)	(13,000)
Sub-total acquisitions	**(229,984)**	**(309,336)**
Disposal of property, plant and equipment	2,121	4,337
Disposal of intangible assets	1,739	778
Disposal of subsidiaries and associates, net of cash disposed	644	138,604
Capital decrease in associates	220	–
Disposal of financial fixed assets	–	5,491
Repayment of loans	3,364	750
Internal transfers	–	(49,261)
Sub-total disposals	**8,088**	**100,698**
NET CASHFLOW GENERATED BY (USED IN) INVESTING ACTIVITIES	**(221,896)**	**(208,638)**
Capital increase (decrease) minority	3,457	–
Own shares	(9,767)	38,041
Interest received	3,714	3,258
Interest paid	(9,331)	(9,667)
New loans and repayments	26,837	6,490
Dividends paid to Umicore shareholders	(108,638)	(138,266)
Dividends paid to minority shareholders	(5,377)	(4,747)
NET CASHFLOW GENERATED BY (USED IN) FINANCING ACTIVITIES	**(99,104)**	**(104,891)**
Effect of exchange rate fluctuations	(17,300)	1,401
TOTAL NET CASHFLOW OF THE PERIOD FOR CONTINUING OPERATIONS	(73,153)	**72,596**
Net cash and cash equivalents at the beginning of the period for continuing operations	**102,943**	**66,167**
Impact of final financing carved out entities	**36,378**	**(67,488)**
Net cash and cash equivalents at the end of the period for continuing operations	**66,167**	**71,275**
Cash for discontinued operations	**37,872**	**45,325**
of which cash and cash equivalents	112,358	129,785
of which bank overdrafts	(8,318)	(13,185)

The notes on pages 95 to 198 are an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

The company's consolidated financial statements and the management report prepared in accordance with article 119 of the Belgian Companies Code set forth on pages 1-52 and 84-169, for the year ended 31 December 2016 were authorised for issue by the Board of Directors on 9 March 2017. They have been prepared in accordance with the legal and regulatory requirements applicable to the consolidated financial statements of Belgian companies. They include those of the company, its subsidiaries and its interests in companies accounted for using the equity method.

F1 BASIS OF PREPARATION

The Group presents its annual consolidated financial statements in accordance with all International Financial Reporting Standards (IFRS) adopted by the European Union (EU).

The consolidated financial statements are presented in thousands of euros, rounded to the nearest thousand, and have been prepared on a historical cost basis, except for those items that are measured at fair value.

F2 ACCOUNTING POLICIES

2.1 PRINCIPLES OF CONSOLIDATION AND SEGMENTATION

2.1.1 SUBSIDIARIES

Subsidiaries are all entities (including structured entities) over which the group has control. The group controls an entity when the group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power over the entity. Subsidiaries are fully consolidated from the date on which control is transferred to the group. They are deconsolidated from the date that control ceases.

Note F5 lists all significant subsidiaries of the company at the closing date.

The group applies the acquisition method to account for business combinations. The consideration transferred for the acquisition of a subsidiary is the fair values of the assets transferred, the liabilities incurred to the former owners of the acquiree and the equity interests issued by the group. The consideration transferred includes the fair value of any asset or liability resulting from a contingent consideration arrangement. Identifiable assets acquired and liabilities and contingent liabilities assumed in a business combination are measured initially at their fair values at the acquisition date. The group recognises any minority interest in the acquiree on an acquisition-by-acquisition basis, either at fair value or at the minority interest's proportionate share of the recognised amounts of acquiree's identifiable net assets. Acquisition-related costs are expensed as incurred.

If the business combination is achieved in stages, the acquisition date carrying value of the acquirer's previously held equity interest in the acquiree is re-measured to fair value at the acquisition date; any gains or losses arising from such re-measurement are recognised in profit or loss.

Any contingent consideration to be transferred by the group is recognised at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration that is deemed to be an asset or liability is recognised in profit or loss. Contingent consideration that is classified as equity is not re-measured, and its subsequent settlement is accounted for within equity.

Inter-company transactions, balances and unrealised gains on transactions between group companies are eliminated. Unrealised losses are also eliminated. When necessary, amounts reported by subsidiaries have been adjusted to conform with the group's accounting policies.

IFRS 5 (Non-current Assets Held for Sale and Discontinued Operations) does not specify the treatment for the elimination of inter-company transactions between discontinued and continued operations. As an accounting policy Umicore opts to not eliminate the intercompany transactions within the income statement between the discontinued and continued operations. For the balance sheet presentation however, IFRS 10 (Consolidated Financial Statements) overrides IFRS 5 and requires all intercompany balances to be eliminated including between the discontinued and continued operations.

2.1.2 CHANGES IN OWNERSHIP INTERESTS IN SUBSIDIARIES WITHOUT CHANGE OF CONTROL

Transactions with minority interests that do not result in loss of control are accounted for as equity transactions – that is, as transactions with the owners in their capacity as owners. The difference between fair value of any consideration paid and the relevant share acquired of the carrying value of net assets of the subsidiary is recorded in equity. Gains or losses on disposals to minority interests are also recorded in equity.

2.1.3 DISPOSAL OF SUBSIDIARIES

When the group ceases to have control, any retained interest in the entity is remeasured to its fair value at the date when control is lost, with the change in carrying amount recognised in profit or loss. The fair value is the initial carrying amount for the purposes of subsequently accounting for the retained interest as an associate, joint venture or financial asset. In addition, any amounts previously recognised in other comprehensive income in respect of that entity are accounted for as if the group had directly disposed of the related assets or liabilities. This may mean that amounts previously recognised in other comprehensive income are reclassified to profit or loss.

2.1.4 ASSOCIATES

Associates are all entities over which the group has significant influence but not control, generally accompanying a shareholding of between 20% and 50% of the voting rights. Investments in associates are accounted for using the equity method of accounting. Under the equity method, the investment is initially recognised at cost, and the carrying amount is increased or decreased to recognise the investor's share of the profit or loss of the investee after the date of acquisition. The group's investment in associates includes goodwill identified on acquisition. If the ownership interest in an associate is reduced but significant influence is retained, only a proportionate share of the amounts previously recognised in other comprehensive income is reclassified to profit or loss where appropriate. The group's share of post-acquisition profit or loss is recognised in the income statement, and its share of post-acquisition movements in other comprehensive income is recognised in other comprehensive income with a corresponding adjustment to the carrying amount of the investment. When the group's share of losses in an associate equals or exceeds its interest in the associate, including any other unsecured receivables, the group does not recognise further losses, unless it has incurred legal or constructive obligations or made payments on behalf of the associate. The group determines at each reporting date whether there is any objective evidence that the investment in the associate is impaired. If this is the case, the group calculates the amount of impairment as the difference between the recoverable amount of the associate and its carrying value and recognises the amount adjacent to "share of profit/(loss) of associates" in the income statement.

Profits and losses resulting from upstream and downstream transactions between the group and its associate are recognised in the group's financial statements only to the extent of unrelated investor's interests in the associates. Unrealised losses are eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of associates have been changed where necessary to ensure consistency with the policies adopted by the group. Dilution gains and losses arising in investments in associates are recognised in the income statement.

2.1.5 JOINT ARRANGEMENTS

The group applies IFRS 11 to all joint arrangements. Under IFRS 11 investments in joint arrangements are classified as either joint operations or joint ventures depending on the contractual rights and obligations each investor. The group has assessed the nature of its joint arrangements and determined them to be joint ventures. Joint ventures are accounted for using the equity method. Under the equity method of accounting, interests in joint ventures are initially recognised at cost and adjusted thereafter to recognise the group's share of the post-acquisition profits or losses and movements in other comprehensive income.

When the group's share of losses in a joint venture equals or exceeds its interests in the joint ventures (which includes any long-term interests that, in substance, form part of the group's net investment in the joint ventures), the group does not recognise further losses, unless it has incurred obligations or made payments on behalf of the joint ventures.

Unrealised gains on transactions between the group and its joint ventures are eliminated to the extent of the group's interest in the joint ventures. Unrealised losses are also eliminated unless the transaction provides evidence of an impairment of the asset transferred. Accounting policies of the joint ventures have been changed where necessary to ensure consistency with the policies adopted by the group.

2.1.6 SEGMENT REPORTING

Note F7 provides the Company's segment information, in line with IFRS 8. Umicore is organised in business units. Operating segments under IFRS 8 at Umicore are differentiated by their growth drivers in the area's of Catalysis, Energy & Surface Technologies, and Recycling.

This clustering anticipates the planned divestment of the company's zinc-related activities. The Building Products and Zinc Chemicals business units are reported as discontinued until their effective divestment. Zinc Chemicals has been sold effectively at the end of October 2016.

The Catalysis segment produces automotive catalysts for emission abatement in light and heavy duty vehicles as well as catalyst products used in chemical processes such as the fine chemical and life science industries. These catalysts are mainly based on PGM metals. The Energy & Surface Technologies segment is focused amongst other on materials used in the growing markets of rechargeable batteries, in both portable electronics as well as in electrified electric vehicles and solar energy. It also offers material solutions for surface treatment in industries such as construction and electronics. The segment's products are largely based on cobalt, nickel, germanium and indium. The Recycling segment recovers a large number of precious and other metals from a wide range of waste streams and industrial residues. The Recycling operations extend also to the production of jewellery materials (including recycling services) as well as the recycling of rechargeable batteries. The segment also offers products for various applications including chemical, electric, electronic, automotive and special glass applications. All its products apply precious metals to enhance specific product capabilities.

Corporate covers corporate activities, shared operational functions and the Group's Research, Development & Innovation unit. Umicore's minority share in Element Six Abrasives is also included in Corporate.

Operating segments are reported in a manner consistent with the internal reporting provided to the Board and the Executive Committee.

The segment results, assets and liabilities include items directly attributable to the segment as well as those elements that can reasonably be allocated to a segment.

The pricing of inter-segment sales is based on an arm's length transfer pricing system. In the absence of relevant market price references, 'cost plus' mechanisms are used.

Associate companies are allocated to the business group with the closest fit from a market segment perspective.

2.2 INFLATION ACCOUNTING

For the reported period, there is no subsidiary in the Umicore Group having a functional currency belonging to a hyper-inflationary economy.

2.3 FOREIGN CURRENCY TRANSLATION

Functional currency: items included in the financial statements of each entity in the Group are measured using the currency that best reflects the economic substance of the underlying events and circumstances relevant to that entity. The consolidated financial statements are presented in euros which is the functional currency of the parent. To consolidate the Group and each of its subsidiaries, the financial statements are translated as follows:

- Assets and liabilities at the year-end rate as published by the European Central Bank.
- Income statements at the average exchange rate for the year.
- The components of shareholders' equity at the historical exchange rate.

Exchange differences arising from the translation of the net investment in foreign subsidiaries, joint ventures and associated entities at the period-end exchange rate are recorded as part of the shareholders' equity under "currency translation differences".

When a foreign operation is partially disposed of or sold, exchange differences that were recorded in equity are recognised in the income statement as part of the gain or loss on sale.

Goodwill and fair value adjustments arising on the acquisition of a foreign entity are treated as local currency assets and liabilities of the foreign entity and are translated at the closing rate.

2.4 FOREIGN CURRENCY TRANSACTIONS

Foreign currency transactions are recognised during the period in the functional currency of each entity at exchange rates prevailing at the date of transaction. The date of a transaction is the date at which the transaction first qualifies for recognition. For practical reasons a rate that approximates the actual rate at the date of the transaction is used at some operations, for example, an average rate for the week or the month in which the transactions occur.

Subsequently, monetary assets and liabilities denominated in foreign currencies are translated at the closing rate at the end of the reporting period.

Gains and losses resulting from the settlement of foreign currency transactions, and from the translation of monetary assets and liabilities denominated in foreign currencies, are recognised in the income statement as a financial result.

In order to hedge its exposure to certain foreign exchange risks, the Company has entered into certain forward contracts (see Chapter 2.21, Financial instruments).

2.5 PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment is recorded at historical cost, less accumulated depreciation and impairment losses. Cost includes all direct costs and appropriate allocation of indirect costs incurred to bring the asset to working condition for its intended use.

Borrowing costs that are directly attributable to investments are capitalised together with the costs of the assets in accordance with IAS 23. All borrowing costs that cannot be linked directly to an investment are recognised as expenses in the period when incurred.

The straight-line depreciation method is applied through the estimated useful life of the assets. Useful life is the period of time over which an asset is expected to be used by the company.

Repair and maintenance costs are expensed in the period in which they are incurred, if they do not increase the future economic benefits of the asset. Otherwise they are classified as separate components of items of property, plant and equipment. Those major components of items of property, plant and equipment that are replaced at regular intervals are accounted for as separate assets as they have useful lives different from those items of property, plant and equipment to which they relate. Umicore's PPE, being complex and highly customised industrial assets, typically do not have an individual resale value if put outside the overall context of the operations. Therefore no residual value is taken into account when determining the depreciable value.

The typical useful life per main type of property, plant and equipment are as follows:

For material newly acquired or constructed assets, the useful life is separately assessed at the moment of the investment request and can deviate from the above standards.

Management determines the estimated useful lives and related depreciation charges for property, plant and equipment. Management uses standard estimates based on a combination of physical durability and projected product life or industry life cycles. These useful lives could change significantly as a result of technical innovations, market developments or competitor actions. Management will increase the depreciation charge where useful lives are shorter than previously estimated, or it will write-off or write-down technically obsolete or non-strategic assets that have been abandoned or sold.

Land use rights are part of the Property, Plant and Equipment and are typically amortised over the contractual period.

	YEARS
Land	Non-depreciable
Buildings	
Industrial buildings	20
Improvements to buildings	10
Other buildings such as offices and laboratories	40
Investment properties	40
Plant, machinery and equipment	10
Furnaces	7
Small equipment	5
Furniture and vehicles	
Vehicles	5
Mobile handling equipment	7
Computer equipment	3–5
Furniture and office equipment	5–10

2.6 INTANGIBLE ASSETS & EQUITY TRANSACTION EXPENSES

2.6.1 EQUITY TRANSACTION EXPENSES

Expenses for formation and capital increase are deducted from the share capital.

2.6.2 GOODWILL

Goodwill represents the excess of the cost of an acquisition of a subsidiary, associate or jointly controlled entity over the Group's share in the fair value of the identifiable assets and liabilities of the acquired entity at the date of acquisition. Goodwill is recognised at cost less any accumulated impairment losses.

Goodwill from associates and joint ventures is presented in the balance sheet on the line "Investments accounted for under the equity method", together with the investment itself.

To assess impairment, goodwill is allocated to a cash generating unit (CGU). At each balance sheet date, these CGUs are tested for impairment, meaning an analysis is performed to determine whether the carrying amount of goodwill allocated to the CGU is fully recoverable. If the carrying amount is not fully recoverable, an appropriate impairment loss is recognised in the income statement. These impairment losses are never reversed.

The excess of the Group's interest in the fair value of the net identifiable assets acquired over the cost of acquisition is recognised in the income statement immediately.

2.6.3 RESEARCH AND DEVELOPMENT

Research costs related to the prospect of gaining new scientific or technological knowledge and understanding are recognised in the income statement as an incurred expense.

Development costs are defined as costs incurred for the design of new or substantially improved products and for the processes prior to commercial production or use. They are capitalised if, among others, the following conditions are met:

- the intangible asset will give rise to future economic benefits, or in other words, the market potential has been clearly demonstrated.
- the expenditures related to the process or product can be clearly identified and reliably measured.

In case it is difficult to clearly distinguish between research or development costs, the costs are considered as being research. If development costs are capitalised they are amortised using a straight-line method over the period of their expected benefit, in general five years.

2.6.4 CO_2 EMISSION RIGHTS

Within the framework of the Kyoto protocol, a third emission trading period started, covering 2013-2020. Therefore the Flemish Government granted emission rights to the Flemish sites of certain companies, including Umicore. Each year, at the end of February, one fifth of these emission rights is put on an official registry account. The release of emission rights to this registry account entails the capitalisation in the intangible assets, which is in line with the guidance of the Belgian Accounting Standards Commission. Gains on the recognition of emission rights at fair value are deferred until the certificates are used. Emission rights owned are subject to impairment testing but are not depreciated. If, at a certain closing date, it appears that the closing market price is below the carrying value, a write-down is booked. At each closing date, the group estimates the actual use of rights for the period and recognises a provision for the rights that will have to be restituted to the Government. The charge related to the impairment loss or the recognition of provisions are fully compensated in the income statement by the release of deferred revenue. Historically, Umicore owns the required rights to ensure its normal operating activities.

2.6.5 OTHER INTANGIBLE ASSETS

All of the following types are recorded at historical cost, less accumulated amortisation and impairment losses:

- Concessions, patents, licenses: are amortised over the period of their legal protection with a minimum of 5% (in general over five years).
- Customer portfolios: are typically amortised over a period of five years.
- ERP software are typically amortised over a period of ten years.
- Smaller software are typically amortised over a period of five years.

Umicore has currently no intangible asset with an indefinite useful live.

2.7 LEASE

2.7.1 FINANCIAL LEASE

Leases under which the company assumes a substantial part of the risks and rewards of ownership are classified as financial leases. They are measured at the lower of fair value and the estimated present value of the minimum lease payments at inception of the lease, less accumulated depreciation and impairment losses.

Each lease payment is allocated between the liability and finance charges so as to achieve a constant periodic rate of interest on the finance balance outstanding. The corresponding rental obligations, net of finance charges, are included in long-term payables. The interest element is charged to the income statement over the lease period. Leased assets are depreciated over the shorter of the useful life and the lease term.

2.7.2 OPERATING LEASE

Leases under which a substantial part of the risks and rewards of ownership are effectively retained by the lessor are classified as operating leases. All payments or receipts under operating lease are recognised as an operating expense in the income statement using the straight-line method.

The group leases metals to and from third parties for specified periods for which the group receives or pays fees. Metal lease contracts are typically concluded for less than one year. The metal leases from and to third parties are reported as off-balance sheet commitments.

2.8 AVAILABLE-FOR-SALE FINANCIAL ASSETS, LOANS AND NON CURRENT RECEIVABLES

All movements in available-for-sale financial assets, loans and receivables are accounted for at trade date.

Financial assets available for sale are carried at fair value. Unrealised gains and losses from changes in the fair value of such assets are recognised in equity as available-for-sale financial assets reserves. When the assets are sold or impaired, the accumulated fair value adjustments are included in the income statement as gains and losses. Financial assets are derecognised when the rights to receive cash flows from the investments have expired or have been transferred and the group has transferred substantially all risks and rewards of ownership.

Loans and receivables are carried at amortised cost less any impairment.

All write-downs are recorded on a separate account and are netted with the carrying amounts when all chances of recovery are depleted. Own shares are deducted from equity.

2.9 INVENTORY

Inventories are carried at the lower of cost or net realisable value. Cost comprises direct purchase or manufacturing costs and an appropriate allocation of overheads.

Inventories are classified as:

1. Base products with metal hedging
2. Base products without metal hedging
3. Consumables
4. Advances paid
5. Contracts in progress

Base products with metal hedging are metal-containing products on which Umicore is exposed to metal price fluctuation risks and where Umicore applies an active and structured risk management process to minimise the potential adverse effects of market price fluctuations on the financial performance of the Group.

The metal contents are classified in inventory categories that reflect their specific nature and business use: a.o. permanently tied up metal inventories and commercially available metal inventories. Depending on the metal inventory category, appropriate hedging mechanisms are applied.

A weighted average is applied per category of inventory.

Base products without metal hedging and consumables are valued using the weighted-average cost method.

Write-downs on inventories are recognised when turnover is slow or where the carrying amount is exceeding the net realisable value, meaning the estimated selling price less the estimated costs of completion and the estimated cost necessary to make the sale. Write-downs are presented separately. Advances paid are down-payments on transactions with suppliers for which the physical delivery has not yet taken place and are booked at nominal value. Contracts in progress are valued using the percentage-of-completion method.

2.10 TRADE AND OTHER RECEIVABLES

Trade and other receivables are measured at amortised cost, i.e. at the net present value of the receivable amount. Unless the impact of discounting is material, the nominal value is taken. Receivables are written down for irrecoverable amounts. All write-downs are recorded on a separate account and are netted with the carrying amounts when all chances of recovery are depleted.

Trade receivables of which substantially all the risks and rewards have been transferred are derecognised from the balance sheet. The positive fair value of derivative financial instruments is included under this heading.

2.11 CASH AND CASH EQUIVALENTS

Cash includes cash-in-hand and cash with banks. Cash equivalents are short-term, highly liquid investments that are readily convertible into known amounts of cash, have maturity dates of three months or less and are subject to an insignificant risk of change in value.

These items are carried in the balance sheet at nominal value or amortised cost. Bank overdrafts are included in the current liabilities on the balance sheet.

2.12 IMPAIRMENT OF NON-FINANCIAL ASSETS

Property, plant and equipment and other non-current assets, including intangible assets and financial assets not held for trading, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. If any such indication exists, the recoverable amount of the asset is estimated.

The recoverable amount is the higher of an asset's net selling price and value in use. To estimate the recoverable amount of individual assets the company often determines the recoverable amount of the cash-generating unit (CGU) to which the asset belongs.

Whenever the carrying amount of an asset exceeds its recoverable value, an impairment loss is recognised as an expense immediately.

A reversal of impairment losses is recognised when there is an indication that the impairment losses recognised for the asset or for the CGU no longer exist or have decreased. An impairment loss is reversed only to the extent that the asset's carrying amount does not exceed the carrying amount that would have been determined, net of depreciation or amortisation, if no impairment loss had been recognised.

2.13 SHARE CAPITAL AND RETAINED EARNINGS

A. Repurchase of share capital

When the company purchases some of its own shares, the consideration paid, including any attributable transaction costs net of income taxes, is deducted from the total shareholders' equity as treasury shares. No gain or loss shall be recognised in profit or loss on the purchase, sale, issue or cancellation of own shares. When such shares are subsequently sold or reissued, any consideration received is included in shareholders' equity.

B. Incremental costs directly attributable to the issue of new shares are shown in equity as a deduction from the proceeds of the issue, net of tax.

C. Dividends of the parent company payable on ordinary shares are only recognised as a liability following approval by the shareholders.

2.14 MINORITY INTERESTS

Minority interests include a proportion of the fair value of identifiable assets and liabilities recognised upon acquisition of a subsidiary that is attributable to third parties, together with the appropriate proportion of subsequent profits and losses.

In the income statement, the minority share in the Group's profit or loss is presented separately from the Group's consolidated result.

2.15 PROVISIONS

Provisions are recognised in the balance sheet when:

- There is a present obligation (legal or constructive) as a result of a past event.
- It is probable that an outflow of resources will be required to settle the obligation.
- A reliable estimate can be made on the amount of the obligation.

A constructive obligation is an obligation that derives from company actions where, by an established pattern of past practice or published policies, the company has indicated that it will accept certain responsibilities and, as a result, the company has created a valid expectation that it will discharge those responsibilities.

The amount recognised as a provision is the best estimate of the expenditure required to settle the present obligation at the end of the reporting period and taking into account the probability of the possible outcome of the event. Where the effect of the time value of money is material, the amount of a provision is the present value of the expenditure expected to be required to settle the obligation. The result of the yearly discounting of the provision, if any, is accounted for as a financial result.

The main types of provision are the following:

1. PROVISIONS FOR EMPLOYEE BENEFITS (SEE CHAPTER 2.16, EMPLOYEE BENEFITS)

2. ENVIRONMENTAL OBLIGATIONS

Environmental provisions are based on legal and constructive obligations from past events, in accordance with the company's environmental approach and applicable legal requirements. The full amount of the estimated obligation is recognised at the moment the event occurs. When the obligation is production/activity related, the provision is recognised gradually depending on normal usage/ production level.

3. OTHER PROVISIONS

Includes provisions for litigation, onerous contracts, warranties, exposure to equity investments and restructuring. A provision for restructuring is recognised when the company has approved a detailed and formal restructuring plan and the restructuring has either commenced or has been announced publicly before the end of the reporting period. Any restructuring provision only includes the direct expenditure arising from the restructuring which is necessarily entailed and is not associated with the ongoing activities of the Company.

2.16 EMPLOYEE BENEFITS

2.16.1 SHORT-TERM EMPLOYEE BENEFITS

These include wages, salaries and social security contributions, paid annual leave and sick leave, bonuses and non-monetary benefits, and are taken as an expense in the relevant period. All company managers are eligible for bonuses that are based on indicators including personal performance and key financial targets. The amount of the bonus is recognised as an expense, based on an estimation made at the end of the reporting period.

2.16.2 POST EMPLOYMENT BENEFITS (PENSIONS, MEDICAL CARE)

The company has various pension and medical care schemes in accordance with the conditions and practices of the countries it operates in. The schemes are generally funded through payments to insurance companies or trustee-administered funds.

2.16.2.1 DEFINED BENEFIT PLANS

The company has accounted for all legal and constructive obligations both under the formal terms of defined benefit plans and under the company's informal practices.

The amount presented in the balance sheet is based on actuarial calculations (using the projected unit credit method) and represents the present value of the defined benefit obligations and reduced by the fair value of the plan assets.

The past service costs are immediately recognised in the income statement since IAS 19 revised.

All remeasurements as a results of changes in the actuarial assumptions of post-employment defined benefit plans are recognised through other comprehensive income (OCI) in the period in which they occur and are disclosed in the statement of comprehensive income as post employment benefit reserves.

2.16.2.2 DEFINED CONTRIBUTION PLANS

The company pays contributions to publicly or privately administered insurance plans. The payments are recognised as expenses as they fall due and as such are included in personnel costs.

2.16.3 OTHER LONG-TERM EMPLOYEE BENEFITS (JUBILEE PREMIUMS)

These benefits are accrued for their expected costs over the period of employment using an accounting methodology similar to that for defined benefit pension plans. These obligations are in general valued annually by independent qualified actuaries. All actuarial losses or gains are immediately recognised in the income statement.

2.16.4 TERMINATION BENEFITS (PRE-RETIREMENT PLANS, OTHER TERMINATION OBLIGATIONS)

These benefits arise as a result of the company's decision to terminate an employee's employment before the normal retirement date or of an employee's decision to accept voluntary redundancy in exchange for those benefits. When they are reasonably predictable in accordance with the conditions and practices of the countries the company operates in, future obligations are also recognised.

These benefits are accrued for their expected costs over the period of employment, using an accounting methodology similar to that for defined benefit pension plans. In general, these obligations are valued annually by independent qualified actuaries. All actuarial losses or gains are immediately recognised in the income statement.

2.16.5 EQUITY AND EQUITY-RELATED COMPENSATION BENEFITS (SHARE-BASED PAYMENTS IFRS 2)

Different stock option and share programs allow company employees and company senior management to acquire or obtain shares of the company.

The option or share exercise price equals the market price of the (underlying) shares at the date of the grant. When the options are exercised, shares are delivered to the beneficiaries from existing own shares. For the share programmes, shares are delivered to the beneficiaries from existing own shares. In both cases, the equity is increased by the amount of the proceeds received corresponding to the exercise price.

The options and shares are typically vested at the moment of the grant and their fair value is recognised as an employee benefit expense with a corresponding increase in equity as share-based payment reserves. For the options, the expense to be recognised is calculated by an actuary, using a valuation model which takes into account all features of the stock options, the volatility of the underlying stock and an assumed exercise pattern.

As long as the options granted have not been exercised, their value is reported in the Statement of Changes in Equity as 'share-based payments reserve'. The value of the options exercised during the period is transferred to 'retained earnings'.

2.16.6 PRESENTATION

The impact of employee benefits on results is booked under operating results in the income statement, except for the interest and discount rate impacts which are classified under financial results.

2.17 FINANCIAL LIABILITIES

All movements in financial liabilities are accounted for at trade date.

Borrowings are initially recognised as proceeds received, net of transaction costs. Subsequently, they are carried at amortised cost using the effective interest rate method. Amortised cost is calculated by taking into account any issue costs, and any discount or premium on issue. Any differences between cost and redemption value are recognised in the income statement upon redemption.

2.18 TRADE AND OTHER PAYABLES

Trade payables are measured at amortised cost, i.e. at the net present value of the payable amount. Unless the impact of discounting is material, the nominal value is taken.

The negative fair value of derivative financial instruments is included under this heading.

2.19 INCOME TAXES

Taxes on profit or loss of the year include current and deferred tax. Such taxes are calculated in accordance with the tax regulations in effect in each country the company operates in.

Current tax is the expected tax payable on the taxable income of the year, using tax rates enacted at the end of the reporting period, and any adjustment to tax payable (or receivable) in respect of previous years.

The tax payable is determined based on tax laws and regulations that apply in each of the numerous jurisdiction in which the Group operates. The income tax positions taken are considered by the Group to be supportable and are intended to withstand challenge from tax authorities. However, it is accepted that some of the position can be uncertain and include interpretation of complex tax laws. Furthermore, some subsidiaries within the Group can be involved in tax audits usually in relation to prior years that can take time to conclude. The Group assesses its tax position individually and on a regular basis and if the tax payable differs from the amounts initially estimated then the difference is charged or credited in the accounts for the year in which it is determined.

Deferred taxes are calculated using the liability method on temporary differences arising between the tax base of assets and liabilities and their carrying amounts in the financial statements. These taxes are measured using the rate prevailing at the end of the reporting period or future applicable tax rates formally announced by the government in the country the Company operates in.

Deferred tax assets are only recognised to the extent that it is probable that future taxable profit will be available against which the temporary differences can be utilised.

Deferred tax assets and liabilities are offset and presented net only if they relate to income taxes levied by the same taxation authority on the same taxable entity.

2.20 REVENUE RECOGNITION

2.20.1 GOODS SOLD AND SERVICES RENDERED

Revenue from the sale of goods in transformation activities is recognised when significant risks and rewards of ownership have been transferred to the buyer, and no significant uncertainties remain regarding recovery of the consideration due, associated costs or the possible return of the goods.

Revenue from refining activities and services rendered is recognised by reference to the stage of completion of the transaction when this can be measured reliably.

2.20.2 GOVERNMENT GRANTS

A government grant is accounted for in the balance sheet initially as deferred income when there is reasonable assurance that it will be received and that the company will comply with the conditions attached to it. Grants are recognised in the income statement over the period necessary to match them with the costs they are intended to compensate.

2.21 FINANCIAL INSTRUMENTS

The company uses derivative financial and commodity instruments primarily to reduce the exposure to adverse fluctuations in foreign exchange rates, commodity prices, interest rates and other market risks. The company uses mainly spot and forward contracts to cover the metal and currency risk, and swaps to hedge the interest rate risk. The operations carried out on the futures markets are not of a speculative nature.

2.21.1 TRANSACTIONAL RISKS – FAIR VALUE HEDGING

Derivative financial and commodity instruments are used for the protection of the fair value of underlying hedged items (assets, liabilities and firm commitments) and are recognised initially at fair value at trade date.

All derivative financial and commodity instruments are subsequently measured at fair value at the end of the reporting period via the "Mark-to-Market" mechanism. All gains and losses are immediately recognised in the income statement – as an operating result, if commodity instruments, and as a financial result in all other cases.

The hedged items (physical commitments and commercial inventory, primarily) are valued at fair value when hedge accounting can be documented according to the criteria set out in IAS 39.

In the absence of obtaining fair value hedge accounting at inception as defined under IAS 39, the hedged items are kept at cost and are submitted to the valuation rules applicable to similar non-hedged items, i.e. the recognition at the lower of cost or market (IAS 2) for inventories, or the recognition of provisions for onerous contracts (IAS 37) for physical commitments (see also Chapter 2.22 – IAS 39 impact).

When there is a consistent practice of trading of metals through the use of commodity contracts by a dedicated subsidiary or a cash-generating unit (CGU) of the Group and by which the entity takes delivery of the underlying commodity to sell it within a short period after delivery for the purpose of generating a profit from short-term fluctuations in price or trading margins, the inventory is valued at fair value through the income statement and the related physical and/or commodity commitments are classified as derivatives and measured at fair value through the income statement.

2.21.2 STRUCTURAL RISKS – CASH FLOW HEDGING

Derivative financial and commodity instruments used for the protection of future cash flows are designated as hedges under cash flow hedge accounting. The effective portion of changes in the fair value of hedging instruments which qualify as cash flow hedges are recognised in the shareholders equity as hedging reserves until the underlying forecasted or committed transactions occur (i.e. affect the income statement). At that time the recognised gains and losses on the hedging instruments are transferred from equity to the income statement.

When the underlying hedged transactions are no longer probable or the hedges become ineffective, the corresponding hedging instrument will immediately be terminated and all profits or losses including those which were deferred in equity, are immediately recognised in the income statement.

In the absence of obtaining cash flow hedge accounting at inception as defined under IAS 39, then the fair value of the related hedging instruments is recognised in the income statement instead of the equity and this prior to the occurrence of the underlying forecasted or committed transactions (see also Chapter 2.22 – IAS 39 impact).

2.21.3 EMBEDDED DERIVATIVES

Executory contracts (the "host contract") may sometimes contain embedded derivatives. Embedded derivatives cause some or all of the cash flows that would otherwise be expected from the host contract, to be modified according to a specified interest rate, financial instrument price, commodity price, foreign exchange rate, or other variable. If it is concluded that such a derivative is not closely related to the host contract, it is separated from the host contract and accounted for under the rules of IAS 39 (fair value through profit or loss). The host contract is accounted for using the rules applicable to executory contracts, which effectively means that such a contract is not recognised in the balance sheet or profit and loss before delivery on the contract takes place. (see also Chapter 2.22 – IAS 39 impact).

2.22 NON-RECURRING RESULTS AND IAS 39 EFFECT

Non-recurring results relate primarily to restructuring measures, impairment of assets and other income or expenses arising from events or transactions that are clearly distinct from the ordinary activities of the company.

IAS 39 effect relates to non-cash timing differences in revenue recognition due to the non-application of or non-possibility of obtaining IAS 39 hedge accounting at inception to:

a) Transactional hedges, which implies that hedged items can no longer be measured at fair value and must be submitted to the valuation rules applicable to similar non-hedged items, i.e. the recognition at the lower of cost or market (IAS 2) for inventories, or the recognition of provisions for onerous contracts (IAS 37) for physical commitments.

b) Structural hedges, which implies that the fair value of the related hedging instruments are recognised in the income statement instead of equity and this prior to the occurrence of the underlying forecasted or committed transactions.

c) Derivatives embedded in executory contracts, which implies that fair value on the embedded derivatives are recognised in the income statement as opposed to the executory component where no fair value measurement is allowed.

F3 FINANCIAL RISK MANAGEMENT

Each of the Group's activities is exposed to a variety of risks, including changes in metal prices, foreign currency exchange rates, certain market-defined commercial conditions, and interest rates as well as credit and liquidity risks. The Group's overall risk management programme seeks to minimise the adverse effects on the financial performance of the Group by hedging most of these risks through the use of financial and insurance instruments.

3.1 CURRENCY RISK

Umicore's currency risk can be split into three distinct categories: structural, transactional and translational risks.

3.1.1 STRUCTURAL RISK

A portion of Umicore's revenues are structurally denominated in US dollar (USD), while many of our related operations are located outside the USD zone (particularly in Europe and Asia). Any change in the USD exchange rate against the Euro or other currencies which are not pegged to the USD will have an impact on our results.

The largest portion of such structural currency exposure derives from US dollar denominated metal prices, which have an impact on the Euro denominated value of surplus metal recovered from recyclable materials.

Another portion of this exposure stems from non-metal related revenues denominated in US dollar such as refining charges or product premia. For this portion and at prevailing exchange rates at the end of 2016 and excluding hedging, a strengthening of the US dollar by 1 cent against the Euro is estimated to give rise to an increase in revenues and operating result of approximately EUR 1.5 million on an annual basis. Conversely, a weakening of the US dollar by 1 cent against the Euro is estimated to give rise to a decrease in revenues and operating result of the same magnitude on an annual basis. This non-metal related sensitivity is an estimate and is somewhat theoretical since the exchange rate level may impact commercial conditions negotiated in USD.

To a lesser extent, next to the sensitivity USD vs Euro there is also a structural and increasing sensitivity to certain other currency couples such as the USD and Euro vs the Brazilian real, the Korean won, the Chinese yuan and the South African rand.

Structural currency hedging
Umicore's hedging policy allows for hedging forward its structural currency exposure, either in conjunction with the hedging of structural metal price exposure or in isolation, typically when a currency exchange rate or a metal price denominated in Euro is above its historical average and at a level where attractive margins can be secured.

At the end of 2016, Umicore had structural currency hedging in place relating to its non-metal related currency sensitivity for a.o. the following pairs of currencies: EUR/USD, USD/KRW, EUR/ZAR, USD/ZAR and USD/CAD.

3.1.2 TRANSACTIONAL RISK
The company is also subject to transactional risks in respect of currencies, i.e. the risk of currency exchange rates fluctuating between the time the price is fixed with a customer or supplier and the time the transaction is settled. The Group's policy is to hedge the transactional risk to the maximum extent possible, primarily through forward contracts.

3.1.3 TRANSLATIONAL RISK
Umicore is an international company and has foreign operations which do not have the Euro as their functional currency. When the results and the balance sheets of these operations are consolidated into Umicore's Group accounts the translated amount is exposed to variations in the value of such local currencies against the Euro, predominantly the USD, the Brazilian real, the Korean won, the Chinese yuan and the South African rand. While Umicore does not systematically hedge its translational currency exposures, it may enter into ad hoc translational hedges.

3.2 METAL PRICE RISK
Umicore's metal price risk can be split into three distinct categories: structural, transactional and inventory risks.

3.2.1 STRUCTURAL RISK
Umicore is exposed to structural metals-related price risks. Those risks relate mainly to the impact that metal prices have on surplus metals recovered from materials supplied for treatment or any other revenue component that fluctuates with the metal price. Umicore's policy allows to hedge such metal price exposure, typically if forward metal prices expressed in the functional currency of the concerned businesses are above their historical average and at a level where attractive margins can be secured. The extent to which metal price risk can be hedged depends on the availability of hedging instruments and sufficient associated market liquidity.

The Recycling segment recycles platinum, palladium, rhodium, gold and silver and a wide range of other base and specialty metals. In this segment the short-term sensitivity of revenues and operating profits to metals prices is material. However, given the variability of the raw-material feed over time and the variable duration of the supply contracts negotiated, it is not suitable to provide a fixed sensitivity to any particular metal. In general terms, higher metals prices tend to be earnings enhancing for the Recycling business. Umicore also has a metal price sensitivity in its other business segments (Catalysis, Energy & Surface Technologies, and Discontinued operations) linked primarily to the revenue components that are metal price related and depending the metals used in these segments. Also in these cases a higher metal price tends to carry short term benefits for the profitability of each business. However, other commercial conditions which are largely independent of the metals price, such as product premiums, are also significant and independent drivers of revenues and profitability.

Structural metal price hedging

For some metals quoted on futures markets Umicore hedges part of its forward metal exposure. This hedging is based on documentation demonstrating a high probability of future metal price based cash flows originating from commercial contracts. Umicore hedged part of its forward metal exposure. At the end of 2016, the outstanding hedge contracts relate to some precious metals (i.e. gold, silver and palladium) and some base metals (i.e. nickel, copper and lead).

3.2.2 TRANSACTIONAL RISK

The Group faces transactional price risks on metals. The majority of its metal-based transactions use global metal market references, like the London Metal Exchange. If the underlying metal price were to be constant, the price Umicore pays for the metal contained in the raw materials purchased would be passed through to the customer as part of the price charged for the product. However, because of the lapse of time between the conversion of purchased raw materials into products and the sale of products, the volatility in the reference metal price creates differences between the price paid for the contained metal and the price received. Accordingly, there is a transactional exposure to any fluctuations in price between the moment raw materials are purchased (i.e., when the metal is "priced in") and the moment the products are sold (i.e. when the metal is "priced out").

The Group's policy is to hedge the transactional risk to the maximum extent possible, primarily through forward contracts.

3.2.3 METAL INVENTORY RISK

The group faces metal price risks on its permanently tied up metal inventories. This risk is related to the market metal price moving below the carrying value of these inventories. Umicore tends not to hedge against this risk.

3.3 INTEREST RATE RISK

The Group's exposure to changes in interest rates relates to the Group's financial debt obligations. At the end of December 2016, the Group's gross financial debt stood at EUR 425 million, of which EUR 20 million at fixed rate. In January 2013, the Group entered in a five year interest rate swap fixing the rate for an amount of EUR 150 million.

3.4 CREDIT RISK

Credit risk and concentration of credit risk

Credit risk is the risk of non-payment by any counterparty in relation to sales of goods or metal lease operations. In order to manage its credit exposure, Umicore has determined a credit policy with credit limit requests, approval procedures, continuous monitoring of the credit exposure and dunning procedure in case of delays.

The credit risk resulting from sales is, to a certain extent, covered by credit insurance, letters of credit or similar secure payment means. Umicore entered into two credit insurance agreements with different insurers. One global credit insurance contract has been put in place on a world-wide basis. This contract protects the group companies against insolvency, political and commercial risks with an individual deductible per invoice of 5% and foreseeing in a global indemnification cap set at EUR 25 million per annum. A second policy covers a more selective group of trade receivables and foresees in an annual deductible of EUR 5 million and a maximum indemnity of EUR 70 million per annum.

Umicore has determined that in a certain number of cases where the cost of credit insurance is disproportionate in relation to the risk to be insured, no such global credit insurance coverage will be sought. For those businesses, characterised by a significant level of customer concentration or by a specific and close relationship with the customers, specific insurance contract may be set up for a certain period.

It should be noted that some sizeable transactions, such as the sales of precious metals by Recycling, have a limited credit risk as payment before delivery is a widely accepted practice.

Regarding its risk exposure to financial institutions like banks and brokers, Umicore is also establishing internal credit lines. Specific limits are set, per financial instrument, covering the various risks to which it is exposed when transacting with such counterparties.

3.5 LIQUIDITY RISK

Liquidity risk is addressed by maintaining a sufficient degree of diversification of funding sources. These include committed and uncommitted short-term bilateral bank facilities, two medium-term syndicated bank facilities and a commercial paper programme (the latter with a maximum amount of EUR 300 million).

3.6 TAX RISK

The tax charge included in the financial statements is the Group's best estimate of its tax liability but, until such time as audits by tax authorities are concluded, there is a degree of uncertainty regarding the final tax liability for the period. The Group's policy is to submit tax returns within the statutory time limits and engage tax authorities to ensure that the Group's tax affairs are as current as possible and that any differences in the interpretation of tax legislation and regulation are resolved as quickly as possible. Given the scale and the international nature of the Group's business, VAT, sales tax and intra-Group transfer pricing are an inherent tax risk as it is for other international businesses. Changes in tax laws or in their application with respect to matters such as transfer pricing, VAT, foreign dividends, R&D tax credits and tax deductions, could increase the Group's effective tax rate and adversely affect its net results.

3.7 CAPITAL RISK MANAGEMENT

The Group's objectives when managing capital are to safeguard its ability to continue as a going concern, to provide returns for shareholders and benefits for other stakeholders, and to maintain an optimal capital structure to reduce the cost of capital.

In order to maintain or adjust the capital structure, the Group may for example adjust the amount of dividends paid to shareholders, return capital to shareholders, buy back its own shares or issue new shares.

The group monitors its capital structure primarily on the basis of the gearing ratio and the net financial debt over recurring EBITDA ratio. The gearing ratio is calculated as net financial debt divided by the sum of net financial debt and total Group equity. Net financial debt is calculated as non-current financial debt plus current financial debt less cash and cash equivalents. The figures for the presented periods are detailed under the note F24 on Financial Debt.

In an ordinary course of business operating environment, the group aims for a capital structure equivalent to investment-grade credit rating status. The group could consider to temporarily exceed the equivalent level of indebtedness in the case of an extraordinary event, such as for example a major acquisition.

3.8 STRATEGIC AND OPERATIONAL RISKS

Umicore faces certain strategic and operational risks that are not necessarily financial in nature but which have the potential to impact the financial performance of the Group. These include technology risk, supply risk and the risk of product substitution by customers. Please refer to the risk section (pages 37 to 44) for a description of these risks and an outline of Umicore's general approach to risk management.

Umicore does not expect a material direct financial impact from the Brexit.

F4 CRITICAL ACCOUNTING ESTIMATES AND JUDGMENTS

Estimates and judgments used in developing and applying the consolidated entity's financial statements are continually evaluated and are based on historical experience and other factors, including the expectations of future events that may have a financial impact on the entity and that are believed to be reasonable under the circumstances. The resulting accounting estimates will, by definition, seldom equal the related actual results.

Assumptions and estimates are applied when:

- Assessing the need for and measurement of impairment losses,
- Accounting for pension obligations,
- Recognising and measuring provisions for tax, environmental, warranty and litigation risks, product returns, and restructuring,
- Determining inventory write-downs,
- Assessing the extent to which deferred tax assets will be realised,
- Useful lives of Property, Plant and Equipment and Intangible assets excluding goodwill

The critical estimates and judgments that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are listed below.

4.1 IMPAIRMENT OF GOODWILL

The recoverable amount of each cash-generating unit is determined as the higher of the asset's fair value less costs to sell and its value in use in accordance with the accounting policy. These calculations, impairment testing, require the use of estimates and assumptions such as discount rates, exchange rates, commodity prices, future capital requirements and future operating performance. Internal estimates of future business performance are based on an analysis of a combination of factors including: market growth projections, market share estimates, competitive landscape, pricing and cost evolution. Such analysis combines both internally-generated estimates and data from external sources. As at 31 December 2016, the carrying amount of the goodwill for the consolidated entity was EUR 132,592 thousand (EUR 131,860 thousand in 2015).

4.2 REHABILITATION OBLIGATIONS

Provision is made for the anticipated costs of future rehabilitation of industrial sites and surrounding areas to the extent that a legal or constructive obligation exists in accordance with accounting policy 2.15. These provisions include future cost estimates associated with reclamation, plant closures, waste site closures, monitoring, demolition, decontamination, water purification and permanent storage of historical residues. These future cost estimates are discounted to their present value. The calculation of these provision estimates requires assumptions such as application of environmental legislation, plant closure dates, available technologies and engineering cost estimates. A change in any of the assumptions used may have a material impact on the carrying value of rehabilitation provisions. As at 31 December 2016, the carrying amount of rehabilitation provisions was EUR 58,854 thousand (EUR 63,738 thousand in 2015).

4.3 DEFINED BENEFIT OBLIGATIONS

An asset or liability in respect of defined benefit plan is recognised on the balance sheet in accordance with accounting policy 2.16. The present value of a defined benefit obligation is dependent upon a number of factors that are determined on an actuarial basis. The consolidated entity determines the appropriate discount rate to be used at the end of each year. The consolidated entity's employee benefit obligations are discussed in more detail in note F27. At 31 December 2016, a liability with respect to employee benefit obligations of EUR 337,907 thousand was recognised (EUR 312,357 thousand in 2015).

4.4 RECOVERY OF DEFERRED TAX ASSETS

Deferred tax assets are recognised for deductible temporary differences, unused tax losses and fair value reserves entries only if it is probable that future taxable profits (based on Group operational plans) are available to use those temporary differences and losses. The actual tax results in future periods may differ from the estimate made at the time the deferred taxes are recognised.

Other assumptions and estimates are disclosed in the respective notes relevant to the item where the assumptions or estimates were used for measurement.

F5 GROUP COMPANIES

Below is a list of the main operating companies included in the consolidated financial statements.

		% INTEREST IN 2015	% INTEREST IN 2016
For continuing operations			
Argentina	Umicore Argentina S.A.	100.00	100.00
Australia	Umicore Marketing Services Australia Pty Ltd.	100.00	100.00
	Umicore Australia Ltd.	100.00	100.00
Austria	Oegussa GmbH	91.29	91.29
Belgium	Todini (BE 0834.075.185)	100.00	100.00
	Umicore Financial Services (BE 0428.179.081)	100.00	100.00
	Umicore Marketing Services Belgium (BE 0402.964.625)	100.00	100.00
	Umicore Abrasives (BE 0881.426.726)	100.00	100.00
	Umicore Specialty Materials Brugge (BE 0405.150.984)	100.00	100.00
	Umicore Long Term Finance (BE 0404.867.211)	100.00	100.00
Brazil	Coimpa Industrial Ltda	100.00	100.00
	Umicore Brasil Ltda	100.00	100.00
	Clarex	100.00	100.00
	Umicore Shokubai Brasil Industrial Ltda	60.00	60.00
Canada	Umicore Canada Inc.	100.00	100.00
	Umicore Autocat Canada Corp.	100.00	100.00
	Umicore Precious Metals Canada Inc.	100.00	100.00
China	Umicore Marketing Services (Shanghai) Co., Ltd.	100.00	100.00
	Umicore Marketing Services (Hong Kong) Ltd.	100.00	100.00
	Umicore Autocat (China) Co., Ltd.	100.00	100.00
	Umicore Technical Materials (Suzhou) Co., Ltd.	100.00	100.00
	Jiangmen Umicore Changxin New Materials Co., Ltd.	70.00	70.00
	Umicore Jubo Thin Film Products (Beijing) Co., Ltd.	100.00	100.00
	Umicore Shokubai (China) Co., Ltd.	60.00	60.00
France	Umicore France S.A.S.	100.00	100.00
	Umicore IR Glass S.A.S.	100.00	100.00
	Umicore Autocat France S.A.S.	100.00	100.00
Germany	Umicore AG & CoKG (*)	100.00	100.00
	Umicore Metalle & Oberflächen GmbH	100.00	100.00
	Allgemeine Gold- und Silberscheideanstalt AG	91.21	91.21
	Umicore Galvanotechnik GmbH	91.21	91.21
	Todini GmbH	100.00	100.00
	Umicore Shokubai Germany GmbH	60.00	60.00
Italy	Italbras S.p.A.	100.00	100.00
	TODINI AND COS.P.A.	100.00	100.00
India	Umicore Autocat India Pvt LTD	100.00	100.00
	Umicore India Private Limited	100.00	100.00
Japan	Umicore Japan KK	100.00	100.00
	Umicore Shokubai Japan Co., Ltd.	60.00	60.00
South Korea	Umicore Korea Ltd.	100.00	100.00
	Umicore Marketing Services Korea Co., Ltd.	100.00	100.00
	Umicore Materials Korea Ltd.	100.00	100.00
Liechtenstein	Umicore Thin Film Products AG	100.00	100.00

		% INTEREST IN 2015	% INTEREST IN 2016
Luxembourg	Umicore International	100.00	100.00
	Umicore Autocat Luxembourg	100.00	100.00
Netherlands	Schöne Edelmetaal BV	91.21	91.21
Philippines	Umicore Specialty Chemicals Subic Inc.	78.20	78.20
Portugal	Umicore Marketing Services Lusitana Metais Lda	100.00	100.00
South Africa	Umicore Marketing Services Africa (Pty) Ltd.	100.00	100.00
	Umicore Catalyst South Africa (Pty) Ltd.	65.00	65.00
Spain	Todini Quimica Ibérica, S.L.	100.00	100.00
Sweden	Umicore Autocat Sweden AB	100.00	100.00
Switzerland	Allgemeine Suisse SA	91.21	91.21
Taiwan	Umicore Thin Fim Products Taiwan Co., Ltd.	100.00	100.00
Thailand	Umicore Precious Metals Thailand Ltd.	91.21	91.21
United Kingdom	Umicore Coating Services Ltd.	100.00	100.00
	Umicore Marketing Services UK Ltd.	100.00	100.00
USA	Umicore USA Inc	100.00	100.00
	Umicore Autocat USA Inc.	100.00	100.00
	Umicore Precious Metals NJ LLC	100.00	100.00
	Umicore Precious Metal Chemistry USA LLC	100.00	100.00
	Umicore Precious Metals USA Inc.	100.00	100.00
	Umicore Optical Materials USA Inc.	100.00	100.00
	Umicore Shokubai USA Inc	60.00	60.00
	Palm Commodities International	100.00	100.00
	Umicore Technical Materials North America Inc.	100.00	100.00
	Umicore Thin Film Products USA Inc.	100.00	100.00
	Umicore Specialty Materials Recycling, LLC.	100.00	100.00
For discontinued operations			
Belgium	VMZINC BENELUX & UK (BE 0631.891.256)	100.00	100.00
France	Umicore Building Products France S.A.S	100.00	100.00
Germany	Umicore Bausysteme GmbH	100.00	100.00
Hungary	Umicore Building Products Hungary kft.	100.00	100.00
Poland	Umicore Building Products Polska	100.00	100.00
Spain	Umicore Building Products Iberica S.L.	100.00	100.00
Switzerland	Umicore Strub SA	100.00	100.00
USA	Umicore Building Products USA Inc.	100.00	100.00

(*) As a result of the integration of Umicore AG & Co. KG into the consolidated accounts of Umicore and the disclosure of the annual accounts according to § 325 HGB (German Commercial Code), Umicore AG & Co. KG is exempted from setting up, auditing and disclosing consolidated financial statements and financial management reports according to Article 264 b of the HGB (German Commercial Code).

F6 FOREIGN CURRENCY MEASUREMENT

For the main currencies applicable within the Group's consolidated entities and investments, the prevailing rates used for translation into the Group's presentation currency (EUR), are as set out below. All subsidiaries, associates and joint-ventures have as functional currency the currency of the country in which they operate, except for Element Six Abrasives (Ireland) where the functional currency is the US dollar.

		CLOSING RATES		AVERAGE RATES	
		2015	2016	2015	2016
American dollar	USD	1.089	1.054	1.110	1.107
UK pound sterling	GBP	0.734	0.856	0.726	0.819
Canadian dollar	CAD	1.512	1.419	1.419	1.466
Swiss franc	CHF	1.084	1.074	1.068	1.090
Japanese yen	JPY	131.070	123.400	134.314	120.197
Brazilian real	BRL	4.251	3.435	3.697	3.863
South African rand	ZAR	16.953	14.457	14.172	16.264
Chinese yuan	CNY	7.061	7.320	6.973	7.352
Thai baht	THB	39.248	37.726	38.028	39.043
Korean won (100)	KRW	12.808	12.694	12.565	12.842

F7 SEGMENT INFORMATION

BUSINESS GROUP INFORMATION 2015

EUR thousand	NOTE	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE & UNALLOCATED	ELIMINATIONS	TOTAL CONTINUED	DISCONTINUED OPERATIONS	TOTAL
Total segment turnover		2,749,322	1,474,419	6,251,959	26,179	(804,193)	9,697,686	744,742	10,442,428
External turnover		2,728,292	1,422,058	5,521,157	26,179	0	9,697,686	744,742	10,442,428
Inter-segment turnover		21,030	52,362	730,802	0	(804,193)	0	0	0
Total segment revenues (excluding metals)		1,093,651	586,877	662,935	0	(6,327)	2,337,136	291,826	2,628,962
External revenues		1,092,848	586,625	657,663	0	0	2,337,136	291,826	2,628,962
Inter-segment revenues		803	252	5,272	0	(6,327)	0	0	0
Operating result	F9	109,226	40,799	132,483	(59,281)	0	223,227	19,272	242,499
Recurring operating result		115,404	73,726	141,503	(44,982)	0	285,651	30,294	315,945
Non-recurring operating result		(5,016)	(32,646)	(11,687)	(14,299)	0	(63,648)	(6,917)	(70,565)
IAS 39 effect		(1,162)	(281)	2,667	0	0	1,224	(4,105)	(2,881)
Equity method companies	F9	6,678	(3,484)	0	6,632	0	9,827	348	10,175
Recurring		8,756	(3,484)	0	8,373	0	13,644	672	14,316
Non-recurring		(1,972)	0	0	(2,030)	0	(4,002)	(325)	(4,326)
IAS 39 effect		(105)	0	0	290	0	185	0	185
EBIT	F9	115,904	37,315	132,483	(52,648)	0	233,054	19,619	252,674
Recurring EBIT		124,160	70,242	141,503	(36,610)	0	299,295	30,966	330,261
Non-recurring EBIT		(6,988)	(32,646)	(11,687)	(16,329)	0	(67,650)	(7,242)	(74,891)
IAS 39 effect on EBIT		(1,268)	(281)	2,667	290	0	1,409	(4,105)	(2,696)
Depreciation and amortisation	F9	48,174	42,327	62,802	12,560	0	165,863	8,608	174,471
Recurring		48,174	42,327	62,802	12,560	0	165,863	8,608	174,471
EBITDA	F9	164,079	79,643	195,285	(40,089)	0	398,918	28,227	427,145
Recurring EBITDA		172,334	112,570	204,305	(24,050)	0	465,159	39,574	504,733
Consolidated total assets		1,490,487	1,111,989	955,271	575,433	(522,703)	3,610,477	419,599	4,030,076
Segment assets		1,425,224	1,085,361	955,271	478,093	(522,703)	3,421,246	396,747	3,817,992
Investments in associates		65,263	26,628	0	97,340	0	189,231	22,852	212,084
Consolidated total liabilities		540,663	456,074	502,436	1,039,443	(522,703)	2,015,913	229,193	2,245,106
Capital Employed at 31/12 of previous year	F31	851,378	618,636	411,708	189,409	0	2,071,131	264,183	2,335,314
Capital Employed at 30/06	F31	949,351	653,928	481,663	161,195	0	2,246,137	183,422	2,429,559
Capital Employed at 31/12	F31	968,200	633,382	465,879	147,715	0	2,215,176	199,325	2,414,501
Average Capital Employed in first half year	F31	900,364	636,282	446,685	175,302	0	2,158,634	223,802	2,382,436
Average Capital Employed in second half year	F31	958,775	643,655	473,771	154,455	0	2,230,656	191,373	2,422,030
Average Capital Employed in the year	F31	929,570	639,969	460,228	164,878	0	2,194,645	207,588	2,402,233
ROCE	F31	13.36%	10.98%	30.75%	(22.20%)	0.00%	13.64%	14.92%	13.75%
Capital expenditure	F34	78,762	42,465	82,984	8,534	0	212,745	27,544	240,289
Total R&D expenditure	F9	91,140	20,246	21,177	8,980	0	141,543	2,956	144,499
R&D recognised in operating expenses	F9	80,781	18,155	21,177	8,980	0	129,094	2,956	132,050
R&D capitalised as intangible assets	F34	10,359	2,091	0	0	0	12,450	0	12,450

BUSINESS GROUP INFORMATION 2016

EUR thousand	NOTE	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE & UNALLOCATED	ELIMINATIONS	TOTAL CONTINUED	DISCONTINUED OPERATIONS	TOTAL
Total segment turnover		2,779,124	1,468,979	6,886,386	31,750	(722,698)	10,443,541	652,638	11,096,179
External turnover		2,770,120	1,414,685	6,226,986	31,750	0	10,443,541	652,638	11,096,179
Inter-segment turnover		9,004	54,294	659,400	0	(722,698)	0	0	0
Total segment revenues (excluding metals)		1,163,395	610,193	641,230	0	(5,450)	2,409,368	258,133	2,667,501
External revenues		1,162,284	609,912	637,172	0	0	2,409,368	258,133	2,667,501
Inter-segment revenues		1,111	281	4,058	0	(5,450)	0	0	0
Operating result	F9	116,453	73,238	115,482	(56,208)	0	248,965	(35,448)	213,517
Recurring operating result		143,321	80,692	124,888	(46,145)	0	302,757	29,675	332,432
Non-recurring operating result		(26,665)	(914)	(10,458)	(9,989)	0	(48,025)	(61,400)	(109,425)
IAS 39 effect		(204)	(6,540)	1,051	(75)	0	(5,766)	(3,723)	(9,490)
Equity method companies	F9	9,098	1,003	0	6,685	0	16,786	1,254	18,040
Recurring		9,153	1,003	0	7,230	0	17,386	929	18,315
Non-recurring		664	0	0	(1,781)	0	(1,117)	325	(792)
IAS 39 effect		(718)	0	0	1,235	0	517	0	517
EBIT	F9	125,551	74,241	115,482	(49,523)	0	265,751	(34,194)	231,557
Recurring EBIT		152,474	81,695	124,888	(38,914)	0	320,143	30,604	350,747
Non-recurring EBIT		(26,001)	(914)	(10,458)	(11,769)	0	(49,142)	(61,075)	(110,217)
IAS 39 effect on EBIT		(922)	(6,540)	1,051	1,161	0	(5,249)	(3,723)	(8,973)
Depreciation and amortisation	F9	50,953	49,937	62,358	12,693	0	175,942	82	176,024
Recurring		50,953	49,937	62,358	12,693	0	175,942	82	176,024
EBITDA	F9	176,504	124,178	177,840	(36,829)	0	441,693	(34,112)	407,581
Recurring EBITDA		203,427	131,632	187,246	(26,221)	0	496,084	30,687	526,771
Consolidated total assets		1,479,625	1,359,785	1,084,014	536,482	(567,640)	3,892,267	253,484	4,145,751
Segment assets		1,405,138	1,332,872	1,084,014	443,365	(567,640)	3,697,749	237,503	3,935,252
Investments in associates		74,487	26,913	0	93,117	0	194,518	15,981	210,499
Consolidated total liabilities		568,805	579,162	592,253	980,225	(567,640)	2,152,805	144,908	2,297,711
Capital Employed at 31/12 of previous year	F31	968,200	633,382	465,879	147,715	0	2,215,176	199,325	2,414,501
Capital Employed at 30/06	F31	895,612	697,913	466,916	173,899	0	2,234,340	157,023	2,391,362
Capital Employed at 31/12	F31	911,191	752,037	498,139	136,968	0	2,298,336	99,074	2,397,409
Average Capital Employed in first half year	F31	931,906	665,648	466,398	160,807	0	2,224,758	178,174	2,402,931
Average Capital Employed in second half year	F31	903,401	724,975	482,527	155,434	0	2,266,338	128,048	2,394,386
Average Capital Employed in the year	F31	917,653	695,311	474,463	158,120	0	2,245,548	153,111	2,398,659
ROCE	F31	16.62%	11.75%	26.32%	(24.61%)	0.00%	14.26%	19.99%	14.62%
Capital expenditure	F34	46,528	144,319	72,271	9,714	0	272,833	14,505	287,338
Total R&D expenditure	F9	101,958	20,183	23,023	7,626	0	152,790	3,070	155,859
R&D recognised in operating expenses	F9	88,584	18,329	23,023	7,626	0	137,561	3,070	140,631
R&D capitalised as intangible assets	F34	13,374	1,854	0	0	0	15,228	0	15,228

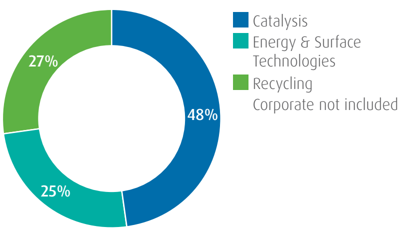
GEOGRAPHICAL INFORMATION 2015

EUR thousand	NOTE	EUROPE	OF WHICH BELGIUM	ASIA-PACIFIC	NORTH AMERICA	SOUTH AMERICA	AFRICA	TOTAL
Total segment turnover		6,299,535	152,925	1,660,849	1,294,596	273,208	169,497	**9,697,685**
Total non-current assets		887,683	407,243	395,881	154,941	33,713	6,736	**1,478,954**
Capital expenditure	F34	142,512	87,562	40,847	21,209	6,793	1,384	**212,745**

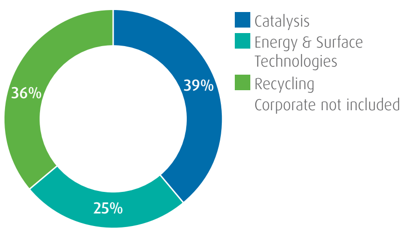
GEOGRAPHICAL INFORMATION 2016

EUR thousand	NOTE	EUROPE	OF WHICH BELGIUM	ASIA-PACIFIC	NORTH AMERICA	SOUTH AMERICA	AFRICA	TOTAL
Total segment turnover		6,758,722	121,963	1,898,223	1,326,192	289,144	171,259	**10,443,541**
Total non-current assets		924,063	473,540	439,236	152,323	41,361	8,801	**1,581,765**
Capital expenditure	F34	179,497	146,974	65,081	18,448	7,467	2,340	**272,834**

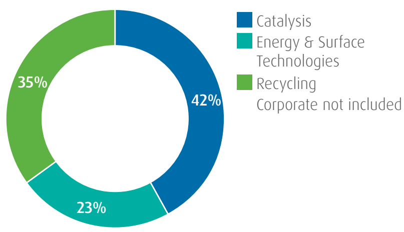
REVENUES (EXCLUDING METAL) PER BUSINESS GROUP



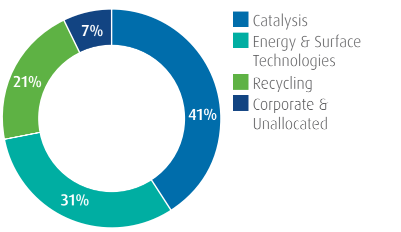
RECURRING EBITDA PER BUSINESS GROUP



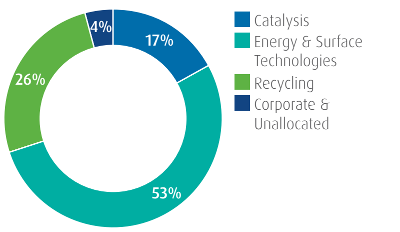
RECURRING EBIT PER BUSINESS GROUP



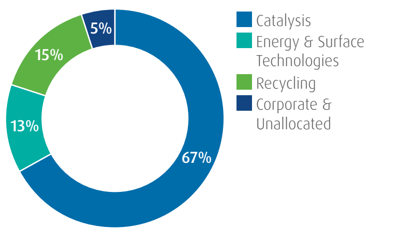
CAPITAL EMPLOYED, AVERAGE PER BUSINESS GROUP



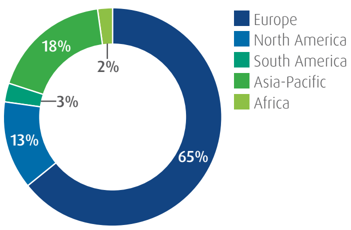
CAPITAL EXPENDITURE PER BUSINESS GROUP



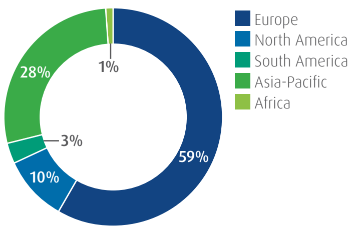
R&D EXPENDITURE PER BUSINESS GROUP



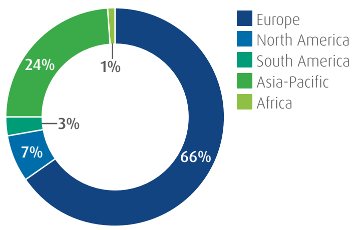
TURNOVER BY REGION



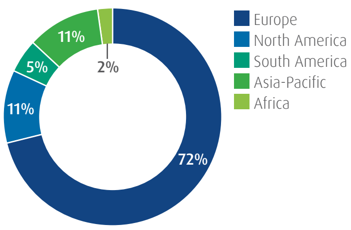
NON CURRENT ASSETS BY REGION



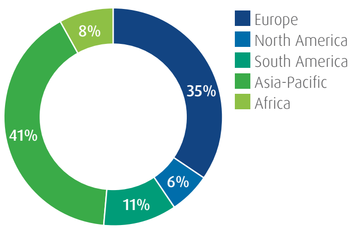
CAPITAL EXPENDITURE BY REGION



EMPLOYEE COMPENSATION & BENEFITS BY REGION



INCOME TAXES BY REGION



Segment information is presented in respect of the Group's business segments as defined below.

The segment results, assets and liabilities include items directly attributable to the segment as well as those elements that can reasonably be allocated to a segment.

The pricing of inter-segment sales is based on an arm's length transfer pricing system. In the absence of relevant market price references, 'cost plus' mechanisms are used. Segment turnover and revenue is taking into account intragroup operations. Those are mainly related to recycling services and sales of refined metal from the recycling segment to the other group segments and are important to assess the performance of the segments concerned.

Since these transactions cannot be considered as external operations, they are eliminated at the group level, to present a net view.

The Group's business segments have no single external customer that amounts to 10% or more of the Group's revenue.

BUSINESS GROUPS

The Group is organised into the following reporting segments:

CATALYSIS

The segment comprises the Automotive Catalysts and Precious Metals Chemistry business units. Their activities centre on the development and production of catalyst formulations and systems that are used to abate emissions from combustion engines, as well as in chemical and life science applications. This segment includes the joint-venture Ordeg.

ENERGY & SURFACE TECHNOLOGIES

The segment comprises the Cobalt & Specialty Materials, Electro-Optic Materials, Electroplating, Rechargeable Battery Materials and Thin Film Products business units. The Energy & Surface Technologies segment is focused amongst other on materials used in the growing markets of rechargeable batteries, in both portable electronics as well as in electrified electric vehicles and solar energy. It also offers material solutions for surface treatment in industries such as construction and electronics. The segment's products are largely based on cobalt, nickel, germanium and indium. This segment includes the associates Ganzhou Yi Hao Umicore Industries and Jiangmen Chancsun Umicore Industry.

RECYCLING

The segment consists of the business units Precious Metals Refining, Jewellery & Industrial Metals, Precious Metals Management, Technical Materials and Platinum Engineered Materials. The Recycling segment recovers a large number of precious and other metals from a wide range of waste streams and industrial residues. The Recycling operations extend also to the production of jewellery materials (including recycling services) as well as the recycling of rechargeable batteries. The segment also offer products for various applications including chemical, electric, electronic, automotive and special glass applications. All its products apply precious metals to enhance specific product capabilities.

CORPORATE

Corporate covers corporate activities, shared operational functions and the Group's Research, Development & Innovation unit. Umicore's share in Element Six Abrasives is also included in Corporate.

The Building Products and Zinc Chemicals business units are reported as discontinued until their effective divestment. Zinc Chemicals has been effectively sold at the end of October 2016. Hence, the discontinued operations for 2016 still include 10 months of contribution from Zinc Chemicals as well as the capital gain realised on the sale.

In the geographical segment information, the figures presented as non-current assets exclude the amounts for long-term investments, non-current loans granted, non-current receivables, deferred tax assets and assets for employee benefits as required by IFRS 8. Performance of the segments is reviewed by the chief operating decision maker based on the recurring EBIT/operating result. As illustrated in the table above, the difference between the recurring operating result and the operating result as presented in the Income Statement consists of the non-recurring operating result and the IAS 39 effect for which definitions are given in the glossary.

Associate companies are allocated to the business group with the closest fit from a market segment perspective.

F8 BUSINESS COMBINATIONS AND ACQUISITIONS OF ASSOCIATES AND JOINT VENTURES

In 2016, there were no new business combinations or acquisitions of associates and joint ventures.

F9 RESULT FROM OPERATING ACTIVITIES

EUR thousand	2015	2016
Sales	9,614,101	10,340,446
Services	83,584	103,095
Turnover (1)	**9,697,685**	**10,443,541**
Other operating income (2)	**58,030**	**59,813**
OPERATING INCOME OF CONTINUING OPERATIONS	**9,755,715**	**10,503,354**
Raw materials and consumables used (3)	**(8,316,333)**	**(9,040,437)**
Payroll and related benefits	**(640,390)**	**(636,071)**
Depreciation of fixed assets	(165,863)	(175,944)
Impairment loss on fixed assets	(15,286)	(21,111)
Inventory and bad debt provisions	(37,693)	4,777
Depreciation and impairment results (4)	**(218,842)**	**(192,278)**
Services and outsourced refining and production costs	(317,547)	(343,433)
Royalties, licence fees, consulting and commissions	(34,401)	(28,321)
Other operating expenses	1,224	2,421
Increase and decrease in provisions	(24,711)	(38,914)
Use of provisions	22,972	29,311
Capital losses on disposal of assets	(1,876)	(728)
Other operating expenses (5)	**(354,339)**	**(379,664)**
OPERATING EXPENSES OF CONTINUING OPERATIONS	**(9,529,903)**	**(10,248,450)**
Operating income of discontinued operations	748,440	661,311
Operating expenses of discontinued operations	(729,200)	(697,994)

(1) Services mainly include the revenues from tolling contracts.
(2) Other operating income for continuing operations mainly include re-invoicing of costs to third parties (EUR 24.4 million), operating grants (EUR 8.6 million), royalties and licence fees (EUR 11.8 million), income linked to emission rights (EUR 2.3 million), insurance recovery (EUR 1.5 million) and income from for asset sales (EUR 1.1 million).
(3) Raw materials and consumables used include water, gas and electricity for EUR 84.3 million in 2016 (EUR 86.8 million in 2015) for continuing operations.
(4) Impairments of fixed assets have been taken and transferred in non-recurring result. Those are mainly related to adjustments to the production configuration in a number of units.
(5) Taxes other than income taxes included in other operating expenses amount to EUR 9.9 million (EUR 13.4 million in 2015) for continuing operations.

R&D EXPENDITURE

EUR thousand	NOTE	2015	2016
R&D recognised in Other operating expenses		129,094	137,561
R&D capitalised as intangible assets	F14	12,450	15,228
Total R&D expenditure for continuing operations		**141,543**	**152,790**
Total R&D expenditure for discontinued operations		2,956	3,070

Total R&D expenditure for continuing operations was EUR 152.8 million in the fully consolidated companies (EUR 155.9 million including the discontinued operations). The part of the R&D expenditures that is directly recognised in the other operating expenses amounts to EUR 137.6 million for the continuing operations (EUR 140.6 million including discontinued operations).

NON-RECURRING ELEMENTS AND IAS 39 EFFECTS INCLUDED IN THE RESULT, INCLUDING DISCONTINUED OPERATIONS

		2015				2016			
EUR thousand	NOTE	TOTAL	RECURRING	NON-RECURRING	IAS 39 EFFECT	TOTAL	RECURRING	NON-RECURRING	IAS 39 EFFECT
Turnover		**10,442,427**	10,437,613	4,814	0	**11,096,179**	11,096,179	0	0
Other operating income		**61,727**	59,414	2,057	256	**68,485**	67,087	2,522	(1,124)
Operating income		**10,504,154**	**10,497,027**	**6,871**	**256**	**11,164,664**	**11,163,265**	**2,522**	**(1,124)**
Raw materials and consumables used		**(8,839,300)**	(8,843,386)	(7,239)	11,324	**(9,492,911)**	(9,475,883)	(108)	(16,920)
Payroll and related benefits		**(741,290)**	(738,162)	(3,128)	0	**(741,105)**	(741,064)	(41)	0
Depreciation and impairment results		**(234,581)**	(188,612)	(40,740)	(5,229)	**(183,181)**	(185,105)	(2,836)	4,759
of which depreciation and amortisation		**(174,471)**	(174,471)	0	0	**(176,024)**	(176,024)	0	0
Other operating expenses		**(443,933)**	(410,883)	(23,817)	(9,233)	**(529,247)**	(428,849)	(104,197)	3,799
Operating expenses		**(10,259,104)**	**(10,181,043)**	**(74,923)**	**(3,137)**	**(10,946,445)**	**(10,830,901)**	**(107,182)**	**(8,362)**
Income from other financial investments		**(2,546)**	(34)	(2,512)	0	**(4,698)**	68	(4,766)	0
Result from operating activities		**242,504**	**315,950**	**(70,565)**	**(2,881)**	**213,521**	**332,433**	**(109,425)**	**(9,487)**
Net contribution from equity method companies		**10,175**	14,316	(4,326)	185	**18,040**	18,315	(792)	517
EBIT		**252,674**	**330,261**	**(74,891)**	**(2,696)**	**231,557**	**350,747**	**(110,217)**	**(8,973)**
EBITDA		**427,145**	**504,733**	**(74,891)**	**(2,696)**	**407,581**	**526,771**	**(110,217)**	**(8,973)**
Finance cost	F11	**(26,455)**	(9,552)	337	(17,242)	**(20,700)**	(31,868)	0	11,169
Income taxes	F13	**(49,062)**	(65,587)	10,335	6,190	**(69,501)**	(75,279)	5,654	123
Net result		**177,161**	**255,127**	**(64,219)**	**(13,749)**	**141,360**	**243,601**	**(104,563)**	**2,323**
of which minority shares		**7,934**	9,128	(1,105)	(89)	**10,636**	10,746	(155)	46
of which group shares		**169,225**	245,999	(63,114)	(13,660)	**130,724**	232,855	(104,408)	2,277

Non-recurring items including discontinued operations had a negative impact of EUR 110 million on EBIT. The main non-recurring expense concerned the EUR 69 million fine imposed by the French Competition Authority on Umicore in relation to its Building Products activities in France. Restructuring charges accounted for EUR 43 million and were primarily related to production footprint adjustment for Automotive Catalysts in Europe and the closure of the Technical Materials' production site in China. A recovery of certain metal prices at the end of the period allowed for a reversal of impairments of permanently tied-up metal inventories for a total amount of EUR 16 million. The impact of non-recurring charges on the net result (Group share) amounted to EUR 104 million.

IAS 39 accounting rules had a negative effect of EUR 9 million on EBIT and a positive impact of EUR 2 million on net result (Group share). The impact concerns timing differences imposed by IFRS that relate primarily to transactional and structural metal and currency hedges. All IAS 39 impacts are non-cash in nature.

F10 PAYROLL AND RELATED BENEFITS

EUR thousand	2015	2016
Wages, salaries and direct social advantages	(475,149)	(476,813)
Other charges for personnel	(24,844)	(25,727)
Temporary staff	(10,568)	(10,059)
Share-based payments	(5,400)	(3,548)
Employee salaries	**(515,961)**	**(516,147)**
Employer's social security	**(96,333)**	**(95,338)**
Defined benefit contributions	(9,404)	(11,204)
Contribution to defined contribution plan	(15,169)	(15,307)
Employer's voluntary contributions (other)	(2,363)	(3,194)
Pensions paid directly to beneficiaries	(3,091)	(3,503)
Provisions for employee benefits (-increase/+ use and reversals)	1,931	8,622
Pensions and other benefits	**(28,096)**	**(24,586)**
PAYROLL AND RELATED BENEFITS OF CONTINUING OPERATIONS	**(640,390)**	**(636,071)**
Payroll and related benefits of discontinued operations	(100,900)	(105,034)

AVERAGE HEADCOUNT IN CONSOLIDATED COMPANIES

	2015	2016
Executives and managerial staff	1,921	1,899
Non managers	8,478	8,276
Total including discontinued operations	**10,399**	**10,175**
of which discontinued operations	1,463	901
Total for continuing operations	8,936	9,274

SHARE-BASED PAYMENTS

EUR thousand	NOTE	2015	2016
Number of stock options granted	F28	608,750	**608,875**
Valuation model		Present Economic Value	
Assumed volatility (% pa)		20.00	25.00
Risk-free interest rate (% pa)		(0.03)	(0.002)
Dividend increase (% pa)		0.10	0.10
Rate of pre-vesting forfeiture (%pa)		NA	NA
Rate of post-vesting leaving (%pa)		10.00	10.00
Minimum gain threshold (% pa)		30.00	30.00
Proportion who exercise given minimum gain achieved (% pa)		100.00	100.00
Fair value per granted instrument determined at the grant date (EUR)		5.38	4.67
Total fair value of options granted		**3,278**	**2,843**
28,900 shares granted at 37.80 EUR		1,092	0
28,000 shares granted at 38.67 EUR (*)		1,278	0
4,500 shares granted at 42.81 EUR		193	0
3,700 shares granted at 34.42 EUR		0	127
29,625 shares granted at 33.27 EUR		0	985
5,184 shares granted at 44.87 EUR		0	233
Total fair value of shares granted		**2,563**	**1,345**
Reversal provision previous year		0	(368)
SHARE-BASED PAYMENTS		**5,841**	**3,821**
Share-based payments to discontinued operations		(441)	(273)
Total Share-based payments continuing operations		**5,400**	**3,548**

(*) Including additional employer costs.

The Group recognised a share-based payment expense of EUR 3,548 thousand during the year for continuing operations.

The part of this expense related to stock options is calculated by an external actuary using the Present Economic Value model which takes into account all features of the stock option plans and the volatility of the underlying stock. This volatility has been determined using the historical volatility of the Group shareholders' return over different averaging periods and different terms. No other market condition has been included on the basis of calculation of fair market value.

The free share part of the expense is valued at the market price of the shares at the grant date. In 2016, shares have been granted to top management resulting in an extra charge of EUR 705 thousand for continuing operations, after correction of the previous year's provisional estimate amount.

The cash discounts that the authorities give back to Umicore Belgium on the social security contributions, relating to incentives regarding a.o. shift premiums, overtime and R&D are disclosed under the item "Employer's social security".

F11 FINANCE COST – NET

EUR thousand	2015	2016
Interest income	3,671	3,581
Interest expenses	(8,489)	(9,937)
Discounting of non-current provisions	(6,376)	(5,964)
Foreign exchange gains and losses	(12,070)	(2,535)
Other financial income	392	1,248
Other financial expenses	(1,713)	(4,062)
Total of continuing operations	**(24,587)**	**(17,668)**
Total of discontinued operations	(1,870)	(3,031)

The net interest charge in 2016 totalled EUR 6,356 thousand. The average weighted net interest rate remained stable at 1.76%.

The discounting of non-current provisions relates mainly to employee benefits provisions and to provisions for other liabilities and charges. This amount is influenced by the present value of these liabilities, which in turn is influenced by changes in the discount rate, by the cash-out profile and by the recognition of new non-current liabilities. Most of the discounting results in 2016 were booked in Belgium and Germany.

Foreign exchange results include realised exchange results and the unrealised translation adjustments on monetary items using the closing rate of the period.

They also include fair value gains and losses on other currency financial instruments (see note F33). Other financial expenses include payment discounts, bank expenses and other financial fees incurred.

F12 INCOME FROM OTHER FINANCIAL INVESTMENTS

EUR thousand	2015	2016
Capital gains and losses on disposal of financial investments	2,975	(4,204)
Dividend income	31	45
Interest income from financial assets	2	10
Impairment results on financial investments	(5,588)	(1,788)
Total for continuing operations	**(2,579)**	**(5,937)**
Total for discontinued operations	33	1,240

The impairment result on financial investments mainly relates to impairments on the Nyrstar shares.

The capital losses realised are linked to the sale of Nysrtar shares and subscription rights.

F13 INCOME TAXES

EUR thousand	2015	2016
INCOME TAX EXPENSE		
RECOGNISED IN THE INCOME STATEMENT		
Current income tax	(67,708)	(71,046)
Deferred income tax	19,972	14,626
Total tax expense for continuing operations	**(47,736)**	**(56,420)**
Total tax expense for discontinued operations	**(1,326)**	**(13,081)**
RELATIONSHIP BETWEEN TAX EXPENSE (INCOME) AND ACCOUNTING PROFIT		
Result from operating activities	223,232	248,966
Financial result	(24,587)	(17,668)
Profit (loss) before income tax of consolidated companies for continuing operations	**198,645**	**231,298**
Weighted average theoretical tax rate (%)	(28.55)	(30.38)
Income tax calculated at the weighted average theoretical tax rate for continuing operations	**(56,705)**	**(70,264)**
Tax effect of:		
Expenses not deductible for tax purposes	(11,080)	(8,941)
Tax-exempted revenues	11,364	1,918
Dividends from consolidates companies & Associates	264	(5,679)
Gains & Losses taxed at a reduced rate	0	20
Tax incentives deductible from the taxable base	22,465	7,943
Tax computed on other basis	(1,457)	(1,076)
Utilisation of previously unrecognised tax losses	7,100	15,812
Write-down (or reverse of previous write down) of DTA	(10,510)	(1,404)
Change in applicable tax rate	5,814	1,776
Tax holidays	562	2,310
Other tax credits (excluding R&D tax credits)	983	278
Non-recoverable foreign withholding taxes	(6,891)	(4,008)
Previous years adjustments	(10,767)	399
Other	1,121	4,496
Tax expense at the effective tax rate for the year	**(47,736)**	**(56,420)**

The weighted average theoretical tax rate evolved from 28.55% in 2015 to 30.38% in 2016, for the continuing operations.

Excluding the impact of non-recurring items and the IAS 39 effect, the recurring effective tax rate for 2016 was 23.28% for the continuing operations (25.05% including the discontinued operations). This has increased compared to the 21.84% in 2015 (21.41% including the discontinued operations) reflecting amongst others the changes in the geographical earnings mix.

F14 INTANGIBLE ASSETS OTHER THAN GOODWILL

EUR thousand	DEVELOPMENT EXPENSES CAPITALISED	CONCESSIONS, PATENTS, LICENCES, ETC.	SOFTWARE	CO_2 EMISSION RIGHTS	OTHER INTANGIBLE ASSETS	TOTAL
At the beginning of previous year						
Gross value	77,937	13,258	133,140	10,736	38,786	**273,857**
Accumulated amortisation	(32,646)	(11,275)	(96,996)	(567)	(6,636)	**(148,121)**
Net book value at the beginning of previous year	**45,290**	**1,983**	**36,144**	**10,168**	**32,150**	**125,737**
discontinued operations in opening balance	0	(721)	(1,014)	0	(307)	**(2,042)**
additions	12,450	0	1,232	48	7,127	**20,856**
disposals	0	156	(10)	(1,718)	(143)	**(1,715)**
amortisation charged (included in "Depreciation and impairments")	(11,930)	(497)	(8,422)	0	(3,922)	**(24,771)**
impairment losses recognised (included in "Depreciation and impairments")	(3,137)	0	(11)	0	0	**(3,147)**
reversal of impairment losses (included in "Depreciation and impairments")	0	0	0	307	0	**307**
emission rights allowances	0	0	0	876	0	**876**
translation differences	1,236	(14)	413	(1)	1,225	**2,860**
other movements	(3,276)	5,887	9,387	0	(11,026)	**972**
At the end of previous year	**40,632**	**6,795**	**37,720**	**9,680**	**25,104**	**119,931**
Gross value	88,705	18,395	129,538	9,702	35,090	**281,429**
Accumulated amortisation	(48,073)	(11,600)	(91,819)	(21)	(9,986)	**(161,499)**
Net book value at the end of previous year	**40,632**	**6,795**	**37,720**	**9,680**	**25,104**	**119,930**
additions	15,228	59,867	1,418	0	4,251	**80,764**
disposals	0	0	(88)	(702)	0	**(790)**
amortisation charged (included in "Depreciation and impairments")	(12,330)	(5,343)	(9,311)	0	(3,596)	**(30,580)**
impairment losses recognised (included in "Depreciation and impairments")	(1,430)	0	(706)	0	0	**(2,136)**
emission rights allowances	0	0	0	(100)	0	**(100)**
translation differences	373	(229)	357	0	149	**650**
other movements	2,149	2,087	5,143	0	(4,369)	**5,010**
At the end of the year	**44,621**	**63,177**	**34,534**	**8,879**	**21,539**	**172,749**
Gross value	106,741	80,073	134,489	8,879	31,505	**361,685**
Accumulated amortisation	(62,120)	(16,896)	(99,955)	0	(9,967)	**(188,938)**
Net book value for continuing operations	**44,621**	**63,177**	**34,534**	**8,879**	**21,538**	**172,748**
Net book value for discontinued operations	0	656	851	0	44	**1,550**

"Additions" are mainly explained by capitalised expenses in new information systems, internally generated developments and the acquisition of three NMC battery material patent families from 3M. EUR 16.5 million are linked to own productions, of which EUR 13.4 million are development expenses.

The line 'other movements' mainly includes the transfer between intangible assets in progress (included under "other intangible assets") and the other categories of intangible assets.

There are no pledges on, or restrictions to, the title on intangible assets, other than disclosed in note F35.

F15 GOODWILL

EUR thousand	31/12/2015	31/12/2016
At the end of the previous year		
Gross value	152,402	144,935
Accumulated impairment losses	(12,066)	(13,075)
Net book value at the end of previous year	**140,336**	**131,860**
discontinued operations in opening balance	(7,062)	0
acquisition through business combinations	(806)	0
impairment losses (included in "Depreciation and impairment results")	(5,042)	0
translation differences	4,435	732
At the end of the year	**131,860**	**132,592**
Gross value	144,935	150,820
Accumulated impairment losses	(13,075)	(18,228)
Net book value for continuing operations	**131,860**	**132,592**
Net book value for discontinued operations	6,836	676

This table includes goodwill related to fully consolidated companies only. Goodwill relating to companies accounted for by the equity method is detailed in note F17.

The change of the period relates only to exchange differences.

The goodwill has been allocated to the primary segments as follows:

EUR thousand	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	TOTAL
31/12/2015	37,155	76,428	18,277	6,836	**138,696**
31/12/2016	37,202	77,050	18,340	676	**133,268**

Management tests annually whether goodwill has suffered any impairment in accordance with the accounting policy stated in note F2. The recoverable amounts of cash-generating units to which goodwill is allocated have been determined based on value-in-use calculations by means of discounted cash flow modelling on the basis of the Group's operational plans which typically look forward five years. On macro economic indicators such as currency and metal prices, the testing uses typically prevailing market conditions. The rates used are typically the ones observed on international exchanges in the last quarter of the year.

The 2016 modelling used average tax rates of 27.5% to 28.5% (in 2015, average tax rates of 25% to 30% was used) and a weighted average cost of capital post-tax of 8.5% (same as in 2015) in line with prevailing expectations on effective tax rate and capital structure. Terminal values were determined on the basis of a perpetual growth rate of on average 2% (same as in 2015). Inflation rates are based on guidance coming from national and international institutes like the NBB or ECB.

F16 PROPERTY, PLANT AND EQUIPMENT

EUR thousand	LAND AND BUILDINGS	PLANT, MACHINERY AND EQUIPMENT	FURNITURE AND VEHICLES	OTHER TANGIBLE ASSETS	CONSTRUCTION IN PROGRESS AND ADVANCE PAYMENTS	TOTAL
At the beginning of previous year						
Gross value	784,638	1,644,985	205,446	27,140	161,150	**2,823,358**
Accumulated depreciation	(421,248)	(1,171,589)	(143,742)	(25,045)	0	**(1,761,624)**
Net book value at the beginning of previous year	**363,390**	**473,396**	**61,703**	**2,095**	**161,150**	**1,061,735**
discontinued operations in opening balance	(34,882)	(48,622)	(4,094)	(712)	(12,312)	**(100,622)**
additions	4,616	26,678	6,702	797	165,701	**204,494**
disposals	(868)	(1,483)	(482)	0	(388)	**(3,221)**
depreciations (included in “Depreciation and impairments”)	(26,695)	(95,641)	(16,854)	(279)	0	**(139,470)**
net impairment losses recognised (included in “Depreciation and impairments”)	(699)	(8,620)	279	0	0	**(9,041)**
translation differences	4,396	3,545	(642)	74	2,427	**9,800**
other movements	36,033	114,938	7,398	47	(159,499)	**(1,083)**
At the end of previous year	**345,290**	**464,192**	**54,009**	**2,021**	**157,079**	**1,022,591**
Gross value	740,014	1,529,768	192,541	16,481	157,079	**2,635,882**
Accumulated depreciation	(394,724)	(1,065,576)	(138,531)	(14,459)	0	**(1,613,291)**
Net book value at the end of previous year	**345,290**	**464,192**	**54,009**	**2,021**	**157,079**	**1,022,591**
additions	16,192	33,766	9,126	361	147,572	**207,017**
disposals	(54)	(1,005)	(424)	(1)	(2,653)	**(4,137)**
depreciations (included in “Depreciation and impairments”)	(29,133)	(98,874)	(16,789)	(203)	0	**(144,999)**
net impairment losses recognised (included in “Depreciation and impairments”)	(5,196)	(11,867)	(1,657)	(4)	0	**(18,724)**
translation differences	3,636	6,279	1,107	(14)	611	**11,618**
other movements	25,598	106,610	9,947	(108)	(145,009)	**(2,962)**
At the end of the financial year	**356,333**	**499,100**	**55,320**	**2,052**	**157,600**	**1,070,404**
of which leasing	3,621	37	7	0	0	**3,665**
Gross value	780,351	1,660,666	202,829	15,727	157,599	**2,817,172**
Accumulated depreciation	(424,018)	(1,161,566)	(147,510)	(13,676)	0	**(1,746,770)**
Net book value for continuing operations	**356,333**	**499,100**	**55,319**	**2,052**	**157,599**	**1,070,403**
Net book value for discontinued operations	**16,835**	**39,277**	**2,266**	**102**	**3,656**	**62,137**
Leasing						
Gross value	4,056	105	34	0	0	**4,195**
Accumulated amortisation	(435)	(69)	(26)	0	0	**(530)**
Net book value for continuing operations	**3,621**	**37**	**7**	**0**	**0**	**3,665**

The non-maintenance related additions to property, plant and equipment primarily relate to Umicore’s growth in clean mobility and recycling. In particular, the Energy & Surface Technologies business group accounted for the larger portion of the growth expenditures including the start of the investment works to triple total capacity for cathode materials by the end of 2018. In Recycling, capital expenditures included the auxiliary investments linked to the capacity expansion in Hoboken. Investments in Catalysis include the construction and commissioning of the new catalyst production plant in Thailand.

The line ‘other movements’ mainly includes the transfer between tangible assets in progress and the other categories.

There are no pledges on, or restrictions to, the title on property, plant and equipment, other than disclosed in note F35.

F17 INVESTMENTS ACCOUNTED FOR USING THE EQUITY METHOD

The investments in companies accounted for using the equity method are composed mainly by the following associates and joint ventures:

	COUNTRY	MEASUREMENT CURRENCY	PERCENTAGE 2015	PERCENTAGE 2016
For continuing operations				
ASSOCIATES				
Ganzhou Yi Hao Umicore Industries	China	CNY	40.00	40.00
Element Six Abrasives	Luxembourg	USD	40.22	40.22
Jiangmen Chancsun Umicore Industry Co.,LTD	China	CNY	40.00	40.00
JOINT VENTURES				
Ordeg	South Korea	KRW	50.00	50.00
For discontinued operations				
ASSOCIATES				
IEQSA	Peru	PEN	40.00	40.00
JOINT VENTURES				
Rezinal	Belgium	EUR	50.00	0.00

At the end of June 2015, Umicore and Solvay announced that they signed an agreement to sell SoviCore to Toray, a leading Japanese specialty chemicals company. Early January 2016, Umicore sold its shares in Belife and Belife Intermediates to their partner Prayon. The deconsolidation has been anticipated in the 2015 closing for both joint ventures.

Umicore's interest in Rezinal and Ieqsa were reported under discontinued operations. The stake in Rezinal was sold in August 2016 to our partner in the joint-venture.

Within this note, only the figures of the continuing operations are shown.

The elements recognised in Other Comprehensive Income for investments accounted for using the equity method are mainly related to employee benefits reserves and translation reserves.

Investments in associates are accounted for in accordance with the equity method and represent approximately 5% of Umicore's consolidated balance sheet total. Umicore has no individual material investments in associates. Considering the objectives of the IFRS 12 disclosure requirements, the most significant associate is Element Six Abrasives, in which Umicore holds 40.22%. Element Six Abrasives is a synthetic diamond super-materials group, part of De Beers Group, its majority shareholder. The group operates worldwide with primary manufacturing facilities in China, Ireland, Germany, the UK, the US and South Africa. Element Six Abrasives is a profitable group, generating positive cash flow and a stable recurring dividend income for Umicore. The group's functional currency is USD. Umicore is represented in the Board of Directors and the audit committee of Element Six Abrasives, which enables to sufficiently protect its interest in this associate. Besides its equity share in this company, Umicore has no other commitments, guarantees or obligations arising from its involvement in this associate. Non-recurring results and material contingencies, if any, in respect of the financial statements of Element Six Abrasives, are separately disclosed under the relevant captions of Umicore's consolidated financial statements.

EUR thousand	NET BOOK VALUE	GOODWILL	TOTAL
At the end of previous year	**147,823**	**41,980**	**189,801**
profit for the year	16,786	0	**16,786**
dividends	(8,723)	0	**(8,723)**
change in other reserves	142	0	**142**
translation differences	(2,501)	(174)	**(2,675)**
At the end of the year for continuing operations	**153,526**	**41,806**	**195,332**
of which joint ventures	73,597	0	**73,597**
At the end of the year for discontinued operations	11,259	4,722	**15,981**

Umicore's share in the aggregated balance sheet and profit and loss items of the associates and joint ventures would have been as follows:

EUR thousand	31/12/2015	31/12/2016
Assets	333,641	305,420
Liabilities	168,948	135,092
Turnover	375,654	328,082
Net result	9,828	16,786

In the above table, EUR 107 million of assets and EUR 34 million of liabilities are related to the joint-ventures.

F18 AVAILABLE-FOR-SALE FINANCIAL ASSETS AND LOANS GRANTED

EUR thousand	AVAILABLE-FOR-SALE FINANCIAL ASSETS	LOANS GRANTED
NON-CURRENT FINANCIAL ASSETS		
At the beginning of previous year	**50,258**	**1,212**
discontinued operations in opening balance	(18)	0
increase	76	77
impairment losses (included in "Income from other financial instruments")	(5,292)	0
translation differences	(31)	93
fair value recognised in equity	(15,776)	0
other movements	19	152
At the end of previous year	**29,236**	**1,534**
increase	8,554	80
decrease	(9,709)	0
impairment losses (included in "Income from other financial instruments")	(1,949)	0
reversals of impairment losses (included in "Income from other financial instruments")	161	0
translation differences	24	(36)
fair value recognised in equity	111	0
other movements	(14)	(377)
At the end of the financial year for continuing operations	**26,414**	**1,201**
CURRENT FINANCIAL ASSETS		
At the end of the preceding financial year	**0**	**2,654**
increase	0	13,000
decrease	0	(750)
translation differences	0	(57)
other	0	(60)
At the end of the financial year for continuing operations	**0**	**14,787**

The movements of the available-for-sale financial assets are linked to the Nyrstar shares and subscription rights.

The movements in the loans granted are related to repayment of loans granted to joint ventures and a new loan granted in the context of the sale of the Zinc Chemicals activities.

F19 INVENTORIES

EUR thousand	31/12/2015	31/12/2016
ANALYSIS OF INVENTORIES		
Base product with metal hedging – gross value	923,193	1,018,679
Base product without metal hedging – gross value	143,983	162,865
Consumables – gross value	55,398	61,291
Write-downs	(71,614)	(66,976)
Advances paid	1,950	5,680
Contracts in progress	760	7,282
Total inventories for continuing operations	**1,053,669**	**1,188,822**
Total of discontinued operations	124,893	92,531

Inventories have increased by EUR 135.2 million compared with December 2015. This increase is mainly due to higher activities and higher metal prices. Impairments of permanently tied-up metal inventories had a positive impact of EUR 5.8 million for continuing operations.

The expense recognised in Raw Materials and Consumables in the income statement amounts to EUR 142.3 million, before the IAS 39 adjustment and for the continuing operations.

Based on metal prices and currency exchange rates prevailing at the closing date, the value of metal inventory would have been EUR 733 million higher than the book value. However, most of these inventories cannot be realised as they are tied up in manufacturing and commercial operations.

There are no pledges on, or restrictions to, the title on inventories.

F20 TRADE AND OTHER RECEIVABLES

EUR thousand	NOTE	31/12/2015	31/12/2016
NON-CURRENT			
Cash guarantees and deposits		7,682	9,532
Other receivables maturing > 1 year		7,089	1,158
Assets employee benefits		423	424
Total for continuing operations		**15,194**	**11,114**
Total of discontinued operations		224	6,188
CURRENT			
Trade receivables (at cost)		701,815	706,656
Trade receivables (write-down)		(8,570)	(9,279)
Other receivables (at cost)		70,833	78,778
Other receivables (write-down)		(5,252)	(6,893)
Interest receivable		(80)	244
Fair value receivable financial instruments held for cash flow hedging	F33	2,801	21,347
Fair value receivable other financial instruments	F33	7,070	15,959
Deferred charges and accrued income		61,187	37,458
Total for continuing operations		**829,805**	**844,271**
Total of discontinued operations		91,546	23,931

Current trade receivables have increased by EUR 14.5 million. The increase is mainly due to higher business volumes through the year.

Under the line "other non-current receivables", the "reimbursement rights" linked to medical plan liabilities that Umicore France took over from Nyrstar France in 2007 and which Nyrstar France will compensate over the lifetime of these liabilities, has been transferred to Umicore Building Product France and is therefore shown under the discontinued figures (see also note F27 on Employee Benefits).

EUR thousand	TOTAL	NOTE DUE	OVERDUE BETWEEN 0-30 DAYS	30-60 DAYS	60-90 DAYS	> 90 DAYS
AGEING BALANCE ANALYSIS AT THE END OF PREVIOUS YEAR						
Trade receivables (w/o doubtful and securitised receivables) – at cost	**685,205**	494,306	114,663	61,363	8,569	6,303
Other receivables – at cost	**66,956**	66,067	(764)	623	32	997
AGEING BALANCE ANALYSIS AT THE END OF YEAR						
Trade receivables (w/o doubtful and securitised receivables) – at cost	**685,937**	554,124	96,564	23,543	4,552	7,152
Other receivables – at cost	**78,778**	77,745	(137)	304	(517)	1,382

CREDIT RISK – TRADE RECEIVABLES

EUR thousand	TRADE RECEIVABLES (WRITE-DOWN)	OTHER RECEIVABLES (WRITE-DOWN)	TOTAL
AT THE BEGINNING OF PREVIOUS YEAR	(7,067)	(6,098)	**(13,165)**
Discontinued operations in opening balance	1,632	462	**2,094**
Impairment losses recognised in P&L	(4,722)	232	**(4,490)**
Reversal of impairment losses	550	139	**688**
Impairment written off against asset carrying amount	115	0	**115**
Other movements	(14)	0	**(14)**
Translation differences	937	13	**949**
At the end of previous year	**(8,570)**	**(5,253)**	**(13,818)**
AT THE BEGINNING OF THE FINANCIAL YEAR	(8,570)	(5,253)	**(13,818)**
Change in scope	(724)	0	**(724)**
Impairment losses recognised in P&L	(152)	(1,633)	**(1,785)**
Reversal of impairment losses	104	1	**105**
Impairment written off against asset carrying amount	928	0	**928**
Other movements	2	0	**2**
Translation differences	(866)	(10)	**(876)**
At the end of the financial year for continuing operations	**(9,279)**	**(6,894)**	**(16,169)**
Total of discontinued operations	(1,207)	(462)	**(1,669)**

In principle, Umicore uses credit insurance as a means to mitigate the credit risk related to trade receivables. Two credit policies have been concluded with two different insurers. At closing, EUR 385 million of the group trade receivables of the continuing operations were covered by a policy where indemnification in case of non-payment amounts to 95% with an annual maximum limit of EUR 25 million. The other policy covered EUR 211 million of trade receivables with a global annual deductible of EUR 5 million and a maximum indemnity per year of EUR 70 million.

Finally, some of our businesses function without credit insurance and instead internal credit limits are set based on available financial information and business knowledge. Theses limits are duly reviewed and approved by management.

F21 DEFERRED TAX ASSETS AND LIABILITIES

EUR thousand	31/12/2015	31/12/2016
Tax assets and liabilities		
Income tax receivables	35,659	32,517
Deferred tax assets	104,057	117,605
Income tax payable	(54,889)	(57,666)
Deferred tax liabilities	(6,235)	(6,924)
Net deferred taxes for discontinued operations	14,232	3,648

EUR thousand	ASSETS 2015	ASSETS 2016	LIABILITIES 2015	LIABILITIES 2016	NET 2015	NET 2016
At the end of preceding financial year	**104,823**	**104,057**	**(17,520)**	**(6,235)**	**87,303**	**97,822**
Discontinued operations in opening balance	(13,344)	0	(164)	0	(13,507)	0
Deferred tax recognised in the P&L	10,564	1,546	9,407	13,080	19,971	14,626
Deferred tax recognised in equity	5,597	(9,116)	2,051	4,585	7,648	(4,531)
Acquisitions through business combination	21	0	(191)	0	(170)	0
Change in scope	0	(162)	0	(75)	0	(237)
Translation adjustments	(3,550)	3,208	182	(152)	(3,368)	3,056
Transfer	(55)	18,143	0	(18,068)	(55)	75
Other movements	0	(130)	0	0	0	(130)
At the end of financial year for continuing operations	**104,057**	**117,546**	**(6,235)**	**(6,865)**	**97,822**	**110,681**
Total of discontinued operations	23,224	**3,812**	(8,992)	**(164)**	14,232	**3,648**
DEFERRED TAX IN RESPECT OF EACH TYPE OF TEMPORARY DIFFERENCE						
Intangible assets	18,881	9,241	(19,151)	(17,618)	(270)	(8,377)
Goodwill on fully consolidated companies	187	0	(408)	(565)	(221)	(565)
Property, plant and equipment	5,015	4,929	(17,773)	(22,110)	(12,758)	(17,181)
Long-term receivables	48	46	(37)	(33)	11	13
Inventories	19,486	29,692	(21,060)	(17,120)	(1,574)	12,572
Trade and other receivables	11,552	5,590	(2,529)	(9,107)	9,023	(3,517)
Group Shareholder's equity	108	290	(93)	(508)	15	(218)
Long-term Financial Debt and other payable	5,616	12,090	(977)	(736)	4,639	11,354
Provisions Employee Benefits	62,431	67,894	(1,748)	(1,444)	60,683	66,450
Provisions for Environment	17,888	17,873	(506)	(531)	17,382	17,342
Provisions for other liabilities and charges	5,543	4,816	(402)	(420)	5,141	4,396
Current Financial Debt	35	2,714	(3)	0	32	2,714
Current Provisions for Environment	2,582	1,878	0	0	2,582	1,878
Current Provisions for Other Liabilities & Charges	4,189	5,798	(13)	(8)	4,176	5,790
Trade and other payables	19,523	15,419	(2,068)	(2,232)	17,455	13,187
Total deferred tax due to temporary differences	**173,084**	**178,270**	**(66,768)**	**(72,433)**	**106,316**	**105,837**
Tax losses to carry forward	84,032	77,156	0	0	84,032	77,156
Investments deductions	2,095	2,152	0	0	2,095	2,152
Notional interest carried forward	11,258	8,549	0	0	11,258	8,549
Other	5,934	5,207	0	0	5,934	5,207
Deferred tax assets not recognised	(111,814)	(88,220)	0	0	(111,814)	(88,220)
Total tax assets/liabilities	**164,590**	**183,114**	**(66,768)**	**(72,433)**	**97,822**	**110,681**
Compensation of assets and liabilities within same entity	(60,533)	(65,509)	60,533	65,509		
Net amount	**104,057**	**117,605**	**(6,235)**	**(6,924)**	**97,822**	**110,681**

EUR thousand	2015 BASE	2016 BASE	2015 TAX	2016 TAX
Amount of deductible temporary differences, unused tax losses or tax credits for which no deferred tax asset is recognised in the balance sheet				
Expiration date with no time limit	350,564	302,275	111,814	88,220

The changes of the period in temporary differences are charged to the income statement except those arising from events that were recognised directly in the other comprehensive income.

The main movements in deferred tax recognised directly in the other comprehensive income are deferred taxes generated by temporary differences included within the lines "Trade and other receivables" (negative by EUR 6,315 thousand), "Trade and other payables" (negative by EUR 6,565 thousand) and "Provisions for employee benefits" (positive by EUR 7,278 thousand).

Deferred tax assets are only recognised to the extent that their utilisation is probable, i.e. if a tax benefit is expected in future periods. The Group assesses a recoverability in a range of 5 to 10 years. The actual tax results in future periods may differ from the estimate made at the time the deferred taxes are recognised.

Unrecognised deferred tax assets of EUR 88,220 thousand mainly arise from tax losses (EUR 70,173 thousand), notional interests carried forward (EUR 8,549 thousand), deductions for investments (EUR 2,151 thousand), and temporary differences on property plant and equipment (EUR 4,472 thousand), inventories (EUR 4,232 thousand) and intangible assets (EUR 2,689 thousand) and trade payables (positive by EUR 4,111 thousand).

In accordance with IAS 12, a deferred tax liability on untaxed reserves of the Belgian companies, amounting potentially to EUR 54 million, has not been recognised as management anticipates that this liability will not be incurred in a foreseeable future.

F22 NET CASH AND CASH EQUIVALENTS

EUR thousand	31/12/2015	31/12/2016
CASH AND CASH EQUIVALENTS		
Short-term investments : bank term deposits	12,280	10,521
Short-term investments : term deposits (other)	0	25
Cash-in-hands and bank current accounts	62,207	73,914
Total cash and cash equivalents	**74,486**	**84,460**
Bank overdrafts	8,318	13,185
Net cash as in Cash Flow Statement for continuing operations	**66,168**	**71,275**
Total of discontinued operations	37,872	45,326

All cash and cash equivalents are fully available for the Group.

Prudent liquidity risk management implies maintaining sufficient cash and marketable securities, the availability of funding through an adequate amount of committed credit facilities and the ability to close out market positions.

Due to the dynamic nature of the underlying businesses, the group maintains flexibility in funding by maintaining availability under committed credit lines. Excess liquidities are invested for very short periods and are spread over a limited number of banks, all enjoying a satisfactory credit rating.

F23 CURRENCY TRANSLATION DIFFERENCES AND OTHER RESERVES

The detail of the Group's share in currency translation differences and other reserves is as follows:

EUR thousand	AVAILABLE-FOR-SALE FINANCIAL ASSETS RESERVES	CASH FLOW HEDGE RESERVES	DEFERRED TAXES DIRECTLY RECOGNISED IN OCI	CHANGES IN POST-EMPLOYMENT BENEFITS, ARISING FROM CHANGES IN ACTUARIAL ASSUMPTIONS	SHARE-BASED PAYMENT RESERVES	CURRENCY TRANSLATION DIFFERENCES	TOTAL
Balance at the beginning of previous year	**15,777**	**(8,783)**	**55,871**	**(194,181)**	**34,077**	**(38,715)**	**(135,954)**
Discontinued operations in opening balance	0	0	0	(3,140)	0	0	**(3,140)**
Remesurements recognised in other comprehensive income	(15,776)	(17,566)	8,597	(10,469)	5,841	0	**(29,372)**
Remeasurements derecognised out of other comprehensive income	0	3,983	(812)	0	0	0	**3,171**
Transfer from/to retained earnings	0	0	0	2,159	(11,228)	0	**(9,069)**
Change in scope	0	0	0	590	0	0	**590**
Other movements	0	0	(100)	(1)	0	0	**(100)**
Exchange differences	0	492	(226)	(3,432)	0	1,523	**(1,642)**
Balance at the end of previous year	**0**	**(21,873)**	**63,330**	**(208,473)**	**28,690**	**(37,191)**	**(175,517)**
Balance at the beginning of the year	**0**	**(21,873)**	**63,330**	**(208,473)**	**28,690**	**(37,191)**	**(175,517)**
Remeasurements recognised in other comprehensive income	111	23,582	(438)	(26,246)	3,820	0	**829**
Remeasurements derecognised out of other comprehensive income	0	12,624	(4,174)	0	0	0	**8,450**
Transfer from/to retained earnings	0	0	0	0	(9,094)	0	**(9,094)**
Change in scope	0	108	(746)	3,777	(166)	1,106	**4,079**
Exchange differences	0	(214)	63	(1,051)	0	28,255	**27,054**
Balance at the end of the year	**111**	**14,227**	**58,036**	**(231,992)**	**23,249**	**(7,830)**	**(144,199)**

Gains and losses recognised in the other comprehensive income (OCI) on available-for-sale financial assets relate to the fair value adjustments of the period on the Nyrstar shares (refer to note F18 on available-for sale financial assets).

The net gains recognised in the OCI regarding cash flow hedges (EUR 23,582 thousand) are the changes in fair value of new cash flow hedging instruments or existing ones at opening but which have not yet expired at year end. The net losses derecognised from OCI (EUR 12,624 thousand) are the fair values of the cash flow hedging instruments existing at the opening which expired during the year. A loss of EUR 8.4 million was recognised in the income statement, as a result of expired cash flow hedges.

New net actuarial losses on the defined post-employment benefit plans have been recognised in OCI for EUR 26,246 thousand.

The 2016 shares and stock option plans have led to a share-based payment reserve increase of EUR 3,820 thousand, including discontinued operations (refer to note F10 on employee benefits). EUR 9,094 thousand, linked to exercised options and free shares plans, have been transferred to retained earnings.

The change in currency translation differences is mainly due to the combined effect of the weakening of the CNY and ARS compared to the EUR currency and the strengthening of the BRL, USD, ZAR compared to the EUR currency. The effect of the evolution of the GBP compared to USD is also included in the sub-consolidation of Element Six Abrasives.

F24 FINANCIAL DEBT

EUR thousand	BANK LOANS	OTHER LOANS	TOTAL
NON-CURRENT			
At the beginning of previous year	**20,000**	**2,572**	**22,571**
Discontinued operations in opening balance	0	(1,120)	(1,120)
Increase	50,000	0	**50,000**
Decrease	(13)	(136)	**(148)**
Transfers	25	(30)	**(4)**
At the end of previous year	**70,013**	**1,286**	**71,298**
Increase	0	3,330	**3,330**
Decrease	(50,013)	(193)	**(50,205)**
Transfers	0	(27)	**(27)**
At the end of the financial year for continuing operations	**20,000**	**4,396**	**24,394**
Total of discontinued operations	0	487	**487**
CURRENT PORTION OF LONG-TERM FINANCIAL DEBTS			
At the end of the preceding financial year	**0**	**139**	**139**
Increase/decrease	0	5	**5**
At the end of the financial year for continuing operations	**0**	**144**	**144**
Total of discontinued operations	0	371	**371**

EUR thousand	SHORT-TERM BANK LOANS	BANK OVERDRAFTS	SHORT-TERM LOAN: COMMERCIAL PAPER	OTHER LOANS	TOTAL
CURRENT					
At the end of the preceding financial year	**104,932**	**8,318**	**225,485**	**(3)**	**338,732**
Increase/decrease (including CTD's)	12,273	4,866	43,122	1,648	**61,911**
At the end of the financial year for continuing operations	**117,205**	**13,185**	**268,607**	**1,646**	**400,643**

The net debt for continuing operations was comparable with 2015 including the EUR 69 million cash out from the fine imposed by the French Competition Authority as well as the cash proceeds from the divestment of Zinc Chemicals.

The bank loans mainly consist of:

- a EUR 20 million bank loan maturing in December 2018. The fair value of the bank loan was EUR 21.1 million on 31 December 2016 based on the DCF-method;
- short-term borrowings of EUR 117.2 million. The maturity dates of these bank loans are very short term and are negotiated at the convenience of the treasury department at market conditions as part of its daily management of treasury operations;
- bank overdrafts of EUR 13.2 million assimilated to utilisation of overnight bank credit facilities.

The current financial debt consisted mostly of EUR 268.6 million of Commercial Paper with terms under one year.

On 31 December 2016, there were no outstanding advances under the EUR 300 million Syndicated Bank Credit Facility maturing in October 2021 and no outstanding advances under the EUR 215 million Syndicated Bank Credit Facility maturing in July 2018.

The aforementioned Syndicated Bank Credit Facilities require the Company to comply with certain financial covenants. Umicore has not faced any breach of those covenants in 2016 or in previous years.

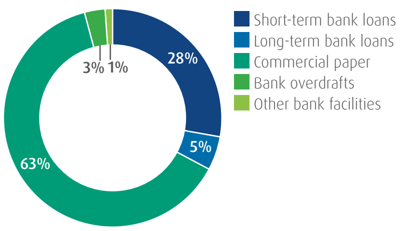
The long-term debts only include debts in Euro.

The net gearing ratio end of 2016 of 13.8% (15.3% in 2015) is well within the group's targeted capital structure limits.

EUR thousand	EUR	TOTAL
Analysis of long-term debts by currencies (including current portion)		
Bank loans	20,000	**20,000**
Other loans	4,536	**4,536**
Non-current financial debts (including current portion)	**24,536**	**24,536**

EUR thousand	2015	2016
Non-current financial debt	71,298	**24,394**
Current portion of non current financial debt	139	**144**
Current financial debt	338,732	**400,643**
Cash and cash equivalents	**(74,486)**	**(84,460)**
Net financial debt	**335,683**	**340,720**
Total of discontinued operations	(14,357)	**(44,468)**
Total net financial debt including discontinued operations	**321,326**	**296,252**

GROSS OUTSTANDING DEBT



EUR million	2015	2016
Net financial debt including discontinued operations	321.3	**296.3**
Equity	1,785.0	**1,848.0**
Total	2,106.3	**2,144.3**
Gearing ratio (%)	15.3	**13.8**

F25 TRADE DEBT AND OTHER PAYABLES

EUR thousand	NOTE	31/12/2015	31/12/2016
NON-CURRENT			
Long-term trade payables		0	25,132
Other long-term debts		9,942	3,988
Investment grants and deferred income from grants		14,712	12,536
Total for continuing operations		**24,654**	**41,656**
Total of discontinued operations		3,045	182
CURRENT			
Trade payables		737,505	843,498
Advances received on contracts in progress		16,707	21,023
Tax payable (other than income tax)		30,657	26,696
Payroll and related charges		101,765	95,780
Other amounts payable		28,171	17,635
Dividends payable		8,183	11,687
Accrued interest payable		306	584
Fair value payable financial instrument held for cash flow hedging	F33	24,565	7,118
Fair value payable other financial instruments	F33	14,909	11,725
Accrued charges and deferred income		132,603	125,625
Total for continuing operations		**1,095,371**	**1,161,371**
Total of discontinued operations		157,648	103,478

Trade payables Increased by EUR 66.0 million, mainly due to higher volumes.

The tax payables (other than income tax) mainly include VAT payables.

F26 LIQUIDITY OF THE FINANCIAL LIABILITIES

PREVIOUS FINANCIAL YEAR

EUR thousand	EARLIEST CONTRACTUAL MATURITY < 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	> 5 YEARS	TOTAL
FINANCIAL DEBT	**88,371**	**84,833**	**165,667**	**71,298**	**0**	**410,169**
Current	**88,371**	**84,833**	**165,667**	**0**	**0**	**338,871**
Short-term bank loans	63,632	34,846	6,454	0	0	**104,932**
Bank overdrafts	8,283	36	0	0	0	**8,318**
Short-term loan: commercial paper	16,445	49,932	159,108	0	0	**225,485**
Other loans	0	(3)	0	0	0	**(3)**
Current portion of other long-term loans	12	23	105	0	0	**139**
Non-current	**0**	**0**	**0**	**71,298**	**0**	**71,298**
Bank loans	0	0	0	70,013	0	**70,013**
Other loans	0	0	0	1,285	0	**1,285**
TRADE AND OTHER PAYABLES	**671,370**	**259,365**	**152,465**	**19,733**	**17,094**	**1,120,027**
Current	**671,370**	**259,365**	**152,465**	**12,172**	**0**	**1,095,372**
Trade payables	505,144	205,656	26,705	0	0	**737,505**
Advances received on contracts in progress	54	3,169	13,484	0	0	**16,707**
Tax payable (other than income tax)	15,939	6,255	8,464	0	0	**30,657**
Payroll and related charges	29,595	21,585	50,585	0	0	**101,765**
Other amounts payable	5,675	6,248	16,248	0	0	**28,171**
Dividends payable	8,183	0	0	0	0	**8,183**
Accrued interest payable, third parties	84	172	50	0	0	**306**
Fair value payable financial instrument held for cash flow hedging	688	2,656	12,371	8,850	0	**24,565**
Fair value payable other financial instruments	4,339	2,335	4,913	3,322	0	**14,909**
Accrued charges and deferred income	101,669	11,289	19,645	0	0	**132,603**
Non-current	**0**	**0**	**0**	**7,561**	**17,094**	**24,654**
Other long-term debts	0	0	0	129	9,813	**9,942**
Investment grants and deferred income from grants	0	0	0	7,432	7,280	**14,712**

FINANCIAL YEAR

EUR thousand	< 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	> 5 YEARS	TOTAL
	EARLIEST CONTRACTUAL MATURITY					
FINANCIAL DEBT	**90,491**	**63,940**	**246,356**	**21,655**	**2,740**	**425,180**
Current	**90,491**	**63,940**	**246,356**	**0**	**0**	**400,786**
Short-term bank loans	69,113	13,977	34,115	0	0	**117,205**
Bank overdrafts	3,282	0	9,903	0	0	**13,185**
Short-term loan: commercial paper	16,445	49,932	202,230	0	0	**268,607**
Other loans	1,639	6	0	0	0	**1,646**
Current portion of other long-term loans	12	24	108	0	0	**144**
Non-current	**0**	**0**	**0**	**21,655**	**2,740**	**24,394**
Bank loans	0	0	0	20,000	0	**20,000**
Other loans	0	0	0	1,655	2,740	**4,394**
TRADE AND OTHER PAYABLES	**727,819**	**319,091**	**110,201**	**9,737**	**36,181**	**1,203,029**
Current	**727,819**	**319,091**	**110,201**	**4,262**	**0**	**1,161,373**
Trade payables	571,534	246,804	25,159	0	0	**843,498**
Advances received on contracts in progress	1,462	7,069	12,491	0	0	**21,023**
Tax payable (other than income tax)	24,163	2,077	456	0	0	**26,696**
Payroll and related charges	21,704	29,675	44,401	0	0	**95,780**
Other amounts payable	9,611	1,829	6,196	0	0	**17,635**
Dividends payable	11,687	0	0	0	0	**11,687**
Accrued interest payable, third parties	(91)	672	3	0	0	**584**
Fair value payable financial instrument held for cash flow hedging	316	651	2,627	3,525	0	**7,118**
Fair value payable other financial instruments	1,529	6,157	3,303	737	0	**11,725**
Accrued charges and deferred income	85,904	24,156	15,565	0	0	**125,625**
Non-current	**0**	**0**	**0**	**5,475**	**36,181**	**41,656**
Long-term trade payables	0	0	0	0	25,132	**25,132**
Other long-term debts	0	0	0	89	3,899	**3,988**
Investment grants and deferred income from grants	0	0	0	5,386	7,151	**12,536**

F27 PROVISIONS FOR EMPLOYEE BENEFITS

The Group has various legal and constructive defined benefit obligations, the vast majority of them being “final pay” plans linked to the Belgian, French and German operations.

EUR thousand	POST-EMPLOYMENT BENEFITS, PENSIONS AND SIMILAR	POST-EMPLOYMENT BENEFITS – OTHER	TERMINATION BENEFITS EARLY RETIREMENT AND SIMILAR	OTHER LONG-TERM EMPLOYEE BENEFITS	TOTAL
At the end of the previous year	**257,978**	**9,798**	**29,932**	**14,649**	**312,357**
Increase (included in “Payroll and related benefits”)	19,460	308	5,993	1,236	**26,997**
Reversal (included in “Payroll and related benefits”)	16	0	0	(36)	**(20)**
Use (included in “Payroll and related benefits”)	(19,513)	(6,360)	(9,165)	(623)	**(35,661)**
Interest and discount rate impacts (included in “Finance cost – Net”)	5,756	32	210	258	**6,257**
Translation differences	90	347	73	10	**519**
Transfers	(1,501)	0	2,084	65	**648**
Recognised in other comprehensive income	26,757	(51)	0	0	**26,706**
Other movements	104	0	0	0	**104**
At the end of the financial year for continuing operations	**289,147**	**4,074**	**29,127**	**15,559**	**337,907**
Total of discontinued operations	7,768	23,451	375	5,303	**36,896**

EUR thousand	31/12/2015	MOVEMENTS 2016	31/12/2016
Belgium	49,661	7,938	57,599
France	8,067	(6,044)	2,023
Germany	239,429	19,737	259,166
Subtotal	**297,157**	**21,631**	**318,788**
Other entities	15,200	3,919	19,119
Total for continuing operations	**312,357**	**25,550**	**337,907**
Discontinued operations	36,624	272	36,896

EUR thousand	
REIMBURSEMENT RIGHTS	
At the end of the previous year	**6,206**
Transferred to discontinued activities	(6,206)
At the end of the financial year	**0**

The first table shows the balances and the movements in provisions for employee benefits of the fully consolidated subsidiaries only. There is a difference in the line “Recognised in equity” compared to what is shown in note F23 as that note also includes associates and joint ventures that are accounted for according to the equity method.

As described in note F20, a non-current receivable that was recognised as “reimbursement rights” linked to medical plan liabilities that Umicore France took over from Nyrstar France in 2007 and which Nyrstar France will compensate over the lifetime of these liabilities, has been taken over by Umicore Building Products France and hence transferred in the discontinued balance sheet.

The following disclosure requirements under IAS 19 amended were derived from the reports obtained from external actuaries.

Umicore defined benefit pension schemes for the 3 major countries are the following:

BELGIUM

Characteristics of the Defined Benefit plans

Umicore companies in Belgium operate defined benefit plans that provide retirement benefits which are related to salary and age or length of service. These retirement plans represent a defined benefit obligation of EUR 210.2 million and assets for EUR 152.6 million. They foresee in a lump sum payment upon retirement and benefits in case of death or disability prior to retirement.

Funding

The plans are externally funded through either insurance companies or a self-administrated institution for occupational retirement provision ("IORP"). For the IORP, the necessary governance processes for risk management are in place. One of the risk measures is to perform on a regular basis a "Continuity Test" in which the consequences of strategic investment policies are analysed in terms of risk- and return-profiles and solvency measures. A statement of investment principles and funding policy are derived from this. The purpose is to have a well-diversified asset allocation to control the risk.

Fair values of plan assets

The fair values of the equity and debt instruments are determined based on quoted market prices in active markets (level 1 fair value classification). The plans hold no direct positions in Umicore shares or bonds, nor do they own any property used by an Umicore entity. Investments are well diversified so that the failure of any single investment would not have a material impact on the overall level of assets.

GERMANY

Characteristics of the Defined Benefit plans

The post-employment benefits are mainly unfunded pension plans of defined benefit type providing retirement, disability and death benefits. All benefit plans are based on final or final average pay beside the deferred compensation plan. The benefits of the deferred compensation plan are based on annual converted salary and provide a guaranteed interest of 3.0% p.a. (6.0% p.a. for salary conversions before 2014). All retirement plans represent a defined benefit obligation of EUR 265.9 million and assets for EUR 6.7 million.

Funding

As mentioned here above, the post-employment benefits are mainly unfunded plans. A minor part is funded by pledged reinsurance contracts.

Fair values of plan assets

All plan assets relate to pledged insurance contracts and have no quoted market price.

FRANCE

Characteristics of the Defined Benefit plans

In France, two main defined benefit plans are in place.

- The retirement plans: in addition to State plans, the company is legally required to pay lump sums to employees when they retire from service. The amounts are based on years of service in the company and on the base salary according to the collective bargaining agreement in force. This scheme covers all employees under permanent contract within the company.
- The Medical plan: The employer pays a contribution for a healthcare plan for retirees. Benefits convert to the spouse when retirees die.

All defined benefit plans represent a defined benefit obligation of EUR 2.2 million and assets for EUR 0.2 million.

Characteristics of the Other Long-Term plan

In France, there is a jubilee plan in place. An amount is paid at 20, 30, 35 and 40 years of seniority. This scheme covers all employees under permanent contract within the company.

Funding

The funding is done via a general EURO fund of a life insurance company. This fund is mainly composed by high quality fix rate bonds (79%), shares (10%) and real estate (3%).

Fair values of plan assets

The fair values of the equity and debt instruments of the funds are determined based on quoted market prices in active markets.

The most significant risks related to the defined benefit plans are:

- **Asset volatility:** The plan liabilities are calculated using a discount rate set with reference to corporate bond yields; if plan assets underperform this yield, this will create a deficit.
- **Changes in bond yields:** A decrease in corporate bond yields will increase plan liabilities, although this will be partially offset by an increase in the value of the plan's bond holdings.
- **Salary risk:** The majority of the plan's benefit obligations are calculated by reference to the future salaries of plan members. As such, any salary increase of plan members higher than expected will lead to higher liabilities.
- **Longevity risk:** All pension plans beside the new deferred compensation plan as from 2014 provide life annuities which involve the risk of longevity, i.e. the risk that the payment period of the pension increases due to the increase in life expectancy. The company uses mortality rates which depend on the year of birth to include this risk in the pension obligation.
- **Risk of cash outflow:** Since death as active and disability benefits are provided there is a risk of cash outflow before retirement.
- **Legislation risks:** If the law which define the benefit changes, it can result in a change of the obligations.

Some additional risks are related to Germany only:

- There is a risk that adjustments of pensions paid by the "Pensionskasse Degussa" are not fully borne by the "Pensionskasse" and therefore can result in an additional unfunded pension obligation due to a guaranteed interest rate of 3.5%. As it is not possible to apply the full IAS 19 calculation method, the fund is evaluated as a Defined Contribution plan. The risk of the additional obligation expected until end of 2022 has been included in the pension obligation.
- The old deferred compensation plan provides a guaranteed interest rate of 6% which increases the risk for a pension cost in addition to the converted salary. The plan has been closed at 31 December 2013 and replaced by a plan with no significant risk in this respect.

And some risk are related to Belgium only:

- Because of the Belgian legislation applicable to 2nd pillar pension plans (so-called "Law Vandenbroucke"), all Belgian Defined Contribution plans have to be considered under IFRS as Defined Benefit plans. Law Vandenbroucke states that in the context of defined contribution plans, the employer must guarantee a minimum return of 3.75% on employee contributions and 3.25% on employer contributions. However, shortly before year-end 2015, a change in the Belgian Law was enacted resulting in a decrease of the guaranteed return from 3.25% to a minimum interest rate defined based upon the Belgian 10-year interest rate but within the range 1.75% – 3.25%. The new rate (currently 1.75%) applies for the years after 2015 on future contributions and also on the accumulated past contributions as at 31 December 2015 if the financing organism does not guarantee a certain result on contributions until retirement age. If the organism does guarantee such a result, the rates 3.25/3.75 still apply.

  Because of this minimum guaranteed return, the employer is exposed to a financial risk: further contributions could be required if the return on assets would not be sufficient to reach the minimum benefits to be paid. The group has plans that are financed through insurance contract as well as one plan financed through an IORP. The related defined benefit obligations have been aggregated with the other obligations for defined benefit plans. The Projected Unit Credit (PUC) methodology has been used.

  Total defined benefit obligations related to those plans amounts to EUR 83.2 million as at the end of December 2016 and related plan assets to EUR 77.1 million.

EUR thousand	2015	2016
CHANGE IN BENEFIT OBLIGATION		
Benefit obligation at beginning of the year	**527,028**	**469,027**
Discontinued operations in opening balance	(78,391)	0
Current service cost	27,350	25,382
Interest cost	10,488	9,950
Plan Participants' Contributions	763	781
Remeasurements - changes in demographic assumptions	147	5,427
Remeasurements - changes in financial assumptions	8,552	23,600
Remeasurements - experience adjustments	5,399	14,861
Benefits paid from plan/company	(35,027)	(21,084)
Expenses paid	(1,322)	(1,582)
Plan combinations	1,461	(6,060)
Exchange rate changes	2,579	851
Benefit obligation at end of the year	**469,027**	**521,153**

EUR thousand	2015	2016
CHANGE IN PLAN ASSETS		
Fair value of plan assets at the beginning of the year	**195,326**	**156,670**
Discontinued operations in opening balance	(40,421)	0
Expected return on plan assets	3,676	2,863
Remeasurements on plan assets	3,320	16,036
Employer contributions	27,766	28,982
Member contributions	763	781
Benefits paid from plan/company	(35,027)	(21,084)
Expenses paid	(1,355)	(1,615)
Net transfer in/(out) (including the effect of any business combinations/divestitures)	184	241
Exchange rate changes	2,438	372
Fair value of plan assets at the end of the year	**156,670**	**183,246**

Pension plans mainly in Belgium, Liechtenstein and Japan are wholly or partly funded with assets covering a substantial part of the obligations. All other plans have no material funding or are unfunded.

EUR thousand	2015	2016
AMOUNT RECOGNISED IN THE BALANCE SHEET		
Defined benefit obligations	469,027	521,153
Fair value of plan assets	156,670	183,246
Funded Status	**312,357**	**337,907**
Effect of asset ceiling/onerous liability	0	0
Net liability (asset)	**312,357**	**337,907**
COMPONENTS OF PENSION COSTS		
Amounts recognised in profit and loss statement		
Current service cost	27,350	25,382
Interest cost	10,488	9,950
Interest income on plan assets	(3,676)	(2,863)
Expected return on reimbursement rights	(137)	0
Remeasurement of Other Long-Term Benefits	114	1,319
Administrative expenses and taxes	33	33
Total pension cost recognised in P&L account	**34,172**	**33,821**
Total of discontinued operations	4,759	2,662
Amounts recognised in other comprehensive income		
Cumulative remeasurements at opening	**175,406**	**169,220**
Discontinued operations in opening balance	(15,127)	0
Remeasurements of the year	10,644	26,706
Minorities	120	(319)
Other movements	(2,159)	0
Exchange differences	335	82
Total recognised in the OCI at subsidiaries	**169,220**	**195,689**
Remeasurements at associates and joint ventures	29,725	30,551
Total recognised in the OCI	**198,945**	**226,241**
Total of discontinued operations	13,148	10,395
Remeasurements (recognised in other comprehensive income)		
Effect of changes in demographic assumptions	137	5,364
Effect of changes in financial assumptions	8,335	23,337
Effect of experience adjustments	5,632	13,782
(Return) on plan assets (excluding interest income)	(3,440)	(15,950)
(Return) on reimbursement rights (excluding interest income)	108	0
Total remeasurements included in Other Comprehensive Income	**10,772**	**26,533**
Total of discontinued operations	(1,896)	1,527

The interest cost and return on plan assets as well as the discount rate impact on the non-post employment benefit plans, are recognised under the finance cost in the income statement (see note F11). All other elements of the expense of the year are classified under the operating result in the "wages, salaries and direct social advantages".

Remeasurements of the year recognised in OCI originate mainly from a change in discount rates on the pension plans and differences between the expected and actual return on plan assets.

	2015	2016
PRINCIPAL ACTUARIAL ASSUMPTIONS		
Weighted average assumptions to determine benefit obligations at year end		
Discount rate (%)	2.12	1.73
Rate of compensation increase (%)	2.94	2.76
Rate of price inflation (%)	2.00	1.78
Rate of pension increase (%)	1.61	1.48
Weighted average assumptions used to determine net cost		
Discount rate (%)	2.33	2.12
Rate of compensation increase (%)	2.90	2.94
Rate of price inflation (%)	1.98	2.00
Rate of pension increase (%)	1.47	1.61

	2016	
EUR thousand	FAIR VALUE OF ALL PLAN ASSETS	FAIR VALUE OF PLAN ASSETS WITH QUOTED MARKET PRICE
Plan assets		
Cash and cash equivalents	12,142	12,136
Equity instruments	32,821	32,810
Debt instruments	63,313	63,190
Real estate	12,000	11,994
Assets held by insurance company	60,116	53,377
Other	2,856	2,202
Total plan assets	**183,248**	**175,709**

Assumptions are recommended by the local actuaries in line with the IAS 19 revised. The standard reference for the Eurozone is iBOXX AA Index yield and similar indexes are used for the other regions. Mortality tables used are country specific.

Other plan assets are predominantly invested in insurance contracts and bank term deposits. The expected long-term rate of return on assets assumptions is documented for the individual plans as recommended by the local actuaries.

	2016	
EUR thousand	VALUATION TREND +0.25%	VALUATION TREND -0.25%
Sensitivity to trend rate assumptions on discount rate		
Present value of defined benefit obligation	502,871	540,194
Weighted average duration of benefit obligation (in years)	14.25	14.43
Sensitivity to trend rate assumptions on inflation rate		
Present value of defined benefit obligation	521,883	498,461
Sensitivity to trend rate assumptions on salary increase rate		
Present value of defined benefit obligation	513,400	500,458

EUR thousand	2015	2016
BALANCE SHEET RECONCILIATION		
Balance sheet liability (asset) as of previous year	**331,702**	**312,357**
Discontinued operations in opening balance	(37,970)	0
Pension expense recognised in P&L in the financial year	34,172	33,821
Amounts recognised in SoCI	10,772	26,533
Employer contributions via funds in the financial year	(15,515)	(17,075)
Employer contributions paid directly in the financial year	(12,251)	(11,907)
Credit to reimbursements	29	0
Net transfer in/(out) (including the effect of any business combinations/divestitures)	1,277	0
Amounts recognised due to plan combinations	0	(6,301)
Exchange rate adjustment – (gain)/loss	141	479
Balance sheet liability (asset) as of end of the year	**312,357**	**337,907**

AT 31 DECEMBER

EUR thousand	2012	2013	2014	2015	2016
Present value of defined benefit obligation	399,193	440,757	527,028	469,027	521,153
Fair value of plan assets	139,573	172,954	195,326	156,670	183,246
Deficit (surplus) in the plan	**259,620**	**267,803**	**331,702**	**312,357**	**337,907**
Experience adjustments on plan assets	(5,834)	(31,125)	(10,444)	(3,320)	(16,036)
Experience adjustments on plan liabilities	5,515	5,274	(4,543)	5,399	14,861

EUR thousand	2016
EXPECTED CASH FLOWS FOR FOLLOWING YEAR	
Expected employer contributions	31,252
Expected total benefit payments	
Year 1	21,902
Year 2	17,655
Year 3	16,639
Year 4	22,471
Year 5	27,868
Next 5 years	123,117

F28 STOCK OPTION PLANS GRANTED BY THE COMPANY

PLAN	EXPIRY DATE	EXERCISE	EXERCISE PRICE EUR (THE EXERCISE PRICE MAY BE HIGHER IN CERTAIN COUNTRIES)	NUMBER OF OPTIONS STILL TO BE EXERCISED
ISOP 2007	16/02/2017	all working days of Euronext Brussels	26.55	16,000
			27.36	2,500
				18,500
ISOP 2008	14/04/2018	all working days of Euronext Brussels	32.57	50,500
			32.71	13,500
				64,000
ISOP 2010	14/02/2017	all working days of Euronext Brussels	22.30	27,000
				27,000
ISOP 2011	13/02/2018	all working days of Euronext Brussels	38.07	210,125
			39.25	27,500
			38.54	11,000
				248,625
ISOP 2012	12/02/2019	all working days of Euronext Brussels	35.32	195,750
			37.67	25,750
			36.00	13,000
				234,500
ISOP 2013	12/02/2020	all working days of Euronext Brussels	36.38	356,125
			38.69	32,625
				388,750
ISOP 2014	10/02/2021	all working days of Euronext Brussels	32.29	558,875
			31.60	38,000
			32.98	27,000
				623,875
ISOP 2015	09/02/2022	all working days of Euronext Brussels	34.58	555,500
			37.80	27,000
			39.01	26,250
				608,750
ISOP 2016	04/02/2023	all working days of Euronext Brussels	33.27	608,875
				608,875
Total				**2,822,875**

ISOP refers to “Incentive Stock Option Plan” (worldwide plan for managers).

The stock options, which are typically vested at the time of the grant, are foreseen to be settled with treasury shares. Options which have not been exercised before the expiry date elapse automatically.

	2015 NUMBER OF SHARE OPTIONS	2015 WEIGHTED AVERAGE EXERCISE PRICE	2016 NUMBER OF SHARE OPTIONS	2016 WEIGHTED AVERAGE EXERCISE PRICE
DETAILS OF THE SHARE OPTIONS OUTSTANDING DURING THE YEAR				
Outstanding at the beginning of the year	**3,679,463**	**31.91**	**3,408,875**	**33.67**
Granted during the year	608,750	34.91	608,875	33.27
Exercised during the year	873,338	27.12	1,188,875	32.00
Expired during the year	6,000	0.00	6,000	0.00
Outstanding at the end of the year	**3,408,875**	**33.67**	**2,822,875**	**34.32**
Exercisable at the end of the year	3,408,875	33.67	2,822,875	34.32

The options outstanding at the end of the year have a weighted average contractual life until January 2021.

The details concerning the calculation of the fair value of the options granted are detailed under note F10 on Payroll and related Benefits.

F29 ENVIRONMENTAL PROVISIONS

EUR thousand	PROVISIONS FOR SOIL CLEAN-UP & SITE REHABILITATION	OTHER ENVIRONMENTAL PROVISIONS	TOTAL
At the end of previous year	**63,738**	**2,952**	**66,690**
Increase	1,263	2,802	**4,065**
Reversal	(239)	(217)	**(456)**
Use (included in "Other operating expenses")	(6,692)	(3,349)	**(10,041)**
Discounting (included in "Finance cost – Net")	(294)	0	**(294)**
Translation differences	1,218	0	**1,218**
Other movements	(140)	140	**0**
At the end of the financial year for continuing operations	**58,854**	**2,328**	**61,182**
Of which – Non-current	54,585	557	**55,142**
– Current	4,269	1,772	**6,041**

Provisions for environmental legal and constructive obligations are recognised and measured by reference to an estimate of the probability of future cash outflows as well as to historical data based on the facts and circumstances known at the end of the reporting period. The actual liability may differ from the amounts recognised.

Provisions decreased overall by EUR 5,508 thousand, with additional provisions being more than compensated by uses and reversals of existing provisions reflecting overall the steady execution of identified and committed rehabilitation programmes.

The increase in provisions for soil and groundwater remediation is mainly related to new provisions taken in Belgium, the USA and France. Most of the uses of provisions for the period are linked to the realisation during the period of site remediation programmes in Brazil (Guarulhos and in surroundings), in France (Viviez), in the USA (Maxton, Platoro and Arab) and in Belgium.

No major movements occurred in 2016 on the provisions that were taken to address the historical radioactive waste material in Belgium (Olen). Further negotiation with all competent authorities to find a sustainable and acceptable storage solution are ongoing, however, at a slow pace.

The movements of the other environmental provisions are mainly related to the need for and adjustment of CO_2 emission rights in Belgium.

Management expects the most significant cash outflows on these projects for non-current elements to take place within five years.

F30 PROVISIONS FOR OTHER LIABILITIES AND CHARGES

EUR thousand	PROVISIONS FOR REORGANISATION & RESTRUCTURING	PROVISIONS FOR OTHER LIABILITIES AND CHARGES	TOTAL
At the end of the previous year	**12,568**	**32,979**	**45,543**
Discontinued operations in opening balance	0	23	**23**
Increase	29,293	14,344	**43,637**
Reversal	(1,951)	(7,508)	**(9,458)**
Use (included in "Other operating expenses")	(8,097)	(10,647)	**(18,745)**
Discounting (included in "Finance cost – Net")	0	366	**366**
Translation differences	82	1,093	**1,175**
Transfers	(1,027)	(600)	**(1,627)**
At the end of the financial year for continuing operations	**30,868**	**30,049**	**60,913**
Of which – Non-current	11,784	13,484	**25,268**
– Current	19,084	16,565	**35,649**
Total of discontinued operations	173	4,100	**4,273**

Provisions for reorganisation and restructuring and for tax, warranty and litigation risks, onerous contracts and product returns are recognised and measured by reference to an estimate of the probability of future outflow of cash as well as to historical data based on the facts and circumstances known at the end of the reporting period. The actual liability may differ from the amounts recognised.

Provisions increased overall by EUR 15,370 thousand.

Additional provisions for reorganisation and restructuring have been taken mainly in Germany, China and Japan. The new provisions for restructuring were primarily related to the announced closure of an Automotive Catalysts' production site in Germany and the closure of the Technical Materials' production site in China.

The use of provisions for restructuring were taken mainly in Germany, South Africa, China and Japan while some reversal of prior years' booked provisions took place in Germany and Japan.

The increases and the use of provisions for other liabilities and charges are mainly related to litigations in Germany and Belgium.

The reversal of the period for other liabilities and charges mainly includes the net reversal of the IAS 39 related provisions for onerous contracts for EUR 5,232 thousand, leaving a closing balance of EUR 6,415 thousand for the continuing operations.

No assessment is possible regarding the expected timing of cash outflows related to the non-current part of the provisions for other liabilities and charges.

F31 CAPITAL EMPLOYED

EUR thousand	NOTE	31/12/2015	30/06/2016	31/12/2016
Intangible assets	F14, F15	251,791	249,820	305,340
Property, plant and equipment	F16	1,022,591	1,032,382	1,070,403
Investments accounted for under the equity method	F17	189,802	188,351	195,332
Available-for-sale financial assets	F18	29,236	27,945	26,414
Inventories	F19	1,053,669	1,029,131	1,188,822
Non-current receivable (excluding assets employee benefits)	F20	14,771	15,676	10,690
Adjusted current accounts receivable		823,684	815,377	821,361
Income tax receivable		35,659	30,511	32,517
Assets included in capital employed		**3,421,202**	**3,389,194**	**3,650,879**
Non-current trade and other payables	F25	24,654	26,951	41,656
Adjusted current accounts payable		1,070,803	1,019,237	1,154,261
Translation reserves	F23	(37,191)	(31,403)	(7,830)
Non-current provisions	F29, F30	75,699	72,777	80,410
Current provisions	F29, F30	36,538	34,206	41,690
Income tax payable		54,889	48,438	57,666
Liabilities included in capital employed		**1,225,392**	**1,170,206**	**1,367,853**
Capital employed		**2,195,810**	**2,218,988**	**2,283,026**
IAS 39 and eliminations		19,365	15,353	15,309
Capital employed discontinued		199,325	157,023	99,074
Capital employed as published		**2,414,501**	**2,391,364**	**2,397,409**
Average Capital Employed in half year preceding closing date		2,422,030		2,394,387
Average Capital Employed in year preceding closing date		**2,402,233**		**2,398,660**
Recurring EBIT in year preceding closing date	F9	330,261		350,747
ROCE in year preceding closing date		**13.75%**		**14.62%**

Current account receivable and payable included in "Capital Employed" do no take into account margin calls and gains and losses booked on the mark-to-market value of strategic hedging instruments.

Average capital employed for the half years is calculated as the average of the capital employed at the end of the period and at the end of the preceding period. Average capital employed for the year is calculated as the average of the capital employed of both half years.

F32 FINANCIAL INSTRUMENTS BY CATEGORY

AS AT THE END OF PREVIOUS YEAR

EUR thousand	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	AVAILABLE-FOR-SALE
ASSETS						
Available-for-sale financial assets		**29,236**	**0**	**0**	**0**	**29,236**
Available-for-sale financial assets – Shares	1	29,236	0	0	0	29,236
Loans granted		**4,188**	**0**	**0**	**4,188**	**0**
Loans to associates and non consolidated affiliates		4,188	0	0	4,188	0
Trade and other receivables		**844,999**	**7,070**	**2,801**	**835,128**	**0**
Non-current						
Cash guarantees and deposits		7,682	0	0	7,682	0
Other receivables maturing in more than 1 year		7,089	0	0	7,089	0
Assets employee benefits		423	0	0	423	0
Current						
Trade receivables (at cost)		701,815	0	0	701,815	0
Trade receivables (write-down)		(8,570)	0	0	(8,570)	0
Other receivables (at cost)		70,833	0	0	70,833	0
Other receivables (write-down)		(5,252)	0	0	(5,252)	0
Interest receivable	2	(80)	0	0	(80)	0
Fair value of financial instruments held for cash flow hedging	2	2,801	0	2,801	0	0
Fair value receivable other financial instruments		7,070	7,070	0	0	0
Deferred charges and accrued income		61,187	0	0	61,187	0
Cash and cash equivalents		**74,487**	**0**	**0**	**74,487**	**0**
Short-term investments: bank term deposits		12,280	0	0	12,280	0
Cash-in-hand and bank current accounts		62,207	0	0	62,207	0
TOTAL OF FINANCIAL INSTRUMENTS (ASSETS)		**952,910**	**7,070**	**2,801**	**913,803**	**29,236**
LIABILITIES						
Financial debt		**411,570**	**0**	**0**	**410,170**	**0**
Non-current						
Bank loans		71,413	0	0	70,013	0
Other loans		1,286	0	0	1,286	0
Current						
Short-term bank loans		104,932	0	0	104,932	0
Bank overdrafts		8,318	0	0	8,318	0
Short-term loan: commercial paper		225,485	0	0	225,485	0
Other loans		136	0	0	136	0
Trade and other payables		**1,120,025**	**14,909**	**24,565**	**1,080,551**	**0**
Non-current						
Other long-term debts		9,942	0	0	9,942	0
Investments grants and deferred income from grants		14,712	0	0	14,712	0
Current						
Trade payables		737,505	0	0	737,505	0
Advances received on contracts in progress		16,707	0	0	16,707	0
Tax – other than income tax – payable		30,657	0	0	30,657	0

EUR thousand	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	AVAILABLE-FOR-SALE
Payroll and related charges		101,765	0	0	101,765	0
Other amounts payable		28,171	0	0	28,171	0
Dividends payable		8,183	0	0	8,183	0
Accrued interest payable		306	0	0	306	0
Fair value financial instrument held for cash flow hedging	2	24,565	0	24,565	0	0
Fair value payable other financial instruments	2	14,909	14,909	0	0	0
Accrued charges and deferred income		132,603	0	0	132,603	0
TOTAL OF FINANCIAL INSTRUMENTS (LIABILITIES)		**1,531,595**	**14,909**	**24,565**	**1,490,721**	**0**

AS AT THE END OF THE FINANCIAL YEAR

EUR thousand	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	AVAILABLE-FOR-SALE
ASSETS						
Available-for-sale financial assets		**26,414**	**0**	**0**	**0**	**26,414**
Available-for-sale financial assets – Shares	1	26,414	0	0	0	26,414
Loans granted		**15,988**	**0**	**0**	**15,988**	**0**
Loans to associates and non consolidated affiliates		15,988	0	0	15,988	0
Trade and other receivables		**855,385**	**15,959**	**21,347**	**818,079**	**0**
Non-current						
Cash guarantees and deposits		9,532	0	0	9,532	0
Other receivables maturing in more than 1 year		1,158	0	0	1,158	0
Assets employee benefits		424	0	0	424	0
Current						
Trade receivables (at cost)		706,656	0	0	706,656	0
Trade receivables (write-down)		(9,279)	0	0	(9,279)	0
Other receivables (at cost)		78,778	0	0	78,778	0
Other receivables (write-down)		(6,893)	0	0	(6,893)	0
Interest receivable	2	244	0	0	244	0
Fair value of financial instruments held for cash flow hedging	2	21,347	0	21,347	0	0
Fair value receivable other financial instruments		15,959	15,959	0	0	0
Deferred charges and accrued income		37,458	0	0	37,458	0
Cash and cash equivalents		**84,460**	**0**	**0**	**84,460**	**0**
Short-term investments: bank term deposits		10,521	0	0	10,521	0
Short-term investments: term deposits (other)		25	0	0	25	0
Cash-in-hand and bank current accounts		73,914	0	0	73,914	0
TOTAL OF FINANCIAL INSTRUMENTS (ASSETS)		**982,247**	**15,959**	**21,347**	**918,527**	**26,414**
LIABILITIES						
Financial debt		**426,282**	**0**	**0**	**425,182**	**0**
Non-current						
Bank loans		21,100	0	0	20,000	0
Other loans		4,396	0	0	4,396	0

AS AT THE END OF THE FINANCIAL YEAR

EUR thousand	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	AVAILABLE-FOR-SALE
Current						
Short-term bank loans		117,205	0	0	117,205	0
Bank overdrafts		13,185	0	0	13,185	0
Short-term loan: commercial paper		268,607	0	0	268,607	0
Other loans		1,790	0	0	1,790	0
Trade and other payables		**1,203,027**	**11,725**	**7,118**	**1,184,184**	**0**
Non-current						
Long-term trade payables		25,132	0	0	25,132	0
Other long-term debts		3,988	0	0	3,988	0
Investments grants and deferred income from grants		12,536	0	0	12,536	0
Current						
Trade payables		843,498	0	0	843,498	0
Advances received on contracts in progress		21,023	0	0	21,023	0
Tax – other than income tax – payable		26,696	0	0	26,696	0
Payroll and related charges		95,780	0	0	95,780	0
Other amounts payable		17,635	0	0	17,635	0
Dividends payable		11,687	0	0	11,687	0
Accrued interest payable		584	0	0	584	0
Fair value financial instrument held for cash flow hedging	2	7,118	0	7,118	0	0
Fair value payable other financial instruments	2	11,725	11,725	0	0	0
Accrued charges and deferred income		125,625	0	0	125,625	0
TOTAL OF FINANCIAL INSTRUMENTS (LIABILITIES)		**1,629,309**	**11,725**	**7,118**	**1,609,366**	**0**

Loans and debt have been issued at market rates which would not create any major differences with effective interest expenses. All categories of financial instruments of Umicore are at fair value except the non-current bank and other loans for which the carrying amounts differ from the fair value (see note F24).

The fair value of financial instruments traded in active markets is based on quoted market prices at the end of the reporting period.

The fair value of financial instruments that are not traded in an active market is determined using valuation techniques, mainly discounted cash flow, using market assumptions prevailing at the end of the reporting period.

In particular, the fair value of interest rate swaps is calculated as the present value of the estimated future cash flows. The fair value of forward foreign exchange, metal and energy contracts is determined using quoted forward exchange, metal and energy rates at the end of the reporting period.

The fair value of quoted financial assets held by the Group is their quoted market price at the end of the reporting period. The fair value of financial liabilities is estimated by discounting the future contractual cash flows at the current market interest rate that is available to the Group for similar financial instruments.

The carrying value less impairment provision of trade receivables and payables are assumed to approximate their fair values.

32.1 FAIR VALUE HIERARCHY

The Group adopted the amendment to IFRS 7 for financial instruments which are measured in the balance sheet at fair value, with effect from January 2009. This amendment requires disclosures of fair value measurements by level, based on the following fair value measurement hierarchy:

- Level 1: fair value based on quoted prices in active markets for identical assets or liabilities.
- Level 2: fair value based on inputs other than quoted prices that are observable for the asset or liability, either directly or indirectly.
- Level 3: fair value for the asset or liability valuation are based on unobservable inputs.

In the Group, the fair values on available-for-sale financial assets are measured as level 1. All the metal, energy and foreign currency derivatives are measured as level 2.

32.2 SENSITIVITY ANALYSIS ON FINANCIAL INSTRUMENTS

Umicore is sensitive to commodity prices, foreign currency and interest rate risk on its financial instruments.

32.2.1 COMMODITY PRICES

The fair value on financial instruments related to cash flow hedging sales would have been EUR 7.4 million lower/higher if the metal prices would strengthen/weaken by 10%.

The fair value on financial instruments related to cash flow hedging purchases would have been EUR 6.1 million higher/lower if the energy prices would strengthen/weaken by 10%.

The fair value on other commodity sales financial instruments would have been EUR 17.0 million lower/higher and the fair value on other commodity purchases financial instruments would have been EUR 14.5 million higher/lower if the metal prices would strengthen/weaken by 10%.

32.2.2 FOREIGN CURRENCY

The fair value of forward currency contracts related to cash flow hedging would have been EUR 11.4 million higher if the Euro would strengthen against USD by 10% and would have been EUR 14.0 million lower if the Euro would weaken against USD by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been EUR 3.1 million lower if the Euro would strengthen against ZAR by 10% and would have been EUR 3.9 million higher if the Euro would weaken against ZAR by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been EUR 13.0 million lower if the USD would strengthen against KRW by 10% and would have been EUR 13,4 million higher if the USD would weaken against KRW by 10%.

The fair value of other forward currency contracts sold would have been EUR 35.8 million higher if the Euro would strengthen against USD by 10% and would have EUR 43.7 million lower if the Euro would weaken against USD by 10%.

The fair value of other forward currency contracts bought would have been EUR 12.8 million lower if the Euro would strengthen against USD by 10% and would have been EUR 15.6 million higher if the Euro would weaken against USD by 10%.

The fair value of net position of current assets and liabilities exposed to USD would have been EUR 27.0 million lower if the Euro would strengthen against USD by 10% and would have been EUR 33.0 million higher if the Euro would weaken against USD by 10%.

F33 FAIR VALUE OF FINANCIAL INSTRUMENTS

Umicore hedges its structural and transactional commodity (metal and energy), currency and interest rate risks using respectively commodity derivatives (mainly quoted on the London Metal Exchange), currency derivatives and Interest Rate Swaps with reputable brokers and banks.

33.1 FINANCIAL INSTRUMENTS RELATED TO CASH FLOW HEDGING

	NOTIONAL OR CONTRACTUAL AMOUNT		FAIR VALUE	
EUR thousand	31/12/2015	31/12/2016	31/12/2015	31/12/2016
Forward commodities sales	9,276	78,820	2,089	4,558
Forward commodities purchases	(36,618)	(52,408)	(9,599)	9,051
Forward currency contracts sales	234,689	352,559	(11,090)	3,169
Forward IRS contracts	0	0	(3,164)	(2,550)
Total fair value impact subsidiaries			**(21,764)**	**14,228**
Recognised under trade and other receivables			2,801	21,347
Recognised under trade and other payables			(24,565)	(7,119)
Total			**(21,764)**	**14,228**

The principles and documentation on the hedged risks as well as the timing related to the Group's cash flow hedging operations are included in note F3 Financial risk management.

The fair values of the effective hedging instruments are in the first instance recognised in the fair value reserves recorded in equity and are derecognised when the underlying forecasted or committed transactions occur (see note F23).

The forward commodities sales contracts are set up to hedge primarily the following commodities: gold, silver, palladium, nickel, lead and copper. The forward commodity purchase contracts are set up to hedge primarily the electricity, gas and fuel oil price risks.

The forward currency contracts are set up to hedge USD towards EUR, KRW, BRL, CAD and ZAR and EUR towards ZAR.

The terms and conditions of the forward contracts are common market conditions.

In those circumstances whereby the hedge accounting documentation as defined under IAS 39 is not available, financial instruments used to hedge structural risks for metals and currencies are measured as if they were held for trading. However, such instruments are being used to hedge future probable cash flows and are not speculative in nature.

Umicore has not faced any ineffectiveness on cash flow hedging in P&L in 2015 and 2016.

33.2 OTHER FINANCIAL INSTRUMENTS

	NOTIONAL OR CONTRACTUAL AMOUNT		FAIR VALUE	
EUR thousand	31/12/2015	31/12/2016	31/12/2015	31/12/2016
Forward commodities sales	108,512	174,163	4,567	4,451
Forward commodities purchases	(147,819)	(147,073)	(6,903)	(1,414)
Forward currency contracts sales	549,275	697,010	(6,477)	(5,109)
Forward currency contracts purchases	(222,836)	(274,284)	973	6,304
Total fair value impact subsidiaries			**(7,840)**	**4,233**
Recognised under trade and other receivables			7,070	15,959
Recognised under trade and other payables			(14,909)	(11,725)
Total			**(7,840)**	**4,233**

The principles and documentation related to the Group's transactional hedging are included in note F3 "Financial risk management". In the absence of hedge accounting documentation as defined under IAS 39, financial instruments used to hedge transactional risks for metals and currencies are measured as if they were held for trading. However, such instruments are being used to cover existing transactions and firm commitments and are not speculative in nature.

The fair values are immediately recognised in the income statement under Other operating income for the commodity instruments and the Net Finance cost for the currency instruments.

AS AT THE END OF PREVIOUS YEAR

	EARLIEST CONTRACTUAL MATURITY (UNDISCOUNTED)				
EUR thousand	< 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	TOTAL
FINANCIAL INSTRUMENTS ASSETS (FAIR VALUE)					
Commodity risk					
Total forward sales (CFH)	0	534	1,555	0	**2,089**
Total forward sales (other)	3,408	2,148	105	0	**5,662**
Total forward purchases (other)	354	0	0	0	**354**
FX Risk					
Forward currency contracts sales (CFH)	10	45	394	263	**712**
Forward currency contracts sales (other)	4	6	0	0	**10**
Forward currency contracts purchases (other)	(153)	350	766	80	**1,044**
FINANCIAL INSTRUMENTS LIABILITIES (FAIR VALUE)					
Interest Rate Risk					
Interest rate swaps	0	0	0	(3,164)	**(3,164)**
Commodity risk					
Total forward purchases (CFH)	0	(1,288)	(5,866)	(2,445)	**(9,599)**
Total forward sales (other)	(62)	(324)	(709)	0	**(1,095)**
Total forward purchases (other)	(2,721)	(1,146)	(1,570)	(1,824)	**(7,261)**
FX Risk					
Forward currency contracts sales (CFH)	(688)	(1,368)	(6,505)	(3,241)	**(11,802)**
Forward currency contracts sales (other)	(1,490)	(864)	(2,635)	(1,498)	**(6,487)**
Forward currency contracts purchases (other)	(67)	0	0	0	**(67)**

AS AT THE END OF THE FINANCIAL YEAR

EUR thousand	EARLIEST CONTRACTUAL MATURITY (UNDISCOUNTED) < 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	TOTAL
FINANCIAL INSTRUMENTS ASSETS (FAIR VALUE)					
Commodity risk					
Total forward sales (CFH)	39	751	2,215	1,553	**4,558**
Total forward purchases (CFH)	272	544	2,450	5,785	**9,051**
Total forward sales (other)	664	4,592	1,198	0	**6,454**
Total forward purchases (other)	946	(150)	617	155	**1,567**
FX Risk					
Forward currency contracts sales (CFH)	321	887	3,992	2,537	**7,737**
Forward currency contracts sales (other)	1,304	69	115	0	**1,488**
Forward currency contracts purchases (other)	1,361	2,031	3,042	15	**6,449**
FINANCIAL INSTRUMENTS LIABILITIES (FAIR VALUE)					
Interest Rate Risk					
Interest rate swaps	0	0	0	(2,550)	**(2,550)**
Commodity risk					
Total forward sales (other)	(1,244)	(775)	17	0	**(2,002)**
Total forward purchases (other)	(770)	(1,835)	(270)	(106)	**(2,981)**
FX Risk					
Forward currency contracts sales (CFH)	(316)	(651)	(2,627)	(974)	**(4,569)**
Forward currency contracts sales (other)	631	(3,546)	(3,051)	(630)	**(6,597)**
Forward currency contracts purchases (other)	(146)	1	0	0	**(145)**

F34 NOTES TO THE CASH FLOW STATEMENT

34.1 DEFINITIONS

The cash flow statement identifies operating, investing and financing activities for the period. Umicore uses the indirect method for the operating cash flows. The net profit and loss is adjusted for:

- the effects of non-cash transactions such as provisions, impairment losses, mark to market, etc., and the variance in operating capital requirements.
- items of income or expense associated with investing or financing cash flows.

EUR thousand	2015	2016
Adjustments for non-cash transactions		
Depreciations	165,863	175,944
Adjustment IAS 39	16,018	(5,403)
(Reversal) Impairment charges	20,873	22,899
Mark-to-market of inventories and commitments	(532)	(20,435)
Exchange difference on long-term loans	(1,300)	1,297
Inventories and bad debt provisions	33,389	(880)
Depreciation on government grants	(756)	(726)
Share-based payments	5,400	3,548
Change in provisions	(4,322)	12,669
Total	**234,635**	**188,912**
ADJUSTMENTS FOR ITEMS TO DISCLOSE SEPARATELY OR UNDER INVESTING AND FINANCING CASH FLOWS		
Tax charge of the period	47,736	56,420
Interest (income) charges	4,818	6,356
(Gain) loss on disposal of fixed assets	(1,817)	3,999
Dividend income	(31)	(45)
Total	**50,707**	**66,731**
CHANGE IN WORKING CAPITAL REQUIREMENT ANALYSIS		
Inventories	129,277	(135,153)
Trade and other receivables	(1,852)	(7,244)
Trade and other payables	(59,136)	85,783
As in the consolidated balance sheet	**68,289**	**(56,614)**
Discontinued operations in opening balance	(144,276)	0
Non-cash items (*)	(55,344)	59,724
Items disclosed elsewhere (**)	21,181	(7,228)
Currency translation differences	(2,960)	17,370
As in the consolidated cash flow statement	**(113,111)**	**13,253**

(*) Non cash items are mainly linked to mark to market of inventories and commitments, strategic and transactional hedging and inventories, impairments in inventories and bad debt provisions.
(**) Item disclosed elsewhere are mainly due to changes in interest, dividend and tax receivable and payable and government grants.

EUR thousand	NET CASH AND CASH EQUIVALENT	LOANS (W/O BANK OVERDRAFTS)	NET FINANCIAL DEBT
At the end of previous year	**66,167**	**401,851**	**335,684**
Cash flow of the period	72,596	10,145	(62,451)
Impact of final financing carved out entities	(67,488)	0	67,488
At the end of the financial year	**71,275**	**411,996**	**340,721**
Net debt, including the discontinued	116,601	412,853	296,252

The impact of financing of carve out entities in 2016 is mainly related to the EUR 69 million cash out from the fine imposed by the French Competition Authority, which has been financed by the continuing operations while the expense is shown in discontinued as related to Building Products.

34.2 NET CASH FLOW GENERATED BY OPERATING ACTIVITIES

Operating cash flow after tax from continuing operations is EUR 384.7 million. Working capital requirements for continuing operations decreased by EUR 13.3 million, in line with volumes and metal prices.

34.3 NET CASH FLOW USED IN INVESTING ACTIVITIES

Net cash used in investing activities for continuing operations decreased by EUR 13.3 million in 2016. Capital expenditure for continuing operations reached EUR 273 million if capitalised R&D costs are excluded as per Umicore's definition of capital expenditures (refer to Glossary). The vast majority of capital expenditures relates to Umicore's growth investments in clean mobility and recycling. In particular, the Energy & Surface Technologies business group accounted for the larger portion of the growth expenditures, including the start of the investment works to triple total capacity for cathode materials by the end of 2018 as well as the acquisition of three NMC battery material patent families from 3M. In Recycling, capital expenditures included the auxiliary investments linked to the capacity expansion in Hoboken. Investments in Catalysis include the construction and commissioning of the new catalyst production plant in Thailand.

The acquisitions include EUR 80.8 million of intangibles coming mainly from the capitalisation of costs linked to new information systems and development expenses and to the acquisition of the three NMC patent families from 3M (see note F14).

Investing cash flow was also influenced this year by the divestment of Zinc Chemicals.

Under the line internal transfers of the net cashflow generated by investing activities, a negative impact is shown in the cash flow statement of continued operations offset by a positive impact in the cash flow statement of the discontinued operations (see note 42). This reflects the fact that the financing granted by Umicore to the business unit Zinc Chemicals was no longer due after the divestment was completed. The financing was reimbursed by the acquirer as part of the consideration paid to Umicore. The divestment proceeds of Zinc Chemicals are included in the cash flow statement under the heading "disposal of subsidiaries and associates". Next to the above EUR 69.9 million financing reimbursement, it includes a purchase price of EUR 68.7 million of which EUR 2.4 million is expected to be paid in 2017 and 2018 (note 42) as foreseen in the sales agreement.

34.4 NET CASH FLOW USED IN FINANCING ACTIVITIES

The cash used in financing activities is mainly the consequence of the net increase of indebtedness (EUR 6.5 million), the use of own shares to cover the exercise of options (EUR 38.0 million), and the payment of dividends (EUR 143.0 million) and of interest (EUR 6.4 million).

EUR thousand	2015	2016
Acquisition of tangible assets	204,494	207,297
Acquisition of intangible assets	20,856	80,764
Acquisitions of assets	**225,350**	**288,061**
Capitalised R&D	12,450	15,228
Capital expenditure for continuing operations	**212,900**	**272,833**
Acquisitions of assets for discontinued operations	27,395	14,505
Capital expenditure, including discontinued	**240,295**	**287,338**

F35 RIGHTS AND COMMITMENTS

EUR thousand	2015	2016
Guarantees constituted by third parties on behalf of the Group	25,093	61,099
Guarantees constituted by the Group on behalf of third parties	3,872	4,178
Guarantees received	85,395	84,728
Goods and titles held by third parties in their own names but at the Group's risk	210,255	366,623
Commitments to acquire and sell fixed assets	3,791	4,815
Commercial commitments for commodities purchased (to be received)	271,750	425,066
Commercial commitments for commodities sold (to be delivered)	485,085	749,699
Goods and titles of third parties held by the Group	1,383,289	1,794,320
Miscellaneous rights and commitments	3,075	2,532
Total	**2,471,605**	**3,493,060**

35.1 GUARANTEES CONSTITUTED BY THIRD PARTIES ON BEHALF OF THE GROUP

are secured and unsecured guarantees given by third parties to the creditors of the group guaranteeing that the Group's debts and commitments, actual and potential, will be satisfactorily discharged.

35.2 GUARANTEES CONSTITUTED BY THE GROUP ON BEHALF OF THIRD PARTIES

are guarantees or irrevocable undertakings given by the Group in favour of third parties guaranteeing the satisfactory discharge of debts or of existing or potential commitments by the third party to its creditors.

There are no loan commitments given to third parties.

35.3 GUARANTEES RECEIVED

are pledges and guarantees received guaranteeing the satisfactory discharge of debts and existing and potential commitments of third parties towards the Group, with the exception of guarantees and security in cash.

The guarantees received are mainly related to supplier guarantees backed by bank institutions. Those guarantees are set up to cover the good execution of work by the supplier. Some guarantees received are related to customer guarantees, received mainly from a customer's mother company on behalf of one of its subsidiaries. A minor part of the received guarantees is related to rent guarantees.

All guarantees are taken at normal market conditions and their fair value is equivalent to the carrying amount. No re-pledge has been done on any of those guarantees.

35.4 GOODS AND TITLES HELD BY THIRD PARTIES IN THEIR OWN NAMES BUT AT THE GROUP'S RISK

represent goods and titles included in the Group balance sheet for which the Group bears the risk and takes the profit, but where these goods and titles are not present on the premises of the Group. It concerns mainly inventories leased out to third parties or held under consignment or under tolling agreement by third parties.

35.5 COMMERCIAL COMMITMENTS

are firm commitments to deliver or receive metals to customers or from suppliers at fixed prices.

35.6 GOODS AND TITLES OF THIRD PARTIES HELD BY THE GROUP

are goods and titles held by the group, but which are not owned by the Group. It concerns mainly third party inventories leased in or held under consignment or tolling agreements with third parties.

The lines concerning the commitments for commodities purchased and sold have been updated in 2013 including now the full scope of entities.

The Group leases metals (particularly gold and silver) from and to banks and other third parties for specified, mostly short term, periods and for which the group pays or receives fees. As at 31 December 2016, there was a net lease-in position of EUR 675 million vs. EUR 475 million at end of 2015. This increase is mainly caused by higher volumes and higher metal prices.

F36 CONTINGENCIES

The Group has certain pending files that can be qualified as contingent liabilities or contingent assets, according to the definition of IFRS.

36.1 FRENCH COMPETITION AUTHORITY

This case is now detailed under the note F42 on Discontinued Operations as it concerns Building Products.

36.2 ITC CONTINGENT LIABILITY

On 20 February 2015, BASF Corp. and the University of Chicago Argonne National filed two lawsuits against Umicore. One action was filed at the United States International Trade Commission (ITC). The other was filed in federal district court in Wilmington, Delaware, and was stayed. The ITC action relates to an alleged infringement of two US patents related to materials used in battery cathodes. The ITC found Umicore to be indirectly infringing the patents and issued a limited exclusion order on the products at issue on 16 December 2016. This limited exclusion order is subject to appeal to the United States Court of Appeals for the Federal Circuit.

36.3 OTHERS

In addition to the above, the Group is the subject of a number of claims and legal proceedings incidental to the normal conduct of its business. Management does not believe that such claims and proceedings are likely to have a material adverse effect on the financial condition of Umicore.

F37 RELATED PARTIES

EUR thousand	2015	2016
TRANSACTIONS WITH JOINT VENTURES AND ASSOCIATES		
Operating income	157,468	108,523
Operating expenses	(124,027)	(91,187)
Financial income	323	81
Financial expenses	(5)	(1)
Dividends received	**(16,862)**	**(8,723)**

EUR thousand	2015	2016
OUTSTANDING BALANCES WITH JOINT VENTURES AND ASSOCIATES		
Current trade and other receivables	33,032	25,480
Current trade and other payables	44,263	35,152
Loan asset short term	**2,450**	**2,450**

The transactions with associates and joint ventures are mainly commercial transactions, sales and purchases of goods and services.

There are no transaction with entities held by key management personnel.

EUR thousand	2015	2016
BOARD OF DIRECTORS		
Salaries and other compensation	607,234	685,606
Fixed portion	199,999	227,322
Variable portion (based on attended meetings)	208,500	218,000
Value of the share grant	192,668	232,606
Benefit in kind company car chairman	3,175	2,971
Umicore contribution to the Swiss social security	2,892	4,404

No variable or other compensation element (apart from attendance-related fees) is associated with directorship. No loan or guarantees have been granted by the company to members of the Board.

EUR thousand	2015	2016
EXECUTIVE COMMITTEE		
Salaries and other benefits	7,792,233	7,557,111
Short-term employee benefits	3,784,972	3,352,140
Post-employment benefits	1,220,993	1,299,414
Other long-term benefits	724,500	968,760
Share-based payments	2,061,768	1,936,797

The data above shows the accounting view of the Board and Executive Committee remuneration and differs somewhat from the information provided in the Remuneration Report in the Corporate Governance section.

In the tables above, the employer social security contributions, if applicable, are included in the short-term employee benefits. These do not feature in the Remuneration Report.

With regards to share-based incentives the share grant figures included in share-based payments above represent the value of the shares granted in 2016 for services rendered in 2015. The Remuneration report shows the value of the shares granted in 2017 for services rendered in the reporting year, i.e. 2016.

The figures related to the undeferred part of the variable cash remuneration linked to the individual performance for the reference year 2016, included in short-term employee benefits, represent the level of accruals at the end of reporting period. The Remuneration Report features the actual amounts paid.

Accruals booked for the deferred parts of the variable cash remuneration for the reference year 2016 are included in the other long-term benefits. The amounts to be paid in 2018 and 2019 will depend on long-term performance measures and the exact amounts paid will be included in the Remuneration Reports for the years in question

F38 EVENTS AFTER THE REPORTING PERIOD

Following the Board of Directors meeting of 9 February 2017, Umicore announced that a gross dividend of EUR 1.30 per share would be proposed to the Annual Shareholders Meeting (of which EUR 0.60 per share were already paid out as interim dividend in September 2016), corresponding to a total dividend payment of EUR 142,048 thousand.

F39 EARNINGS PER SHARE

EUR	2015	2016
Excluding discontinued operations		
EPS – basic	1.41	1.66
EPS – diluted	1.41	1.65
Including discontinued operations		
EPS – basic	1.56	1.20
EPS – diluted	1.55	1.19
Recurring EPS	**2.27**	**2.14**

The following earnings figures have been used as the numerator in the calculation of basic and diluted earnings per share:

NUMERATOR ELEMENTS

EUR thousand	NOTE	2015	2016
Net consolidated profit, Group share	F9		
Without discontinued operations		153,205	181,203
With discontinued operations		169,225	130,724
Recurring net consolidated profit, Group share	F9	**245,999**	**232,855**

The following numbers of shares have been used as the denominator in the calculation of basic and diluted earnings per share:

DENOMINATOR ELEMENTS

	2015	2016
Total shares issued as at 31 December	**112,000,000**	**112,000,000**
of which treasury shares	3,927,534	2,673,150
of which shares outstanding	108,072,466	109,326,850
Weighted average number of outstanding shares	**108,445,128**	**108,887,828**
Potential dilution due to stock option plans	482,117	797,332
Adjusted weighted average number of outstanding shares	108,927,245	109,685,160

Total outstanding shares are after deduction of treasury shares, which are held to cover existing stock option plans or are available for resale. The denominator for the calculation of diluted earnings per share takes into account an adjustment for stock options.

During 2016, no new shares were created as a result of the exercise of stock options with linked subscriptions rights. During the year, Umicore used 1,188,875 of its treasury shares in the context of the exercise of stock options and 65,509 for shares granted. In the course of 2016. Umicore did not buy back any own shares. On 31 December 2016, Umicore owned 2,673,150 of its own shares representing 2.39% of the total number of shares issued as at that date.

F40 IFRS DEVELOPMENTS

The following **new standards and amendments** to standards have been issued, but are **not mandatory** for the first time for the financial year beginning 1 January 2016 and have **been endorsed by the European Union**:

- **IFRS 9** 'Financial instruments', effective for annual periods beginning on or after 1 January 2018. The standard addresses the classification, measurement, derecognition of financial assets and financial liabilities and general hedge accounting.

  IFRS 9 introduces the fact that physical commitments can be considered as derivatives (if they are readily convertible to cash) and the possibility that metal components may be treated as hedged items (if they are separately identifiable and reliably measurable). Application of such principles would significantly enhance the economic view of Umicore's IFRS operating results. A feasibility and documentation project was launched in 2016 to demonstrate the eligibility said criteria and will be continued in 2017.

- **IFRS 15** 'Revenue from contracts with customers'. The standard will improve comparability of the top line in financial statements globally. Companies using IFRS will be required to apply the revenue standard for annual periods beginning on or after 1 January 2018.

  In 2016, a review was initiated comparing the current triggers for revenue recognition applied by Umicore to the IFRS 15 principles. This review will continue into 2017 but based on the intermediate findings no material inconsistencies between Umicore's current revenue recognition model and IFRS 15 are expected.

The following **new standards, amendments and interpretation** to standards have been issued, but are not mandatory for the first time for the financial year beginning 1 January 2016 and have **not been endorsed by the European Union**:

- **IFRS 16** 'Leases'. This standard replaces the current guidance in IAS 17 and is a far reaching change in accounting by lessees in particular. Under IAS 17, lessees were required to make a distinction between a finance lease (on balance sheet) and an operating lease (off-balance sheet). IFRS 16 requires lessees to recognise a lease liability reflecting future lease payments and a 'right-of-use asset' for virtually all lease contracts. For lessors, the accounting stays almost the same. However, as the IASB has updated the guidance on the definition of a lease (as well as the guidance on the combination and separation of contracts), lessors will also be affected by the new standard. Under IFRS 16, a contract is, or contains, a lease if the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration.

  IFRS 16 contains a scope exception for leases to explore for or use minerals, oil, natural gas and similar non-regenerative resources. Consequently, Umicore's metal leases are out-of-scope of the leasing standards IAS 17 and IFRS 16. Umicore has no other significant lease contracts and therefore the impact of the implementation of IFRS 16 is expected to be limited

For all other new interpretations and standards not yet mandatory as from 1 January 2016, management has no indications that this will result in a material impact on the Group's consolidated financial statements.

F41 AUDITORS' REMUNERATION

The worldwide remuneration for the statutory auditor and its affiliated companies totalled EUR 3.4 million, including an amount of EUR 1.8 million for the statutory audit missions (EUR 0.5 million for the audit of the mother company) and EUR 1.6 million for non-statutory audit services including audit-related and other attestation services (EUR 0.5 million) and other non-audit related services (EUR 1.1 million).

F42 DISCONTINUED OPERATIONS

In 2015, in light of Umicore's review of its portfolio of activities, a process was initiated to prepare the Zinc Chemicals and Building Products business units for a future outside the Umicore Group. Management analysed whether criteria were met to present both activities as discontinued operations. Based on this analysis it was decided to present both business units as discontinued operations as from 30 June 2015.

As a result, since 2015, discontinued operations are shown in one line item on the balance sheet in accordance with IFRS 5 and with elimination of balance sheet positions between the continued and discontinued operations. No deprecations have been recorded for discontinued operations as from 30 June 2015 but all discontinued balance sheet items are presented at the lower of the fair value less cost-to-sell and the carrying amount, in accordance with IFRS 5 and based upon a detailed impairment analysis.

In June 2016, Umicore announced that an agreement to sell its Zinc Chemicals business unit to OpenGate Capital, a US-based private equity firm, had been reached. The transaction has been effectively closed at the end of October 2016. All the income statement elements of Zinc Chemicals before the end of October have been shown under discontinued operations.

The Building Product activities still meet the criteria of discontinued operations and is still classified as discontinued until the effective divestment.

ASSETS AND LIABILITIES OF DISCONTINUED OPERATIONS

EUR thousand	31/12/2015	31/12/2016
Non-current assets	**163,575**	**90,344**
Property, plant and equipment	116,502	62,137
Investments accounted for using the equity method	22,852	15,981
Other non-current assets	24,221	12,226
Current assets	**256,024**	**163,140**
Inventories	124,893	92,531
Trade and other receivables	91,546	23,931
Cash and Cash equivalents	37,872	45,326
Other current assets	1,713	1,352
TOTAL ASSETS	**419,599**	**253,484**
Non-current liabilities	**44,105**	**39,768**
Provisions for employee benefits	36,624	36,896
Financial debt	803	487
Other non-current liabilities	6,679	2,385
Current liabilities	**185,088**	**105,140**
Financial debt	22,712	371
Trade and other payables	157,648	103,478
Other current liabilities	4,727	1,291
TOTAL LIABILITIES	**229,193**	**144,908**

Analysis of the result of discontinued operations and cash flows including a restatement of prior periods in accordance with IFRS 5 is shown below:

CONDENSED INCOME STATEMENT OF DISCONTINUED OPERATIONS

EUR thousand	2015	2016
Operating income	748,440	661,311
Operating expenses	(729,167)	(696,754)
Result from operating activities	**19,272**	**(35,445)**
Finance cost – Net	(1,870)	(3,031)
Share in result of companies using the equity method	348	1,254
Profit (loss) before income tax	**17,750**	**(37,222)**
Income taxes	(1,326)	(13,081)
Profit (loss) of the period	**16,424**	**(50,303)**
EUR		
Basic earnings per share from discontinued operations	0.15	(0.46)
Diluted earnings per share from discontinued operations	0.15	(0.46)

CONDENSED CASHFLOW STATEMENT OF DISCONTINUED OPERATIONS

EUR thousand	2015	2016
Net operating cashflow	**108,768**	**(63,363)**
Net cash flow generated by (used in) investing activities	**(26,030)**	**28,909**
Net cash flow generated by (used in) financing activities	**15,164**	**(22,579)**
Effect of exchange rate fluctuations on cash held	(595)	(3,002)
Net cash flow from discontinued operations	**97,307**	**(60,034)**
Net cash and cash equivalents at the beginning of the period for discontinued operations	**(23,057)**	**37,872**
Impact of final financing carved out entities	(36,378)	67,488
Net cash and cash equivalents at the end of the period for discontinued operations	**37,872**	**45,326**

Referring to the accounting policies, the Group has made a policy choice of assessing whether the arrangement will continue in the future and as a result, intercompany transactions within the income statement between the discontinued and continued operations are not eliminated against continuing operation to the extent that the arrangement will continue in the future and the amounts will become external revenues/expenses insubsequent periods.

The commercial transactions between continued and discontinued were higher compared to last year (EUR 18.1 million in the operating expenses of the discontinued operations and EUR 6.0 million in the operating income of the discontinued operations), including the 10 months contribution of Zinc Chemicals. There are also some loans granted to discontinued operations (EUR 7.4 million) at the end of the year. In the balance sheet, those loans have been eliminated as per the accounting policy.

The total items of the Other Comprehensive Income that may be subsequently reclassified to income statement are mainly related to currency translation differences (EUR 2.9 million).

Umicore has taken note of the decision of the French Competition Authority regarding certain business practices of the company's Building Products activities in France and of the imposed fine of EUR 69.2 million that was paid during the second semester. The French Competition Authority claims that Umicore imposed an exclusive purchase obligation on some of its distributors in France between 1999 and 2007 and in doing so abused an alleged position of market dominance. Umicore strongly denies the alleged abuse of a dominant position and has lodged an appeal against the decision in court. In the cash flow statement of 2016, the impact of financing of discontinued operations is mainly related to the EUR 69.2 million cash out from this fine which has been paid by entities included in the continuing operations while the cost of the fine is shown in discontinued operations as it relates to Building Products.

The discontinued operations have some material external commercial commitments to deliver (EUR 15.3 million) or receive (EUR 0.5 million) metals to customers or from suppliers at fixed prices. The external guarantees constituted by third parties on behalf of the discontinued operations amount to EUR 6.6 million.

The balance sheet of the Zinc Chemicals entities at the end of October on which the capital gain calculation has been based was:

ASSETS AND LIABILITIES OF DISCONTINUED ENTITIES SOLD

EUR thousand	31/10/2016
Non-current assets	77,434
Current assets	176,964
TOTAL ASSETS	**254,397**
Equity	69,101
Retained earnings	72,436
Items of OCI reclassified to retained earnings	(5,081)
Items of OCI to be reclassified to P&L	1,746
Non-current liabilities	15,047
Current liabilities	167,629
TOTAL LIABILITIES	**182,675**
Price received	66,371
Additional price to be received in 2017/2018	2,400
Capital Gain	1,416

The reconciliation between the consideration paid and the cash flow from investing activities of continuing operations is detailed in note 34.

Parent company separate summarised financial statements

The annual accounts of Umicore are given below in summarised form.

In accordance with the Companies code, the annual accounts of Umicore, together with the management report and the statutory auditor's report will be deposited with the National Bank of Belgium.

UMICORE
Rue du Marais 31 Broekstraat
B-1000 Brussels (Belgium)

The statutory auditor did not express any reservations in respect of the annual accounts of Umicore.

The legal reserve of EUR 50,000 thousand which is included in the retained earnings is not available for distribution.

EUR thousand	31/12/2014	31/12/2015	31/12/2016
SUMMARISED BALANCE SHEET AT 31 DECEMBER			
1. ASSETS			
Fixed assets	**3,813,172**	**3,835,808**	**3,847,718**
II. Intangible assets	88,202	88,287	117,183
III. Tangible assets	347,625	353,974	365,507
IV. Financial assets	3,377,345	3,393,547	3,365,028
Current assets	**811,395**	**684,601**	**752,880**
V. Amounts receivable after more than one year	373	373	373
VI. Stocks and contracts in progress	411,793	343,868	351,864
VII. Amounts receivable within one year	258,740	163,725	216,042
VIII. Investments	131,290	162,043	164,809
IX. Cash at bank and in hand	712	951	1,901
X. Deferred charges and accrued income	8,487	13,641	17,891
Total assets	**4,624,567**	**4,520,409**	**4,600,598**
2. LIABILITIES AND SHAREHOLDERS' EQUITY			
Capital and reserves	**1,211,343**	**1,214,164**	**1,298,506**
I. Capital	500,000	500,000	500,000
II. Share premium account	6,610	6,610	6,610
III. Revaluation surplus	91	91	91
IV. Reserves	321,585	330,067	289,770
V. Result carried forward	244,371	236,627	346,860
Vbis. Result for the period	131,238	135,456	148,537
VI. Investments grants	7,448	5,313	6,638
Provisions and deferred taxation			
VII.A. Provisions for liabilities and charges	115,233	109,685	111,775
Creditors	**3,297,991**	**3,196,560**	**3,190,317**
VIII. Amounts payable after more than one year	1,582,000	1,572,000	1,981,249
IX. Amounts payable within one year	1,653,944	1,563,686	1,117,268
X. Accrued charges and deferred income	62,047	60,873	91,800
Total liabilities and shareholders' equity	**4,624,567**	**4,520,409**	**4,600,598**

EUR thousand	31/12/2014	31/12/2015	31/12/2016
INCOME STATEMENT			
I. Operating income	2,938,337	2,961,093	2,415,676
II. Operating charges	(2,869,762)	(2,888,281)	(2,412,640)
III. Operating result	**68,575**	**72,812**	**3,036**
IV. Financial income	156,163	182,294	258,002
V. Financial charges	(94,156)	(106,570)	(113,178)
VI. Result on ordinary activities before taxes	**130,582**	**148,536**	**147,860**
X. Income taxes	656	(13,080)	677
XI. Result for the period	**131,238**	**135,456**	**148,537**
XIII. Result for the period available	**131,238**	**135,456**	**148,537**

EUR thousand	2014	2015	2016
APPROPRIATION ACCOUNT			
A. Profit (loss) to be appropriated	**547,094**	**511,065**	**520,620**
1. Profit (loss) for the financial year	131,238	135,456	148,537
2. Profit (loss) carried forward	415,856	375,609	372,083
C. Appropriation to equity	**(62,997)**	**(8,482)**	**(40,296)**
3. To the reserve for own shares	(62,997)	(8,482)	(40,296)
D. Profit (loss) to be carried forward(1)	**375,609**	**372,083**	**338,276**
2. Profit (loss) to be carried forward	375,609	372,083	338,276
F. Profit to be distributed(1)	**(108,488)**	**(130,500)**	**(142,048)**
1. Dividends			
Ordinary shares	**(108,488)**	**(130,500)**	**(142,048)**

(1) The total amount of these two items will be amended to allow for the amount of the company's own shares held by Umicore on the date of the Annual General Meeting of Shareholders on 25 April 2017; the gross dividend of EUR 1,30 per share will not change.

	EUR THOUSAND	NUMBER OF SHARES
STATEMENT OF CAPITAL		
A. Share capital		
1. Issued capital		
At the end of the preceding financial year	500,000	112,000,000
At the end of the financial year	500,000	112,000,000
2. Structure of the capital		
2.1. Categories of shares		
Ordinary shares	500,000	112,000,000
2.2. Registered shares or bearer shares		
Registered		21,294,861
Bearer		90,705,139
E. Authorised unissued capital	**50,000**	

	% CAPITAL	NUMBER OF SHARES	NOTIFICATION DATE
G. SHAREHOLDER BASE[1]			
Family Trust Desmarais, Albert Frère and Groupe Bruxelles Lambert S.A.	15.00	16,802,836	24/09/2015
BlackRock Investment Management	5.03	5,638,752	06/10/2015
APG Asset management	3.00	3,364,389	24/10/2016
Others	74.57	83,520,873	31/12/2016
Own shares held by Umicore	2.39	2,673,150	31/12/2016
	100.00	112,000,000	
of which free float	100.00	112,000,000	

(1) At 31 December 2016, 2.822.875 options on Umicore shares are still to be exercised. This amount includes 2.822.875 acquisition rights of existing shares held by Umicore.

Management responsibility statement

We hereby certify that, to the best of our knowledge, the Consolidated Financial Statements as of 31 December 2016, prepared in accordance with the International Financial Reporting Standards (IFRS) as adopted by the European Union, and with legal requirements applicable in Belgium, give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group and the undertakings included in the consolidation taken as a whole, and that the management report includes a fair review of the development and performance of the business and the position of the group and the undertakings included in the consolidation taken as a whole, together with a description of the principal risks and uncertainties that they face.

20 March 2017,

Marc Grynberg
Chief Executive Officer

ENVIRONMENTAL STATEMENTS

Contents

Environmental statements

ENVIRONMENTAL KEY FIGURES*

	UNIT	NOTES	2012	2013	2014	2015	2016
Metal emissions to water (load)	kg	E2	5,701	5,560	5,639	4,459	**3,738**
Metal emissions to water (impact units)		E2	245,935	313,883	543,332	328,013	**339,001**
Metal emissions to air (load)	kg	E2	16,615	12,522	13,309	14,544	**1,761**
Metal emissions to air (impact units)		E2	135,670	130,169	128,465	135,660	**86,098**
SOx emissions	tonne	E2	487	686	1,189	1,197	**892**
NOx emissions	tonne	E2	399	386	425	452	**365**
CO_2e emissions (scope1+2) – Market based**	tonne	E3	701,898	690,767	664,568	710,143	**666,814**
CO_2e emissions (scope1+2) – Location based**	tonne	E3	–	–	–	–	**739,820**
Energy consumption	terajoules	E4	7,315	7,557	7,304	7,742	**6,760**
Water use	thousand m^3	E5	4,310	4,343	4,645	4,904	**4,851**
Total waste produced	tonne	E7	69,702	68,575	76,810	72,663	**77,625**
Hazardous waste	tonne	E7	47,789	45,668	54,824	51,525	**59,437**
of which recycled	%	E7	7.5	16.9	7.5	7.8	**3.8**
Non hazardous waste	tonne	E7	21,914	22,906	21,986	21,138	**18,188**
of which recycled	%	E7	54.7	60.2	60.4	56.3	**57.8**
Compliance excess rate	%	E9	1.1	0.8	0.9	0.8	**0.9**
Environmental complaints	N°	E9	24	25	31	25	**19**
Sites ISO 14001 certified	%	E9	93	97	97	92	**88**

* Data for 2015 and previous years includes the divested business unit Zinc Chemicals, while 2016 data does not.

** CO_2e emissions data for 2015 and previous years is an aggregation of market-based and location-based scope 2 emissions. A direct comparison to 2016 data is not possible. If such comparison were to be made, the most meaningful approximation is to use the market-based 2016 figure (see section E4 for details).

NOTES TO THE ENVIRONMENTAL KEY FIGURES

E1 SCOPE OF ENVIRONMENTAL STATEMENTS

The environmental key figures include data from consolidated industrial sites where Umicore has operational control. Due to the completion of the divestiture of the business unit Zinc Chemicals (Discontinued Operations) and the closure of one further site in 2016, the following sites are no longer reported compared to 2015: Angleur, Heusden-Zolder, Overpelt (all Belgium), Changsha (China), Eijsden (The Netherlands), Larvik (Norway), Pasir Gudang (Malaysia) (all Zinc Chemicals) and Yokohama (Japan, Platinum Engineered Materials). Two sites were added to the reporting scope: Nowa Ruda (Poland, Automotive Catalysts) and Qingyuan (China, Thin Film Products). This brings the total number of consolidated industrial sites that report environmental data to 59 compared to 65 in 2015.

Within the scope of Umicore's reporting framework, the majority of the sites report their environmental data at the end of the 3rd quarter together with a forecast for the 4th quarter. In January, the forecasted values are checked by the site for significant deviations and, if needed, corrected. The six sites with the largest environmental impact for 2016 are: Hanau (Germany; Catalysis, Recycling), Olen (Belgium; Energy & Surface Technologies, Group R&D), Hoboken (Belgium; Recycling), Jiangmen (China; Energy & Surface Technologies), Cheonan UMK and Cheonan UMAK (both South Korea; Energy & Surface Technologies). They report their full year figures. A sensitivity analysis undertaken for the 2016 data on energy consumption data indicates that the potential deviation of the Group environmental performance would be less than 4% in case of a 20% error in the forecasted data.

Please note that due to improved analytical and reporting methods, some of the data published in the 2015 annual report has been restated in the 2016 report. Unless mentioned otherwise, environmental KPIs for 2015 and previous years include the business unit Zinc Chemicals that was divested during the course of 2016, while 2016 KPIs do not include Zinc Chemicals.

More details on Umicore's management approach are available in the corresponding section on pages 62-67.

E2 EMISSIONS TO WATER AND AIR

Umicore's Vision 2015 achievements of reducing our metal emissions to water and air in terms of impact by 26% and 37%, respectively, marks a great step towards sustainable operations. We consider the emission levels achieved in 2015 our future frame of reference in the context of sustainable operations that include the management of the emissions to water and air.

The aim for Horizon 2020 is to build on the Vision 2015 achievements by reducing the impact of metal emissions while taking into account growing volumes of production. In practice this means that we aim to at least maintain the level of metals emitted to water and air in terms of impact that we achieved as part of Vision 2015.

Metal emissions to water are defined as the total amount of metals emitted after treatment to surface water from effluent(s) expressed in kg/year. If sites make use of an external waste water treatment plant, the efficiency of that treatment is taken into account if known to the site.

Metal emissions to air are defined as the total amount of metals emitted to air in solid fraction by all point sources expressed in kg/year. For mercury and arsenic, additional vapour/fume fractions are counted as well.

For each of the metals emitted to water and air, an impact factor is applied to account for the different toxicity and ecotoxicity levels of the various metals when they are emitted to the environment. The higher the impact factor, the higher the toxicity is to the receiving water body (for water emissions) or to human health (for air emissions).

The impact factors for water emissions are based upon scientific data generated ('predicted no effect concentrations' or PNECs) for the REACH regulation. An impact factor of 1 was attributed to the antimony PNEC of 113 µg/l. The impact factors for emissions to air are based upon the occupational exposure limits (OEL) (reference: American Conference of Industrial and Governmental Hygienists, 2011). An impact factor of 1 was attributed to the zinc (oxide) OEL of 2 mg/m^3. Subsequently, an impact factor for all relevant metals was calculated based upon these references. The metal impact to air and to water is expressed as 'impact units/year'.

We identified the sites that contribute at least 95% in terms of load (for SO_x and NO_x) or impact units (for metals emissions to water and air) of the total 2015 Group figures (excluding the divested business unit Zinc Chemicals). For emissions to water and air, data collection for 2016 was restricted to the identified material sites (ten or fewer). All other sites were requested to only submit data in case of significant upward deviations from the 2015 baseline for the site.

The aim of improving on 2015 levels of metal emissions to water and air is measured by way of comparing emissions of the current reporting year (i.e. 2016) with those of the reference year 2015 and using the same scope of activities as 2015 for the material sites.

In order to calculate the change in metal emissions to water and air in comparison with the reference year 2015, a baseline has been established for each site in scope. The baseline is established by multiplying the actual activity level of the current reporting year (i.e. 2016) by the 2015 emission intensity (see example below). The baseline 2015 is then calculated by adding all site-level baselines for the sites in scope. Examples of activity parameters at sites are: tonnes produced per year, machine hours per year, tonnes of input material in recycling process per year.

Example

In 2015 site A produced 20 t of product X and emitted 5 kg of metal Y (impact factor of Y = 8 impact units/kg) to air, resulting in a metal emissions intensity of 2 impact units/t of product X. In 2016 site A produced 22 t of product X and emitted 5 kg of metal Y, resulting in a metal emissions intensity of 1.8 impact units/ton of product X.

The 2015 baseline reported in 2016 is then: activity level of 2016 (22 t) x 2015 emissions intensity (2 impact units/t) = 44 impact units.

Therefore the measured 5 kg – equivalent to 40 impact units – emitted in 2016 represents a reduction of 10% compared to what it would have been under 2015 operating conditions.

The baseline 2015 is recalculated yearly (2016 and the following years). It is defined as the metal emissions that would have been expected with the activity volumes of the reporting year (i.e. 2016), but with the metal emissions intensity of the reference year 2015. The performance for each year is expressed as a percentage in comparison to the calculated 2015 group baseline applicable to each year.

The calculation of metal emissions to water and air covers fully consolidated operations and activities that are part of the Group during the reporting year (2016 and the following years) and that were also part of the Group in 2015. Performance is reported only for the total of the material sites for each KPI.

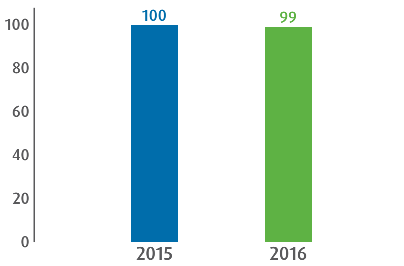
SO_x and NO_x emissions are expressed in absolute numbers in tonnes/year.

GROUP DATA – EMISSION SCOPE METAL EMISSIONS TO AIR AND WATER

	UNIT	BASELINE 2015 IN RELATION TO 2016	2016
Metal emissions to water	impact units	343,639	**339,001**
Metal emissions to air	impact units	123,779	**86,098**

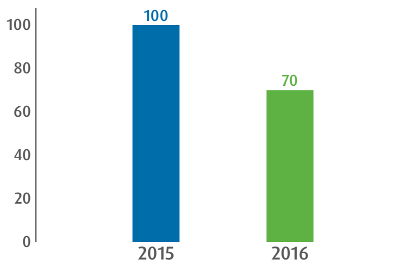
METAL EMISSION REDUCTION PERFORMANCE (TO WATER)

%



METAL EMISSION REDUCTION PERFORMANCE (TO AIR)

%



METAL EMISSIONS TO WATER

The metal emissions to water in 2016 using the defined scope resulted in 339,001 impact units. Metal emissions to water in 2015 using the defined scope were 316,900 impact units. For the purpose of assessing progress on our commitment, this 2015 metal emissions level normalised for 2016 activity was 343,639 impact units. In 2016 we have therefore achieved a 1% reduction of metal emissions to water in terms of impact.

This evolution is a combination of differing trends observed at our sites. At our Hoboken plant (Belgium, Recycling), the increased efficiency of the waste water treatment plant due to investments in improvement projects over the last years has started to pay off, while further reductions are expected in the future due to additional planned improvement projects over the coming years. Equally, some efficiency improvements and scale-effects after ramp-up of precursor production at our new site in Cheonan (South Korea, Energy & Surface Technologies) have led to a notable decrease of the emission intensity in terms of impact by metals emissions to water. On the other hand, increases in water throughput at our sites in Olen (Belgium, Energy & Surface Technologies and Group R&D) and Jiangmen (China, Energy & Surface Technologies) in combination with some higher measured concentrations – all below the permitted discharge limits – have led to an increased load for some metals with higher impact factors.

METAL EMISSIONS TO AIR

The metal emissions to air in 2016 using the defined scope were 86,098 impact units. Metal emissions to air in 2015 using the defined scope resulted in 119,254 impact units. For the purpose of assessing progress on our commitment, this 2015 metal emissions level normalised for 2016 activity was 123,779 impact units. In 2016 we have therefore achieved a 30% reduction of metal emissions to air in terms of impact.

The reductions are observed across almost all of the sites in scope to a varying degree, and can be ascribed for the most part to efforts that improved air filter efficiency and to improvements in overall process efficiency.

LEAD EMISSIONS AT HOBOKEN (BELGIUM, RECYCLING)

The site in Hoboken (Belgium, Recycling) reported increased metal emissions from diffuse sources. This led to higher values of lead PM10-dust depositions in the surrounding residential area of Moretusburg. Infrastructure works at the lead refinery are thought to be one of the main causes of these increased lead depositions. Umicore reported these increased results to the authorities and neighbourhood.

Twice a year, the provincial authorities conduct a biological monitoring campaign among children living around the facility. At the end of 2016, this monitoring showed that 73 children out of a total of 194 participants had lead in blood levels exceeding the reference value of the Center for Disease Control and Prevention (USA) of 5.0 µg/dl. Of these children, four had values in excess of 20 µg/dl. The average lead in blood of all children was 5.3 µg/dl, which is down from 15.0 µg/dl in 1998.

A comprehensive action plan has been launched with the authorities including an investment to better ventilate and filter the air at the lead refinery. An initial improvement action was completed by March 2017 with more significant improvements set to be finalised by the end of 2017. Other measures are being taken such as a further improvement to the management of diffuse sources during storage and transport of input materials.

Umicore is also working closely with the authorities to implement specific precautionary hygiene measures such as the cleaning of the homes of the children with the highest levels of lead concentration.

OTHER EMISSIONS

	UNIT	2012	2013	2014	2015	2016
SO_x emissions	tonne	487	686	1,189	1,197	**892**
NO_x emissions	tonne	399	386	425	452	**365**

The SO_x emissions for the Group decreased from 1,101 t in 2015 (excluding the divested business unit Zinc Chemicals) to 892 t in 2016, a reduction of 19%.

The NO_x emissions remained relatively stable at 365 t in 2016, in comparison to 373 t in 2015 (excluding the divested business unit Zinc Chemicals).

E3 GREENHOUSE GASES

The introduction of our energy efficiency and carbon footprint policy in 2011 guided us to a 26% reduction in CO_2 equivalent emissions within the defined scope in Vision 2015 and to permanent attention and awareness of energy efficiency at the sites and in the business units' management processes.

Under Horizon 2020, Umicore's improvement focus is on energy efficiency. The efforts to increase energy efficiency are expected to contribute to further reducing our carbon footprint.

Umicore reports its absolute CO_2e emissions as per the scope outlined in E1. The absolute CO_2 equivalent (CO_2e) emission volumes are calculated using the Greenhouse Gas Protocol definition and reporting methodology for scope 1 and 2 (WBCSD and WRI 2004, and amendment for scope 2 of 2015). Scope 2 for Umicore includes not only purchased electricity but also steam and compressed air purchased from third parties (e.g. from industrial parks). CO_2e includes the greenhouse gases CO_2, CH_4 and N_2O for scope 1 and major process emissions. Other greenhouse gases are not relevant in Umicore's operations. The scope 2 emissions take only CO_2 into account.

The calculation of scope 2 emissions for each site is done in two ways: once using market-based CO_2 emission factors and once using location-based CO_2 emission factors. The market-based emission factors allow calculating the CO_2 emissions based on the particular contracts that sites have in place with their energy suppliers, taking into account the relevant energy mix for these contracts (including green energy attributes, where applicable). The location-based CO_2 emission factors facilitate calculating the CO_2 emissions based on the residual energy mix in a country/region (where this data is available), thus explicitly excluding green energy attributes that are sold by the power producers in dedicated supply contracts. The total CO_2 emissions for the group are then presented as two separate values based on this differentiation, and the metrics are abbreviated as: CO_2e market-based and CO_2e location-based.

The WBCSD Chemical Sector Working Group on GHG Measurement and Reporting established additional guidance to cope with observed anomalies in GHG reporting. Umicore has implemented these guidelines already since the 2012 reporting. The publication of the sector guidelines can be found on their website.

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
CO_2e emissions (scope1+2) – Market based	tonne	701,898	690,767	664,568	710,143	**666,814**
CO_2e emissions (scope1+2) – Location based	tonne	–	–	–	–	**739,820**

Total CO_2e market-based emissions in 2016 were 666,814 t. Total CO_2e location-based emissions were 739,820 t. The difference between these two figures, 73,006 t, is due to particular energy contracts with a favourable energy mix that our sites have in place, which result in a lower carbon footprint than the residual energy mix for the country/region that the site is located in.

Total CO_2e emissions in 2015 (excluding the divested business unit Zinc Chemicals, which represented 16% of the 2015 emissions) were 596,540 t. No differentiation between market-based and location-based values was made in 2015. We consider that a direct comparison between the two reporting years as such cannot be made, but that the most meaningful approximation of such comparison is to use the market-based 2016 figure. The 2015 data included the market-based CO_2 emission factors as much as this was possible.

The comparison shows an increase by 12% year on year. About half of this increase is due to higher N_2O emissions at our plant in Hoboken (Belgium, Recycling), while the other half can be mostly attributed to higher activity levels across several sites in our business units Automotive Catalysts and Rechargeable Battery Materials.

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	UMICORE GROUP
CO_2e emissions (scope1+2) – Market based	tonne	113,527	209,957	327,195	15,605	**666,814**
CO_2e emissions (scope1+2) – Location based	tonne	130,627	219,803	373,719	14,906	**739,820**

E4 ENERGY

Umicore is committed under Horizon 2020 to an even more efficient use of energy in its operations. In practice this means that we aim to further increase the energy efficiency level that we achieved as part of Vision 2015.

The WBCSD Chemical Sector Working Group on GHG Measurement and Reporting established additional guidance to cope with observed anomalies in GHG and energy reporting. Umicore has implemented these guidelines already since the 2012 reporting. Publication of the sector guidelines can be found on the WBCSD website.

In the scope of Horizon 2020 a greater emphasis will be put on those sites that are contributing the most to Umicore's total energy consumption, and certain parameters such as activity indicators have been thoroughly reviewed for those sites and updated where required. Monitoring and reporting of the energy consumption continues to be done at all sites. The bigger contributors are additionally encouraged and required to report on their energy efficiency projects.

An analysis of the contributions of the sites to the energy consumption at group level identified 27 sites that contributed more than 95% to the 2016 total.

GROUP DATA – IN THE CONTEXT OF THE ENERGY EFFICIENCY OBJECTIVE

The aim of improving on 2015 levels of energy efficiency is measured by way of comparing the energy consumption of the current reporting year (i.e. 2016) with the energy consumption of the reference year 2015 and using the same scope of activities as 2015.

In order to calculate the change in energy consumption in comparison with the reference year 2015, a baseline has been established for each site in scope. The baseline is established by multiplying the actual activity level of the current reporting year (i.e. 2016) by the 2015 energy intensity (see example below). The baseline 2015 is then calculated by adding all site-level baselines for the sites in scope. Examples of activity parameters at sites are: tonnes produced per year, machine hours per year, tonnes of input material in recycling process per year.

Example

In 2015 site A produced 200 t of product X and consumed 80,000 GJ, resulting in an energy intensity of 400 GJ/t of product X. In 2016 site A produced 220 t of product X and consumed 80,000 GJ, resulting in an energy intensity of 364 GJ/ton of product X.

The 2015 baseline reported in 2016 is then: activity level of 2016 (220 t) x 2015 energy intensity (400 GJ/t) = 88,000 GJ.

Therefore the 80,000 GJ consumed in 2016 represents an improvement of 10% compared to what it would have been under 2015 operating conditions.

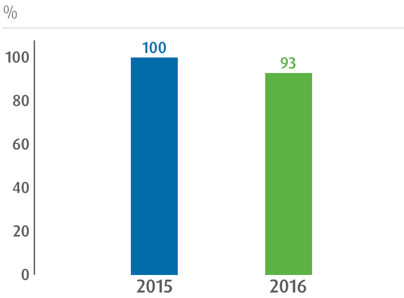
The baseline 2015 is recalculated yearly (2016 and the following years). It is defined as the energy consumption that would have been expected with the activity volumes of the reporting year (i.e. 2016), but with the energy intensity of the reference year 2015. The performance for each year is expressed as a percentage in comparison to the calculated 2015 group baseline applicable to each year.

The calculation of this KPI covers fully consolidated operations and activities that are part of the Group during the reporting year (2016 and the following years) and that were also part of the Group in 2015. It should be noted that the sites of the former business unit Zinc Chemicals (which represented 5% of the total energy consumption for the Group in 2015) and sites that were added to the reporting in 2016, i.e. Nowa Ruda (Poland, Catalysis) and Qingyuan (China, Energy & Surface Technologies), are therefore not in the reporting scope for this KPI. The energy consumption data also includes the two main office buildings in Brussels (Belgium) and Bagnolet (France).

ENERGY EFFICIENCY OBJECTIVE

	UNIT	BASELINE 2015 IN RELATION TO 2016	2016
Energy consumption	terajoules	6,726	**6,264**

NORMALISED ENERGY CONSUMPTION



The energy consumption 2016 using the defined scope was 6,264 TJ. The energy consumption in 2015 using the defined scope was 5,998 TJ. For the purpose of assessing progress on our commitment, this 2015 energy consumption level normalised for 2016 activity was 6,726 TJ. This means that for equivalent production levels we consumed 7% less energy. In other words, the energy efficiency has improved by 7% year on year.

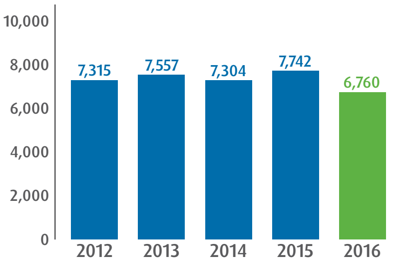
This improvement is in part due to scale-effects after ramp-up of precursor production and to general process efficiency improvements at our two sites in Cheonan (South Korea, Energy & Surface Technologies). Further improvements at other sites also contributed to the overall decrease in energy intensity, including additional process efficiencies at our Hoboken plant (Belgium, Recycling).

Energy efficiency projects have been implemented at the most important sites in line with foregoing sustainable development objectives since 2006. In 2016, 27 sites represented more than 95% of the Group's energy consumption. At these sites, 36 energy efficiency projects have been reported as being implemented during 2016 and contributed significant savings.

ABSOLUTE ENERGY CONSUMPTION

ENERGY CONSUMPTION (ABSOLUTE)

terajoules



Total energy consumption increased from 6,449 TJ in 2015 (excluding the divested business unit Zinc Chemicals) to 6,760 TJ in 2016, a 5% increase year on year.

Indirect energy consumption by primary energy source (purchased electricity, steam and compressed air) for production sites and office buildings in 2016 was 2,726 TJ. Direct energy consumption by primary energy source (fuel, gas oil, natural gas, LPG, coal and cokes) was 4,034 TJ.

BUSINESS GROUP DATA

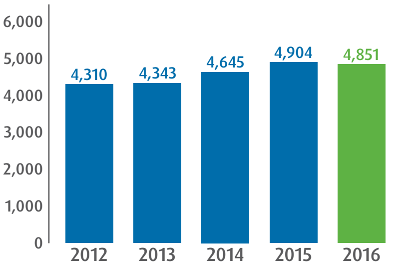
	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	UMICORE GROUP
Energy consumption	terajoules	1,008	2,537	2,792	414	**6,760**

E5 WATER USE

GROUP DATA

WATER USE

thousand m^3



Water use is defined as the total volume of water expressed in thousand m^3/year from domestic water supply, groundwater wells, surface water and rainwater. Groundwater extraction for remediation purposes and cooling water returned to its original water body are not counted.

The total water use for the Group increased slightly, from 4,735 thousand m^3 in 2015 (excluding the divested business unit Zinc Chemicals, which represented 3% of the total water use for the Group in 2015) to 4,851 thousand m^3 in 2016. This was mainly due to an activity increase at the site in Jiangmen (China) and the newer of the two sites in Cheonan (South Korea) (both Energy & Surface Technologies).

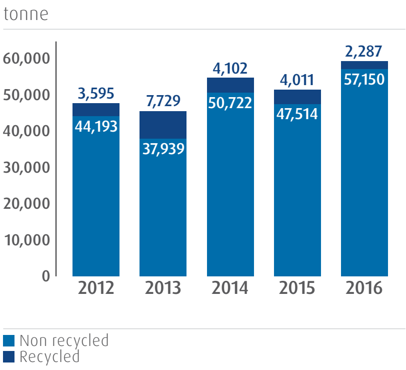
BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	UMICORE GROUP
Water use	thousand m³	569	2,174	1,692	416	**4,851**

E6 WASTE

GROUP DATA

HAZARDOUS WASTE



Waste is defined as the total volume of generated waste expressed in tonnes/year.

The waste recycling rate is the ratio of the waste recovered by third parties (including waste recovered as energy through incineration) and the total waste.

The distinction between hazardous and non-hazardous waste is made on the basis of the local regulation for the region where the reporting entity is located.

In 2016, a total of 77,625 tonnes of waste were generated compared to 68,800 tonnes in 2015 (excluding the divested business unit Zinc Chemicals, which represented 5% of total waste for the Group in 2015), an increase of 12%.

The total volume of hazardous waste increased from 50,653 tonnes in 2015 (excluding the divested business unit Zinc Chemicals, which represented 2% of total hazardous waste for the Group in 2015) to 59,437 tonnes in 2016, an increase of 17%. The recycling rate of hazardous waste has decreased from 7% in 2015 to 4% in 2016.

The total volume of non-hazardous waste has remained at similar levels at 18,188 tonnes in 2016 compared to 18,147 tonnes in 2015 (excluding the divested business unit Zinc Chemicals, which contributed 14% to the total non-hazardous waste in 2015).

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	UMICORE GROUP
Total waste produced	**tonne**	**5,740**	**27,515**	**41,291**	**3,079**	**77,625**
Hazardous waste	tonne	3,854	18,973	34,614	1,997	**59,437**
of which recycled	%	8.25	1.06	3.94	20.26	**3.85**
Non hazardous waste	tonne	1,886	8,542	6,677	1,083	**18,188**
of which recycled	%	50.97	28.99	93.66	75.31	**57.77**

E7 HISTORICAL POLLUTION

Actively participating in the management and remediation of risks that resulted from historical operations is an integral part of the Umicore Way. Over the past 15 years, Umicore's pro-active programme for assessing and remediating, where necessary, soil and groundwater contamination has made significant progress. The following section illustrates the main ongoing programmes and the progress made during 2016.

BELGIUM

Background: On 23 April 2004, Umicore signed a Covenant with the regional waste authorities (OVAM) and the Regional Minister of the Environment in the Flemish Region of Belgium by which Umicore committed to spend EUR 62 million over 15 years to remediate the historical pollution at four sites, of which two – Balen and Overpelt – now belong to Nyrstar, a business divested by Umicore in 2007.

2016 Activities: In Hoboken, an agreement was reached with the competent authorities to extend the on-site storage facility, so that on-site remediation works (excavation) can restart. An alternative concept for the groundwater remediation has been discussed and agreed upon with the authorities.

In Olen, the on-site groundwater remediation programme that was started in 2007 continued in 2016. In 2016, contaminated soil was further excavated at different locations where infrastructure works were needed, such as the construction of two new warehouses.

Umicore continued with other actions as part of the Covenant including the excavation of zinc ashes from private driveways within the entire 9 km perimeter covered by the covenant. A pilot project was initiated to capture and precipitate metals from the groundwater flowing into surface water.

In 2014, Umicore and the competent authorities signed an agreement to prolong by 5 years the period to complete the necessary risk reduction action within the 9 km perimeter. The agreement also contains an important clause through which Umicore and the authorities will tackle the remediation of the former Bocholt site, a former arsenic plant that was shut down and dismantled in the early 1970s.

FRANCE

In Viviez, Umicore continued with its large-scale remediation programme that was started in 2011. The project consists mainly of removing, rendering inert and restoring safely more than one million cubic metres of contaminated soil and waste. By the end of 2016, 1,280,000 m^3 of contaminated soil and waste had been removed and treated. As the project is reaching its finalisation, Umicore took measures to relieve the VMZINC (Building Products) operations from post-remedial obligations by transferring them to a third party specialised in waste management and recycling.

The former mining concession Saint-Félix de Pallières in the South of France, was secured in full compliance with the applicable legislation and returned to the French Authorities in 2004. In recent years, more attention has been focused by certain stakeholder groups on the potential health effects linked to the former mining activities. Although the authorities, including the Ministry of Environment, acknowledged that the mining concession was returned to the French State according to the requirements of the applicable legislation, Umicore committed itself to support the authorities voluntarily in addressing the concerns of the local population.

USA

Umicore continued to treat drainage water at a former mining site in Colorado (USA). Umicore is currently reviewing alternative technologies aimed at decreasing the metal concentration in the discharge and thus decreasing the volume of solid waste produced.

After the closing down of the Maxton plant in North Carolina, soil and groundwater contamination was identified. Umicore entered into a voluntary remediation program with the authorities to fully address the issue by 2030.

BRAZIL

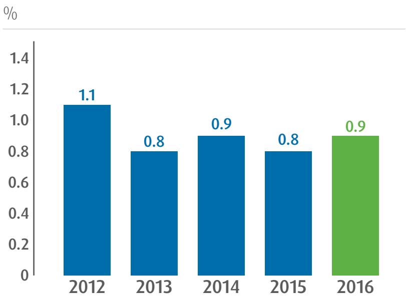
During an environmental assessment that was performed following its acquisition in 2003, groundwater pollution was detected at the Guarulhos site in Brazil. This historical pollution dates from before Umicore's purchase of the operations. Umicore took immediate measures to stop the spreading of this contamination to the neighbouring areas by installing a hydraulic barrier that has been in full operation since 2011. Targeted extraction systems were put in place on site in order to speed up the remediation.

Furthermore, Umicore has assessed the impact the historical contamination might have had to areas outside the operational plant. Umicore has worked with the local authorities to relocate the people living in the area adjacent to the facility and has turned the vacated space into a park, thereby reducing the potential exposure of the population. The park was officially inaugurated on 29 December 2016.

E8 REGULATORY COMPLIANCE AND MANAGEMENT SYSTEM

GROUP DATA

COMPLIANCE EXCESS RATE



The compliance excess rate is the ratio between the total number of excess results and the total number of compliance measurements. An excess result is a monitoring result that violates a limit value defined in a permit, regulation or other relevant regulatory standard.

The total number of measurements is the total number of environmental impact measurements as required by the operational permit, environmental permit or comparable standard in the region the reporting entity is operating. The total number means the number of measurements times the number of parameters per measurement.

In 2016, some 50,000 environmental measurements were carried out at all of Umicore's industrial sites compared to some 52,000 the year before (excluding the divested business unit Zinc Chemicals, which represented some 31,000 environmental measurements in 2015).

The number of measurements that did not meet the regulatory or permit requirements is very low at 0.95%for the Group, compared to 0.81% in 2015.

Three out of the 59 consolidated industrial sites are exempt from implementing a certified environmental management system. This is based on a strict procedure that confirms that the sites in question have no significant environmental impacts and would therefore not benefit substantially from installing such a system. Of the 56 remaining sites, 49 sites have put in place an environmental management system certified against ISO 14001. Six of the remaining seven sites are acquisitions that joined Umicore reporting in 2015/16, and all seven sites are planning the implementation of an environmental management system during 2017/18. With the exception of the newer of the Cheonan sites (South Korea, Energy & Surface Technologies), all major sites with significant environmental impacts have been certified against the ISO 14001 management system for many years. The Cheonan site, which joined Umicore reporting in 2015, is planning the implementation of a certified environmental management system during 2017/18.

In total, 19 environmental complaints were received in 2016. These were mainly related to noise and odour. Seventeen of the complaint files have already been closed.

Contents

Social statements

SOCIAL KEY FIGURES

	UNIT	NOTES	2012	2013	2014	2015	2016
Workforce (fully consolidated companies)	N°	S2	10,396	10,190	10,368	10,429	**9,921**
Temporary contracts	% of workforce	S2	4.21	3.42	3.62	3.91	**3.45**
Women amongst all employees	% of workforce	S2	21.88	21.53	21.68	21.72	**21.60**
Women amongst all managers	% of workforce	S2	20.25	20.52	21.25	22.18	**22.11**
Women amongst senior management	% of workforce	S2	7.41	8.70	8.33	9.49	**9.09**
Women in 'business operations' management functions	%	S2	–	–	–	–	**14.27**
Non-European representation in senior management functions	%	S2	–	–	–	–	**16.67**
Average training hours per employee	hours/employee	S3	50.72	45.18	45.59	45.06	**41.49**
Employees having a yearly appraisal	% of workforce	S3	91.80	95.65	95.82	95.97	**96.03**
Voluntary leavers – ratio	% of workforce	S3	3.20	3.33	3.42	3.35	**4.10**
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	S4	70.80	71.33	71.44	71.11	**69.41**
Exposure ratio 'all biomarkers aggregated' (1)	%	S6	4.3	2.6	1.8	2.3	**3.2**
Number of occupational linked diseases	N°	S6	20	14	21	12	**12**
People with platinum sensitisation	N°	S6	6	4	4	0	**1**
Fatal accidents	N°	S7	0	0	2	0	**1**
Lost Time Accidents (LTA)	N°	S7	49	35	37	47	**59**
Lost Time Accidents (LTA) for sub-contractors	N°	S7	33	22	11	9	**15**
LTA frequency rate	LTA/million hours worked	S7	2.86	2.08	2.16	2.66	**3.34**
LTA severity rate	lost days/thousand hours worked	S7	0.11	0.10	0.94	0.12	**0.56**

(1) Ratio between the number of monitoring results exceeding the Umicore target value, defined for relevant hazardous substances, and the total number of monitoring results.

NOTES TO THE SOCIAL KEY FIGURES

S1 SCOPE OF SOCIAL STATEMENTS

In total, 102 consolidated sites are included in the HR related notes of the social reporting (S2 to S5).

This is 13 fewer than in2015, mainly because of the divestment of the Business Unit Zinc Chemicals. Furthermore, two commercial offices were moved to a larger nearby Umicore site.

The sites report full year data for the social indicators.

The indicators presented are based on data from fully consolidated companies unless indicated otherwise.

The historical numbers (2015 and before) were not restated.

S2 WORKFORCE

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
Workforce (fully consolidated companies)	N°	10,396	10,190	10,368	10,429	**9,921**
Workforce from associated companies	N°	4,042	3,867	3,706	3,301	**3,196**
Employees men	N°	8,121	7,996	8,120	8,164	**7,778**
Employees women	N°	2,275	2,194	2,248	2,265	**2,143**
Full-time equivalent	N°	–	–	–	–	**9,716**
Employees < 30 years	N°	–	–	–	–	**1,620**
Employees between 30 and 50 years	N°	–	–	–	–	**5,605**
Employees > 50 years	N°	–	–	–	–	**2,696**
Temporary contracts	% of workforce	4.21	3.42	3.62	3.91	**3.45**
Women amongst all employees	% of workforce	21.88	21.53	21.68	21.72	**21.60**
Women amongst all managers	% of workforce	20.25	20.52	21.25	22.18	**22.11**
Women amongst senior management	% of workforce	7.41	8.70	8.33	9.49	**9.09**
Women in 'business operations' management functions	%	–	–	–	–	**14.27**
Non-European representation in senior management functions	%	–	–	–	–	**16.67**

Workforce: Number of employees on Umicore payroll at the end of the period in fully consolidated companies.

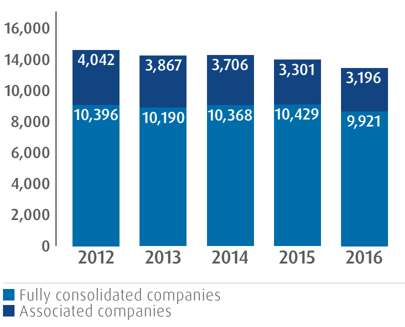
The number includes part-time and temporary employees but excludes employees with a dormant contract, employees on long term illness and sub-contracted employees.

Temporary contract: Umicore employees with a temporary contract, included in the workforce of fully consolidated companies.

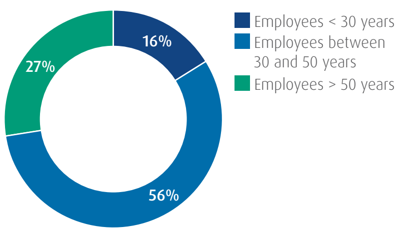
Full time equivalent: The FTE of a worker is calculated by dividing the actual working regime, hours, shifts by the regime, hours, shifts of a full-time worker at the end of the period in fully consolidated companies.

This applies to all hourly paid, monthly paid, managers and interns on Umicore's payroll at the end of the reported semester including part-time and temporary employees but excludes employees with a dormant contract (career interruption, maternity leave, parental leave, etc.), employees on long term illness (> 3 months at end of semester) and early retirees.

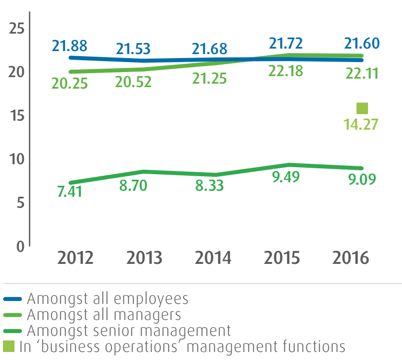
TOTAL WORKFORCE



WORKFORCE – AGE SPLIT



WOMEN REPRESENTATION



TOTAL WORKFORCE

The total workforce decreased by 613 employees to a total of 13,117. For the fully consolidated companies, the workforce decreased by 508 people to 9,921, mainly because of the divestment of Zinc Chemicals. While the divestment of Zinc Chemicals alone would have seen a larger decrease in workforce, Business Groups Catalysis and Energy & Surface Technologies saw growth to bring the reduction to a lesser number.

Amongst the associated companies there was a decrease of 105 employees as a result of production realignments and also by the fact that two of the associated companies were divested.

The report also publishes for the first time the FTE. The FTE of 9,716 (consolidated) comes very close to the reported headcount of 9,921, illustrating that most of Umicore employees are working on a full-time basis.

TEMPORARY CONTRACTS

Temporary contracts as a percentage of the workforce of fully consolidated companies decreased slightly to 3.45% in 2016.

GENDER SPLIT

The percentage of women was 21.60% as a proportion of the workforce of fully consolidated companies. It has remained in a narrow range of between 21% and 22% during the last six years. Women are more represented in administrative and commercial functions, compared to functions in the industrial operations. There are significant regional variations with Belgium and Northern Europe having a lower percentage of women employees compared to the rest of the world.

GENDER SPLIT – SENIOR MANAGERS

While the total percentage of women employees has remained rather stable (see above), the percentage of women managers has shown a steady increase from 18.65% in 2010 to 22.11% in 2016. Also the percentage of women in senior management has increased from 6.40% in 2010 to 9.09% in 2016 (although there is a drop from previous year due to attrition). We have set a 15% voluntary target for women in senior management functions by 2020.

WOMEN IN ‘BUSINESS OPERATIONS’ MANAGEMENT FUNCTIONS

In order to monitor career development we have defined the notion of “business operations” management functions, referring to those in the fields of operations, sales and General Management. Within the senior management group, these functions represent 55% of the group, as opposed to 45% for the support functions.

As from the year 2016, we monitor the percentage of women in these “business operations” functions, because these functions seem to offer a clearer pathway into the senior functions. In 2016, the percentage of women within this management group employed in business operations functions was 14.27%.

NON-EUROPEAN REPRESENTATION IN SENIOR MANAGEMENT FUNCTIONS

As from 2016, we also monitor the percentage of non-European representation in senior management functions, as an indicator for diversity. In 2016 this percentage amounted to 16.67%.

2016 REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Workforce (fully consolidated companies)	N°	6,401	831	675	1,751	263	**9,921**
Workforce from associated companies	N°	977	17	420	1,139	643	**3,196**
Employees men	N°	5,135	644	507	1,334	158	**7,778**
Employees women	N°	1,266	187	168	417	105	**2,143**
Full-time equivalent	N°	6,213.74	826.50	672.00	1,747.25	257.00	**9,716.49**
Temporary contracts	% of workforce	4.98	0.72	0.59	0.69	0.38	**3.45**

2016 BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	CORPORATE	UMICORE GROUP
Workforce (fully consolidated companies)	N°	2,464	2,357	3,170	946	984	**9,921**
Workforce from associated companies	N°	177	847	0	420	1,752	**3,196**
Employees men	N°	1,944	1,906	2,598	752	578	**7,778**
Employees women	N°	520	451	572	194	406	**2,143**
Full-time equivalent	N°	2,437.65	2,344.23	3,137.94	935.55	861.10	**9,716.49**
Temporary contracts	% of workforce	5.32	2.59	2.49	5.60	1.83	**3.45**

GENERAL OVERVIEW OF SITES AND EMPLOYEES

	INDUSTRIAL SITES	OTHER SITES	EMPLOYEES
Europe			
Austria	1		133
Belgium	4	1	2,849
Czech Republic		1	3
Denmark		1	12
France	5	2	795
Germany	6 (1)	1 (1)	2,100 (360)
Hungary		1	6
Ireland	(1)		(433)
Italy	1	3	84
Liechtenstein	1		74
Luxembourg		1	11
Netherlands	1		47
Poland	1	2	89
Portugal		1	5
Russia		1	6
Slovakia	1		41
Spain		2	18
Sweden	1	1(1)	38 (8)
Switzerland	1	2	32
Turkey		1	4
United Kingdom	1 (1)	3 (1)	54 (176)
Asia-Pacific			
Australia		3	15
China	6 (3)	6 (1)	836 (949)
India	1	1	78
Japan	4	3 (1)	168 (9)
Philippines	1		78
South Korea	2 (1)	1	387 (177)
Taiwan	1	1	23
Thailand	3		166
United Arab Emirates		(1)	(4)
North America			
Canada	3		236
Mexico		1	4
United States	9	2 (1)	591 (17)
South America			
Argentina	1		58
Brazil	3		617
Peru	(1)		(420)
Africa			
South Africa	1 (1)	1	263 (643)
Total	**59 (9)**	**43 (7)**	**9,921 (3,196)**

S3 PEOPLE ENGAGEMENT

GROUP DATA

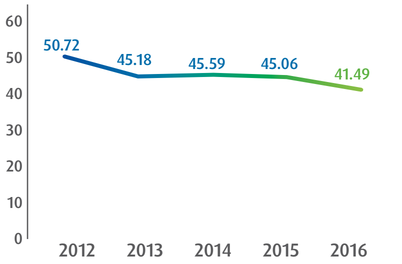
	UNIT	2012	2013	2014	2015	2016
Employees having a yearly appraisal	% of workforce	91.80	95.65	95.82	95.97	**96.03**
Average number of training hours per employee	hours/employee	50.72	45.18	45.59	45.06	**41.49**
Average number of training hours per employee – Men	hours/employee	51.75	45.82	48.09	45.32	**42.38**
Average number of training hours per employee – Women	hours/employee	46.04	42.26	39.76	47.39	**38.28**
Average number of training hours per employee – Managers	hours/employee	64.15	41.41	37.18	34.24	**41.03**
Average number of training hours per employee – Other employee categories	hours/employee	45.57	44.82	46.29	46.09	**41.52**
Voluntary leavers ratio	% of workforce	3.20	3.33	3.42	3.35	**4.10**
Voluntary leavers men	N°	251	253	273	280	**309.00**
Voluntary leavers women	N°	81	89	80	69	**97.00**

Training hours: Average number of training hours per employee, including all types of training (formal, training on the job, E-learning, etc.) in which the company provides support and which are relevant to the business unit or the company. The total number of training hours is divided by the total workforce of fully consolidated companies.

Voluntary leavers: Number of employees leaving the company of their own will (excluding retirement and the expiry of a fixed-term contract). This figure is related to the workforce from fully consolidated companies.

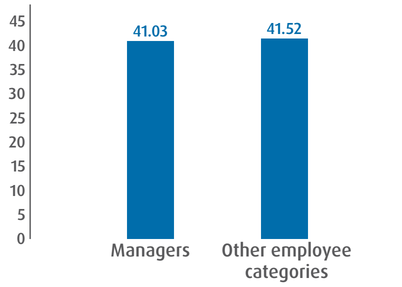
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE

Hours/employee



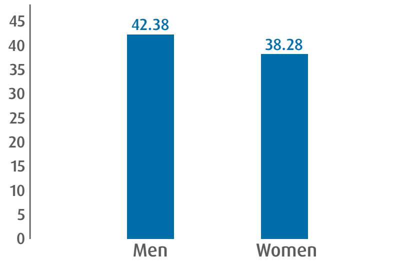
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE CATEGORY

Hours/employee



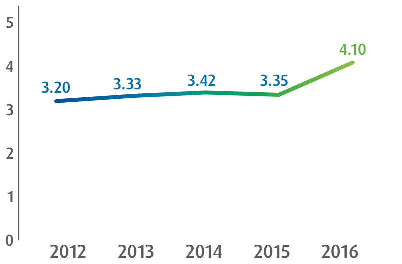
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE – GENDER SPLIT

Million EUR



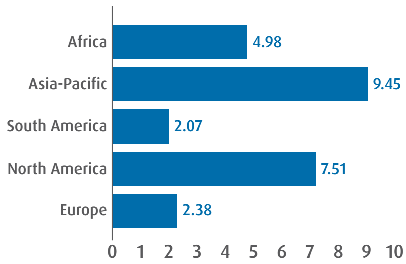
VOLUNTARY LEAVERS RATIO

%



VOLUNTARY LEAVERS RATIO

% of workforce



2016 REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Average number of training hours per employee	hours/employee	38.78	33.63	69.26	46.31	29.97	**41.49**
Employees having a yearly appraisal	% of workforce	98.75	96.75	100.00	82.75	99.62	**96.03**
Voluntary leavers ratio	% of workforce	2.38	7.51	2.07	9.45	4.98	**4.10**

2016 BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	CORPORATE	UMICORE GROUP
Average number of training hours per employee	hours/employee	41.67	46.82	40.06	35.16	39.06	**41.49**
Employees having a yearly appraisal	% of workforce	97.12	87.99	99.27	97.99	100.00	**96.03**
Voluntary leavers ratio	% of workforce	5.54	6.46	2.23	1.60	3.27	**4.10**

TRAINING HOURS

In 2016, the average training hours per employee reached 41.49 hours. This is somewhat lower than the previous years.

The reduction is attributed to fewer hirings compared to the previous years and some sites anticipating on staff reductions, resulting in less training at those sites.

Data shows that managers training hours (41.03 hours) is in balance with other employees (41,52 hours).

YEARLY APPRAISAL

In 2016, 96.03% of all employees from fully consolidated companies have an appraisal interview to discuss their development at least once a year.

VOLUNTARY LEAVERS

In the previous five years, the percentage of voluntary leavers has fluctuated between 3.2 and 3.8. In 2016 the percentage increased to 4.10%. As was the case in previous years, significant regional differences can be observed with Asia Pacific reporting the highest turnover rate (9.45%) and Europe (2.38%) the lowest. The high turnover rate in Asia Pacific is not unique to Umicore and can be explained by a highly competitive and fluid labour market in some of the growth markets.

VOLUNTARY LEAVERS – GENDER

23.89% of the voluntary leavers are women, which is slightly higher than the 21.60% presence of women in the workforce of fully consolidated companies.

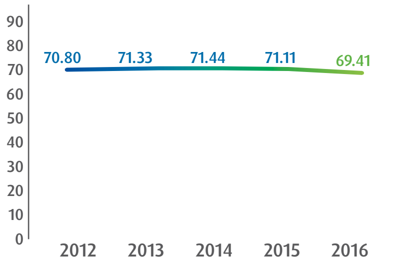
S4 EMPLOYEE RELATIONS

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	70.80	71.33	71.44	71.11	**69.41**

EMPLOYEES REPRESENTED BY UNION OR COLLECTIVE LABOUR AGREEMENT (CLA)

% of workforce



2016 REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	85.47	8.90	93.04	31.81	59.32	**69.41**

2016 BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	CORPORATE	UMICORE GROUP
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	59.38	54.05	84.10	76.64	77.03	**69.41**

UNION AND COLLECTIVE LABOUR AGREEMENT

In total, 69.41% of Umicore employees belong to a trade union organisation and/or the level of their wages are negotiated through a collective bargaining agreement. On a regional basis, there are important differences in union representation, with the highest representation in South America and Europe and the lowest in North America and Asia Pacific.

SUSTAINABLE DEVELOPMENT AGREEMENT

In 2007, Umicore signed a Sustainable Development Agreement with the International union IndustriALL, which was again renewed in 2015 for a period of four years. In this agreement, Umicore commits to a number of principles including: the banning of child labour and forced labour, recognising the right to its employees to organise themselves and to participate in collective bargaining.

All sites are screened internally each year. This screening showed that none of Umicore's sites demonstrated a particular risk of infringement in any of the principles of the agreement.

S5 CODE OF CONDUCT

Since 2011, Umicore has organised for the first time a systematic Group-wide internal reporting on Code of Conduct issues. In 2016 a total of 14 cases were reported, involving a total of 21 employees. The type of action taken varies from a warning letter to dismissal.

S6 OCCUPATIONAL HEALTH

All consolidated industrial sites where Umicore has operational control are included in the scope of the occupational health reporting. Compared to 2015, data of nine sites are not reported anymore: Angleur, Heusden-Zolder, Overpelt (all Belgium), Changsha (China), Eijsden (Netherlands), Larvik (Norway), Pasir Gudang (Malaysia) (all Zinc Chemicals), Shanghai (China, Cobalt & Specialty Materials and Zinc Chemicals) and Yokohama (Japan, Platinum Engineered Materials). Two sites were added to the reporting scope: Nowa Ruda (Poland, Automotive Catalysts) and Qingyuan (China, Thin Film Products). This brings the total number of reporting sites to 58.

The information in this note only relates to Umicore's employees. Data on sub-contractors' occupational health are not included. Additional information on Umicore's management approach on occupational health can be found in the corresponding section on page 66.

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
Exposure ratio 'all biomarkers aggregated' (1)	%	4.3	2.6	1.8	2.3	**3.2**
Exposure ratio lead (blood) (2)	%	0.5	0.9	1.0	0.8	**0.5**
Exposure ratio arsenic (urine) (2)	%	1.4	1.6	1.1	1.3	**2.0**
Exposure ratio cobalt (urine) (2)	%	14.8	10.7	7.3	8.7	**9.0**
Exposure ratio cadmium (urine) (2)	%	3.0	1.0	0.6	1.1	**1.4**
Exposure ratio nickel (urine) (2)	%	7.1	1.1	0.3	1.3	**2.0**
Exposure ratio indium (blood) (2)	%	–	–	–	–	**11.3**
People with platinum salts sensitisation	N°	6	4	4	0	**1**
People with noise induced hearing loss	N°	4	3	5	2	**4**
People with contact dermatitis	N°	2	2	2	3	**0**
People with occupational asthma other than Pt-salts	N°	1	0	0	1	**0**
People with muskulo-skeletal ailments	N°	7	5	14	7	**7**

(1) Ratio between the number of monitoring results exceeding the Umicore target value, defined for relevant hazardous substances, and the total number of monitoring results.

(2) The exposure ratio of a specific metal is defined as the ratio between the number of employees with a biological monitoring result exceeding the Umicore target value for that specific metal and the total number of employees exposed to that metal. The Umicore target values are inspired by the biological exposure indices of the American Conference of Governmental Industrial Hygienists (ref. 2011) and are at least as strict as any legal limits in force in countries where we operate.

It is Umicore's objective to have by 2020 no exceedance for the biomarkers of exposure for the metals listed below. The following target values have been defined:

- **Cadmium:** 2 microgramme per gramme of creatinine in urine.
- **Lead:** 30 microgramme per 100 ml of blood.
- **Cobalt:** 15 microgramme per gramme of creatinine.
- **Indium:** 1 microgramme per liter of plasma.
- **Arsenic and nickel:** 30 microgramme per gramme of creatinine.
- **Platinum salts:** no new cases of platinum salt sensitisation.

The number of occupational diseases is the number of employees with a newly-diagnosed occupational disease or occupationally linked symptoms during the reporting cycle.

In 2016, a total of 5,294 biological samples were taken from employees with an occupational exposure to at least one of the metals mentioned above (platinum salts excluded). 170 readings showed a result in excess of the internal target value. This brings the total excess rate to 3.2% compared to 2.3% in 2015. All occupationally exposed employees are regularly monitored by an occupational health physician.

LEAD

Occupational lead exposure represents a potential health risk in the business groups Energy & Surface Technologies, and Recycling. In total, 8 of the 1,512 occupationally exposed employees exceeded the target value of 30µg/100ml bringing the excess rate for lead exposure to 0.5%, slightly down from 0.8% in 2015.

The majority of the excess readings were in the lead refinery at the Hoboken site (Belgium, Recycling). Besides a strict respiratory protection policy, an increased ventilation is implemented to again reduce exposures at the workplace. All workers are submitted to a detailed medical surveillance programme.

ARSENIC

Occupational exposure to arsenic is possible in the business groups Energy & Surface Technologies and Recycling. In total, 2.0% of the 957 occupationally exposed had an excess reading during 2016 compared to 1.3% in 2015.

Higher workplace exposures were noted in the Guarulhos site (Brazil, Recycling) due to an increase in arsenic content of incoming raw materials. The site enhanced its respiratory protection program and is implementing engineering measures to reduce exposures. A medical surveillance programme is in place to closely follow-up the health condition and exposures of all workers exposed to arsenic.

COBALT

In total, 854 employees are occupationally exposed to cobalt, mainly in the business group Energy & Surface Technologies. The number of employees exceeding the target value was 77 resulting in an excess rate of 9.0%, up 8.7% in 2015.Excess readings in the business unit Cobalt & Specialty Materials slightly decreased from 32 in 2015 to 28 in 2016. The site in Wickliffe (USA, Energy & Surface Technologies) is not included into these numbers, as the biological monitoring programme has not yet been fully deployed. After several years of decrease, the site in Fort Saskatchewan (Canada) recorded 17 excess readings compared to 8 last year, due to higher production volumes. Additional technical and hygiene measures are implemented. In the business unit Rechargeable Battery Materials we noticed an increase in excess readings from 34 in 2015 to 49 in 2016. This is caused by a significant increase in production in the new facility in Cheonan (South-Korea, Energy & Surface Technologies). Besides technical measures, the site is further improving compliance with respiratory protection programs and housekeeping measures. The business units Cobalt & Specialty Materials and Rechargeable Battery Materials have for many years been developing an occupational health approach for cobalt including biological monitoring and medical health surveillance.

CADMIUM

Occupational exposure to cadmium represents a potential health risk in the business groups Energy & Surface Technologies and Recycling. Cadmium in urine is an excellent biomarker for lifetime exposure. In 2016, a total of 487 employees had an occupational exposure to cadmium.

Seven employees recorded a cadmium in urine reading in excess of the target value compared to 5 in 2015. This resulted in an excess rate of 1.4% compared to 1.1% in 2015.

NICKEL

The business groups Energy & Surface Technologies and Recycling have occupational exposure to nickel. In 2016 a total of 1,173 employees were exposed to nickel. In 2016, 24 of the exposed workers exceeded the target level resulting in an excess level of 2.0% compared to 1.3% in 2015.

This increase is caused by the increased production volumes at the site in Jiangmen (Energy & Surface Technologies, China) and the new site in Cheonan (Energy & Surface Technologies, South-Korea) comparable to the increase in cobalt exposures (see above). Measures include technical improvements, stricter housekeeping and personal protective equipment policies.

INDIUM

In the past decade, scientific data published in the peer review literature clearly demonstrate that occupational exposure to indium and indium tin oxide may result in adverse health effects, primarily at the level of the respiratory tract. During the period 2012 – 2016, the National Institute of Occupational Safety and Health (NIOSH, USA) has worked with Umicore on a health hazard assessment programme at the site in Providence (Energy & Surface Technologies, USA) to assess the effectiveness of the exposure prevention programmes. While the results by NIOSH clearly demonstrated the reduction in exposures made, the site continues to implement source control measures to continuously decrease exposures at the workplace. The knowledge acquired during this project was instrumental in the design and construction of a new site in Qingyuan (Energy & Surface Technologies, China). Umicore included exposure to indium and indium tin oxide to its occupational exposure reduction programme. Indium in plasma is an excellent life time exposure indicator.

In 2016, 311 workers were exposed to indium and indium tin oxide of which 35 workers were exposed above the target level of 1 microgramme per litre plasma. All workers with indium exposure are submitted to a medical surveillance program with focus on respiratory function.

PLATINUM SALTS

The business groups Catalysis and Recycling have workplaces with exposure to platinum salts.

In 2016 we had 1 newly diagnosed employees with a platinum salt sensitisation at the site in Pilar (Recycling, Argentina). All workers exposed to platinum salts are monitored through an occupational health programme and regularly screened on allergy.

OTHER OCCUPATIONAL DISEASES

In 2016, 4 employees were diagnosed with industrial noise-induced hearing loss and 7 developed a musculo-skeletal disorder due to their occupation. All people concerned are followed by an occupational health physician.

S7 OCCUPATIONAL SAFETY

In total, 104 consolidated site, of which 61 are industrial site are included in the safety reporting. This number also includes commercial offices but excludes the sites of the divested Business Unit Zinc Chemicals.

Additional information on Umicore's management approach on safety can be found in the corresponding section on page 66.

The Umicore information in this note only relates to Umicore's employees. Data on sub-contractors' occupational safety are reported separately. It is Umicore's objective to have zero lost time accidents by 2020.

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
Fatal accidents	N°	0	0	2	0	**1**
Fatal accidents sub-contractors	N°	0	0	0	0	**0**
Lost Time Accidents (LTA)	N°	49	35	37	47	**59**
Lost Time Accidents (LTA) sub-contractors	N°	33	22	11	9	**15**
LTA frequency rate		2.86	2.08	2.16	2.66	**3.34**
Calendar days lost	N°	1,897	1,726	16,122	2,134	**9,848**
LTA severity rate		0.11	0.10	0.94	0.12	**0.56**
Recordable Injuries (RI)	N°	160	146	112	148	**127**
Recordable Injuries frequency rate		9.32	8.67	6.53	8.38	**6.78**
Ratio N° of sites with no LTA/total N° of sites reporting	%	85	79	84	84	**84**
Sites OHSAS 18001 certified	%	32.0	32.8	40.0	36.6	**41.7**

DEFINITION

Umicore employee: a person belonging to Umicore's total workforce. A Umicore employee can be a full-time, part-time or temporary employee.

Sub-contractor: a person not belonging to Umicore's total workforce, providing services to Umicore in one of its premises under terms specified in a contract.

Fatal accident: a work-related accident with fatal outcome.

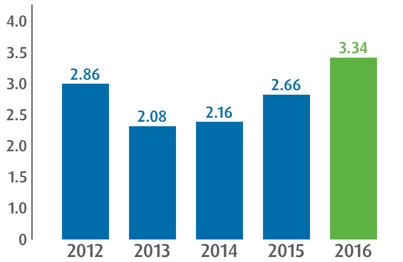
Lost time accident (LTA): a work-related injury resulting in more than one shift being lost from work.

Recordable injury (RI): a work-related injury resulting in more than one first aid treatment or in a modified working programme but excluding lost time accidents.

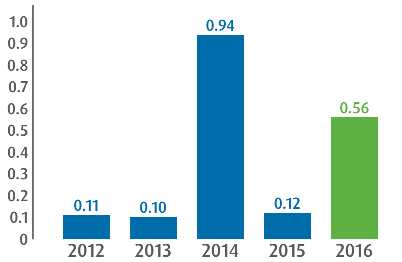
Frequency rate: number of lost time accidents per million hours worked.

Severity rate: number of lost calendar days due to a lost time accident per thousand hours worked. Accidents to and from work are not part of the scope of the safety data.

FREQUENCY RATE



SEVERITY RATE



2016 REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Lost Time Accidents (LTA)	N°	53	3	1	2	0	**59**

2016 BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	CORPORATE	UMICORE GROUP
Fatal accidents	N°	0	1	0	0	0	**1**
Lost Time Accidents (LTA)	N°	2	11	34	5	7	**59**
Calendar days lost	N°	40	7,694	1,301	469	344	**9,848**

In May 2016, a fatal accident occurred in the operations in Manaus (Energy & Surface Technologies, Brazil). An investigation concluded that the accident was the result of an employee carrying out a chemical cyanide handling and not correctly following the prescribed instructions. Umicore is reviewing all its relevant procedures and instructions related to cyanide handling and medical emergency treatment. Efforts will continue in order to ensure that all areas for improvement are identified and pursued.

In 2016, a total number of 59 lost time accidents were recorded compared to 47 in 2015. This resulted in a frequency rate of 3.34, up from 2.66 in 2015 and a severity rate 0.56. The number of reported recordable injuries decreased to 127 compared to 148 in 2015. The recordable injury frequency rate for 2016 was 6.78 compared to 8.38 in 2015.

A total of 15 lost time accidents were registered for contractors compared to 9 in 2015.

During 2016, 84% of the reporting sites operated without a lost time accident, the same number as in 2015. Forty-two percent of sites were certified using the occupational health and safety management system OHSAS 18001 compared to 37% in 2015.

Fifty-three lost time accidents, or nearly 90% of the total number of lost time accidents, occurred in Europe. Of these, 35 occurred in Belgian sites and 10 in German sites. The Americas accounted for 4 accidents while 2 accidents happened in the Asia-Pacific region.

In 2016, the business group **Catalysis** recorded 2 lost time accidents, both in the Automotive Catalysts business unit. The business unit Automotive Catalysts continues the SafeStart® programme in all its operating sites. This programme focuses on both habitual and unintentional safety behaviour. All Automotive Catalysts production plants are required to be certified against the OHSAS 18001 management system. At year-end, the site in Port Elizabeth (South Africa), Karlskoga (Sweden) and Tsukuba (Japan) had operated more than 5 years without a lost time accident or recordable injury to Umicore staff and no lost time accident to contractors on site. The sites in Burlington (Canada), Himeiji (Japan), and Suzhou (China) had operated at least 3 years without a lost time accident or recordable injury to Umicore staff and no lost time accident to contractors on site.

The business group **Energy & Surface Technologies** recorded 11 lost time accidents, of which 9 werein the business unit Cobalt & Specialty Materials and 2 in the business unit Electroplating including 1 fatal accident in the site in Manaus (Brazil). The business unit Rechargeable Battery Materials successfully invested in an effective and pragmatic in-house developed safety leadership programme based on a behaviour observation and risk intervention technique as part of its safety ACCE programme (Awareness, Competence, Compliance, Excellence). At the end of 2016, the business unit operated more than 1,200 days with no lost time accidents. The business unit Cobalt & Specialty Materials initiated a similar risk awareness programme in several of its sites. The site in Dundee (UK) has been recognised for its excellent and sustained safety performance, recording at least 10 years with no lost time accident or recordable injury to Umicore staff and no lost time accident to contractors. Beijing (China) and Tsukuba (Japan) operated at least 5 years without lost time accident and recordable injury to Umicore staff and lost time accidents to contractors. The sites in Balzers (Liechtenstein) and Quapaw (USA) operated at least 3 years without lost time accident and recordable injury to Umicore staff and lost time accident to contractors.

The business group **Recycling** had 34 lost time accidents. The business unit Precious Metal Refining recorded a disappointing safety performance with 22 lost time accidents. While several initiatives were taken to improve safety leadership and risk awareness, the business unit continues to search for a safety breakthrough and efforts will continue in order to ensure that all possible areas for improvement are identified and pursued. The business unit Jewellery & Industrial Metals, recorded 8 lost time accidents, the business unit Technical Materials had 3 lost time accidents while the business unit Platinum Engineered Materials reported 1 lost time accident.

At the end of 2016 the site in Vicenza (Italy) operated at least 5 years without a lost time accident or recordable injury to Umicore staff and no lost time accident to contractors on site.

The Discontinued operations recorded 5 lost time accidents. At the end of 2016, the site in Vilvoorde (Belgium) had achieved more than 5 years with no lost time accident or recordable injury to Umicore staff and no lost time accident to contractors on site.

An additional of 7 lost time accidents occurred in general services and corporate offices including Group Research & Development.

S8 PROCESS SAFETY

In 2016 the Group-wide process safety project made further progress by finalising the standards and guidance notes related to 'integrity of design', 'technical integrity' and 'operational integrity'. With their publication, the process safety documentation for the Group has been completed. An in-house developed software integrating all the process safety standards was made available to all sites. The use of this software facilitates the process of risk identification and the implementation of risk reduction measures. To demonstrate the software, the project team engaged in workshops with all industrial sites in all regions, which were attended by several hundreds of colleagues. Since the deployment of the process safety standards and guidelines into the local safety management systems is a key element, Group-wide leading and lagging process safety indicators have been defined for future reporting.

VALUE CHAIN STATEMENTS

Contents

Value chain statements

V1 SCOPE OF THE VALUE CHAIN STATEMENTS

The value chain and society theme focuses on potential impacts on society that we have as a company through our activities, products and services. For reporting, all entities of the group are considered. While we focus primarily on our activities directly linked to clean mobility and recycling, other initiatives targeting suppliers, customers or society in general are being tracked and appropriately reported, be it via communication such as this annual report or via other specific communication channels.

V2 CRITICAL RAW MATERIALS

Securing adequate volumes of raw materials is an essential factor in the ongoing viability of our product and service offering and in being able to achieve our Horizon 2020 growth objectives. The risks and opportunities vary considerably from one business unit to another and for this reason we have taken a decentralised approach to risk and opportunity management. We have determined to seek a competitive edge in terms of our access to critical raw materials and also in our ability to secure these raw materials in an ethical and sustainable way.

IDENTIFICATION OF THE CRITICAL RAW MATERIALS

In 2016, nine of the 11 business units carried out mapping to identify their raw materials that are critical in achieving the Horizon 2020 objectives.

Each business unit was asked to follow a 3 step process with the following elements:

- Definition of the criteria applicable to the raw material specific to the business unit's activity;
- Identification of the raw materials with a high probability of restrictions in supply, taking the selected criteria into account;
- Calculation of the impact on the Horizon 2020 objectives of the supply risk identified.

Twenty-one supply criteria, covering various aspects of sustainability, have been offered to the business units as input into the mapping. The criteria can be clustered in the following themes:

- EHS or regulatory aspects of the raw material
- Concentration in the market or restrictions in the country of origin
- Ethical aspects and potential conflicts with the code of conduct linked to the raw material
- Unavailability due to end-of-life of the mineral source
- Physical constraints at origin

MITIGATION ACTIONS

Five of the nine business units that carried out the criticality mapping have already put mitigation actions in place.

Mitigation actions can vary depending on the materials and the position of the business unit in the market. For 5 business units, the process of identification of the critical raw materials resulted already in 2016 in action plans and dedicated mitigation measures.

One example stands out in 2016 with regard to building a greater competitive edge from ethical and sustainable procurement practices. Umicore uses cobalt in materials that go into rechargeable batteries, tools, catalysts and several other applications. Over a decade ago, Umicore developed and implemented a specific approach to the sustainable procurement of cobalt. This approach – which was a first in the cobalt industry – was formalised in a Sustainable Procurement Framework for Cobalt and it covers Umicore's cobalt purchases worldwide. In 2016, Umicore went a stage further and secured third party assurance from PwC that its cobalt purchases are carried out in line with the conditions set out in the framework. This approach – another first for the industry – has received a high degree of interest from the customers of our Cobalt & Specialty Materials and Rechargeable Battery Materials business units. Major global electronics and automotive producers are keen to protect their brands from association with unethically mined raw materials. Umicore's approach provides welcomed risk mitigation in this regard. You can read more about this in our online case study.

V3 CONFLICT MINERALS

The focus on conflict minerals strengthened further in 2016 with the EU agreeing on a framework similar in scope to the US Dodd Frank Act of 2012. This requires greater disclosure by companies on whether tin, tantalum, tungsten and gold in their products have originated from the Democratic Republic of Congo or an adjoining country.

Umicore's policy regarding "Responsible global supply chain of minerals from conflict-affected and high risk areas" can be accessed here.

In 2016 Umicore continued to ensure that its operations with a production of gold are certified as conflict free. The Precious Metals Refining operations in Hoboken and Guarulhos were once again certified as "conflict-free smelters" by the London Bullion Market Association (LBMA). The Jewellery & Industrial Metals operations in Pforzheim, Vienna and Bangkok are certified as part of the Responsible Jewellery Council's (RJC) Chain of Custody programme. The Jewellery & Industrial Metals sites of Amsterdam and Pforzheim are also accredited by the LBMA as Good Delivery refiners. Although platinum does not belong to the list of conflict minerals, the business unit Jewellery & Industrial Metals has passed the audit for responsible platinum sourcing by the RJC. Both the RJC Chain of Custody and LBMA Good Delivery accreditations qualify the accredited sites for listing in the CFSI (Conflict Free Sourcing Initiative) Conflict Free Smelter List.

The Conflict Free Sourcing Initiative is used by many customers to streamline the process to guarantee conflict free products in complex supply chains. A typical example is the automotive industry where a structure has been created to assure that all individual elements of a car can be certified as not containing conflict minerals sourced from non-certified origins. This procedure is not a ban on those materials (tin, tantalum, tungsten and gold) but is a process to create transparency in the supply chain to ensure they can source conflict-free minerals. Other industries such as the electronics industry implement the same or similar processes.

More and more customers of Umicore request such a guarantee and we provide these customers with the necessary documentation to assure the conflict-free status of our products. A group has been created to streamline and optimise the efforts required for this growing customer demand to share best practices and to reduce the resource needs.

V4 INDIRECT PROCUREMENT

While the metal-bearing raw materials are purchased directly by the business units (direct procurement, see notes V2 and V3 for specific sustainable supply related actions), Umicore's purchasing and transportation teams worldwide take care of the energy and other goods and services which is referred to as indirect procurement.

SCOPE

The indicators presented are based on 2016 data from our Procurement & Transportation department covering indirect procurement for Belgium and Germany. This represents 10% of total spend.

ASSESSMENT OF SUPPLIERS

Sustainability performance of specific suppliers is assessed by EcoVadis, a well-known collaborative platform providing Supplier Sustainability Ratings.

In September 2016, the department entered into an extended partnership with EcoVadis that gives access to a greater number of EcoVadis assessments on suppliers. This model is based on a voluntary sharing of scores by the suppliers themselves. As a consequence, the 77 assessment scores were made available to the team in 2016 compared to 40 in 2015. The total number of scores received since 2011 amounts to 349.

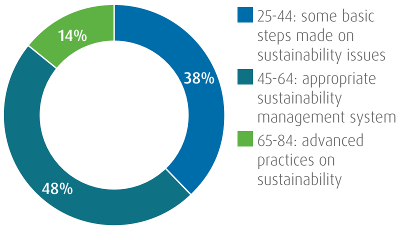
As the supplier market is maturing further, the number of scores available increases and the throughput time of the assessments becomes smaller as suppliers can build onto previous efforts done in Corporate Social Responsibility (CSR) reporting area.

AVERAGE SCORE OF SUPPLIERS BY TOPIC

In comparison to 2015 the proportion of suppliers with a score of 42 or higher, so-called suppliers "engaged in CSR", has increased. They now represents 62% of the available assessments compared to 42% in 2015. None of the scores received in 2016 is indicating a "high risk", whereas the number of "medium opportunity" suppliers is growing. This indicates that more and more suppliers are organising to create vision and transparency on CSR.

The re-assessment of Umicore Group is planned in 2017.

SUPPLIERS' SCORE IN ECOVADIS ASSESSMENT



	AVERAGE SCORE
Environmental	51.6
Labour practices	48.4
Fair business practices	43.3
Suppliers	37.8
Overall	**49.6**

More information on Umicore's relationship with suppliers can be found in the Stakeholder engagement section on page 53 and in the performance review on pages 28 and 29.

V5 PRODUCT AND SERVICES

RESOURCE EFFICIENCY

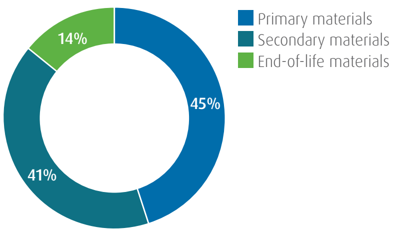
Primary raw materials: are those materials that have a direct relation to their first lifetime hereby excluding streams of by-products.

Secondary raw materials: are by-products of primary materials streams.

End-of-life materials: are those materials that have ended at least a first life cycle and will be re- processed through recycling leading to a 2nd, 3rd...life of the substance.

Incoming materials are regarded as primary by default if their origin is unknown. The collected data are expressed in terms of total tonnage of incoming material.

RESOURCE EFFICIENCY



In 2016, 55% of the materials were from end-of-life or secondary origin while 45% were of primary origin.

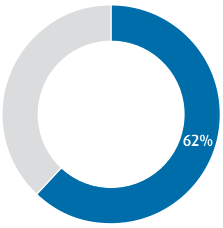
At the start of this new reporting cycle, all business units have critically reviewed the definitions and the scope of the raw materials reporting in close collaboration with EHS Corporate. This realignment of scope and interpretation of definitions, combined with the effect of the raw materials portfolio of the divested business unit Zinc Chemicals, resulted in a shift between secondary raw materials and end-of-life materials. As of 2016, the substrates used in the business unit Automotive Catalysts for the production of automotive catalysts have not been considered as a raw material anymore. This decision had a limited impact on the share of primary raw materials.

PRODUCTS AND SERVICES CONTRIBUTING TO SPECIFIC SUSTAINABILITY ASPECTS

Our primary focus in terms of sustainable products and services is to leverage those activities that provide solutions to the megatrends of clean mobility and resource scarcity. For more information please see the Value chain and society performance discussion on pages 29-30.

We have developed a new indicator to underline our focus on clean mobility and recycling. In 2016, the revenues of those activities that deliver products or services that are directly linked to one of these two megatrends was 62.0%. As we work towards our Horizon 2020 goals and bring even more focus to our business, we would expect this percentage to increase. It should be noted that many of the materials and services making up the remaining 38.0% of revenues provide answers to specific societal needs such as improved connectivity (materials for high quality glass, displays) or reduced energy consumption (materials for use in energy efficient lighting such as LEDs).

REVENUES FROM CLEAN MOBILITY AND RECYCLING



Business units continue to develop specific solutions for sustainability aspects of our products and their applications in close relationship with customers. Such initiatives tend not to be shared outside the context of the specific supplier-customer relationship in order to protect the intellectual property related to such solutions. Typical subjects dealt with in such developments are the reduction of risks related to the use of products, reduction of the hazard of products or a higher material efficiency in the delivery or the use of our products.

MANAGEMENT OF PRODUCT REGULATION

Worldwide, changes to existing product related legislation as well as the introduction of new legislation might impact our business. Although the European REACH regulation is still the most relevant one for Umicore, the Korean-REACH is gaining importance. Umicore monitors closely all changes in interpretation as well as guidance documents which might affect its REACH implementation strategy. Umicore is actively involved in industry association working groups to make sure a consistent approach is followed and that the metal specifics are understood by the regulators and the companies.

In 2016, as part of regular maintenance, 18 REACH dossiers were updated with new information on composition, uses or Chemical Safety Report. Also 12 new registrations were submitted. Some 170 dossiers still need to be submitted by June 2018 for the third phase of the EU REACH regulation. For most of them, submission dossiers are elaborated as part of the work done in the industry working group consortia.

While the regulatory landscape may shift in the future, only a few of Umicore's substances feature today on the "Candidate List" for potential REACH authorisation. The placing of a substance on the REACH "Candidate List" is designed as a first step in subjecting that substance to robust and detailed scientific evaluation of risk as a basis for its continued use or substitution if economically and technically feasible alternatives to that substance exist (Authorisation). The majority of our substances appearing on the Candidate List are "intermediates" and are, as such, not subject to the authorisation process.

Umicore further expanded its Safety Data Sheets data base. The data base now contains 4,180 products and has Safety Data Sheets available for 110 countries in 41 languages.

V6 DONATIONS

SCOPE

In total, 102 consolidated sites are included for this note.

This is 13 fewer compared to 2015, mainly because of the divestment of the business unit Zinc Chemicals. Furthermore, two commercial offices were moved to a larger nearby Umicore site.

The sites report full year data for the donations indicators.

The indicators presented are based on data from fully consolidated companies.

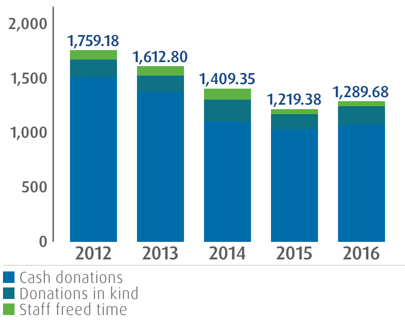
The historical numbers (2015 and before) were not restated.

GROUP DATA

	UNIT	2012	2013	2014	2015	2016
Cash donations	EUR thousand	1,514.60	1,373.82	1,103.47	1,034.91	1,078.03
Donations in kind	EUR thousand	159.98	152.27	200.88	135.11	167.47
Staff freed time	EUR thousand	84.60	86.71	104.99	49.36	44.17
Total donations	**EUR thousand**	**1,759.18**	**1,612.80**	**1,409.35**	**1,219.38**	**1,289.68**

DONATIONS

EUR thousand



Each business unit is expected to allocate an annual budget that provides sufficient donations and sponsorship support to each site's community engagement programme. By way of guidance, this budget should equate to an amount corresponding to a third of a percent of the business unit's average annual consolidated recurring EBIT (i.e. excluding associates) for the three previous years.

Donations are subdivided into cash donations, donations in kind and staff time. Group level donations are co-ordinated by a Committee reporting to the CEO.

2016 REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Total donations	EUR thousand	1,025.09	139.19	47.38	47.26	30.76	1,289.68

2016 BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	DISCONTINUED OPERATIONS	CORPORATE	UMICORE GROUP
Total donations	EUR thousand	178.27	280.77	287.93	82.34	460.36	1,289.68

In 2016, Umicore contributed a total of EUR 1,289 thousand in donations. For the business units, the total amount of EUR 829 thousand is in line with the guidance of approximately one third of one percent of each unit's average annual recurring consolidated EBIT for the past three years. Additional group level donations were made for an amount of EUR 460 thousand.

Most of the donations of the units go to charity events close to their sites, in support of the local community. However, some business unit headquarters also support charity projects on other continents. At Group level, the donations have a global reach. The main areas for Group level donations in 2016 included support for two major UNICEF educational projects in Madagascar and in India, five projects co-ordinated by Entrepreneurs for Entrepreneurs (in the Philippines, Cambodia, Democratic Republic of Congo, Ecuador, Haiti and Togo) and support for student sustainable mobility projects.

Assurance reports

pwc

STATUTORY AUDITOR'S REPORT TO THE GENERAL SHAREHOLDERS' MEETING ON THE CONSOLIDATED ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2016

In accordance with the legal requirements, we report to you on the performance of our mandate of statutory auditor. This report includes our opinion on the consolidated financial statements, as well as the required additional statement. The consolidated financial statements comprise the consolidated balance sheet as at 31 December 2016, the consolidated income statement, the consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statement of cash flow for the year then ended, and notes, comprising a summary of significant accounting policies and other explanatory information.

Report on the consolidated financial statements – Unqualified opinion

We have audited the consolidated financial statements of Umicore ("the Company") and its subsidiaries (jointly "the Group"), prepared in accordance with International Financial Reporting Standards as adopted by the European Union, and with the legal and regulatory requirements applicable in Belgium. The total of the consolidated balance sheet amounts to EUR (000) 4.145.751 and the consolidated income statement shows a profit for the year (Group share) of EUR (000) 130.724

Board of directors' responsibility for the preparation of the consolidated financial statements

The board of directors is responsible for the preparation and fair presentation of these consolidated financial statements in accordance with International Financial Reporting Standards as adopted by the European Union, and with the legal and regulatory requirements applicable in Belgium, and for such internal control as the board of directors determines, is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

Statutory auditor's responsibility

Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with International Standards on Auditing (ISAs) as endorsed in Belgium. Those standards require that we comply with ethical requirements and plan and perform the audit to obtain reasonable assurance about whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the statutory auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the statutory auditor considers internal control relevant to the Group's preparation and fair presentation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Group's internal control. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made by the board of directors, as well as evaluating the overall presentation of the consolidated financial statements.

We have obtained from the board of directors and the company's officials the explanations and information necessary for performing our audit.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Unqualified Opinion

In our opinion, the consolidated financial statements set forth on pages 90 to 165 of the Annual Report 2016 give a true and fair view of the Group's net equity and consolidated financial position as at
31 December 2016 and of its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with International Financial Reporting Standards as adopted by the European Union, and with the legal and regulatory requirements applicable in Belgium.

Report on other legal and regulatory requirements

The board of directors is responsible for the preparation and the content of the annual report on the consolidated financial statements.

In the context of our mandate and in accordance with the Belgian standard which is complementary to the International Standards on Auditing (ISAs) as applicable in Belgium, our responsibility is to verify, in all material respects, compliance with certain legal and regulatory requirements. On this basis, we provide the following additional statement which does not impact our opinion on the consolidated financial statements:

- The directors' report on the consolidated financial statements set forth on pages 1 to 89 and 166 to 204 of the Annual Report 2016 includes the information required by law, is consistent with the consolidated financial statements and does not present any material inconsistencies with the information that we became aware of during the performance of our mandate.

Sint-Stevens-Woluwe, 20 March 2017

The Statutory Auditor
PwC Bedrijfsrevisoren BCVBA
represented by

Marc Daelman*
Registered Auditor

*Marc Daelman BVBA
Board Member, represented by its fixed representative, Marc Daelman

PwC Bedrijfsrevisoren cvba, burgerlijke vennootschap met handelsvorm - PwC Reviseurs d'Entreprises scrl, société civile à forme commerciale - Financial Assurance Services
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INDEPENDENT LIMITED ASSURANCE REPORT ON THE ENVIRONMENTAL, SOCIAL AND VALUE CHAIN STATEMENTS OF THE ANNUAL REPORT 2016 OF UMICORE AND ITS SUBSIDIARIES

This report has been prepared in accordance with the terms of our engagement contract dated 30 June 2014, whereby we have been engaged to issue an independent limited assurance report in connection with the Environmental, Social and Value Chain Statements as of and for the year ended 31 December 2016 in the accompanying Annual Report 2016 of Umicore and its subsidiaries (the "Report").

Responsibility of Board of Directors

The Board of Directors of Umicore ("the Company") is responsible for the preparation of the information and data in the Environmental, Social and Value Chain Statements set forth in the Report of Umicore and its subsidiaries and the declaration that its reporting meets the requirements of the Global Reporting Initiative (GRI) Standards – Core as set out on pages 170 to 201 (the "Subject Matter Information"), in accordance with the criteria disclosed in the Environmental, Social and Value Chain Statements and with the recommendations of GRI (the "Criteria").

This responsibility includes the selection and application of appropriate methods for the preparation of the Subject Matter Information, for ensuring the reliability of the underlying information and for the use of assumptions and estimates for individual sustainability disclosures which are reasonable in the circumstances. Furthermore, the responsibility of the Board of Directors includes the design, implementation and maintenance of systems and processes relevant for the preparation of the Subject Matter Information.

Auditor's Responsibility

Our responsibility is to express an independent conclusion about the Subject Matter Information set forth in the Report based on the work we have performed. We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 "Assurance Engagements other than Audits or Reviews of Historical Financial Information". This standard requires that we comply with ethical requirements and that we plan and perform the engagement to obtain limited assurance as to whether nothing has come to our attention that causes us to believe that the Subject Matter Information is not fairly stated, in all material respects, based on the Criteria.

The objective of a limited-assurance engagement is to perform the procedures we consider necessary to provide us with sufficient appropriate evidence to support the expression of a conclusion in the negative form on the Subject Matter Information. The selection of such procedures depends on our professional judgment, including the assessment of the risks of management's assertion being materially misstated. The scope of our work comprised the following procedures:

- assessing and testing the design and functioning of the systems and processes used for data-gathering, collation, consolidation and validation, including the methods used for calculating and estimating the information and data presented in the Environmental, Social and Value Chain Statements as of and for the year ended 31 December 2016 on pages 170 to 201 of the Annual Report 2016;
- conducting interviews with responsible officers including site visits;
- inspecting internal and external documents.

We have evaluated the Subject Matter Information against the Criteria. The accuracy and completeness of the Subject Matter Information are subject to inherent limitations given their nature and the methods for determining, calculating or estimating such information. Our Limited Assurance Report should therefore be read in connection with the Criteria.

Our Independence and Quality Control

We have complied with the independence and other ethical requirements of the Code of Ethics for Professional Accountants issued by the International Ethics Standards Board for Accountants (IESBA), which is founded on fundamental principles of integrity, objectivity, professional competence and due care, confidentiality and professional behaviour. Our audit firm applies International Standard on Quality Control (ISQC) n° 1 and accordingly maintains a comprehensive system of quality control including documented policies and procedures regarding compliance with ethical requirements, professional standards and applicable legal and regulatory requirements.

Conclusion

Based on our work, as described in this Independent Limited Assurance Report, nothing has come to our attention that causes us to believe that the information and data presented in the Environmental, Social and Value Chain Statements as of and for the year ended 31 December 2016 on pages 170 to 201 of the Annual Report of Umicore and its subsidiaries, and Umicore's assertion that the report meets the requirements of GRI Standards – Core, is not fairly stated, in all material respects, in accordance with the Criteria.

Restriction on Use and Distribution of our Report

Our assurance report has been made in accordance with the terms of our engagement contract. Our report is intended solely for the use of the Company, in connection with their Environmental, Social and Value Chain Statements as of and for the year ended 31 December 2016 and should not be used for any other purpose. We do not accept, or assume responsibility to anyone else, except to the Company for our work, for this report, or for the conclusions that we have reached.

Sint-Stevens-Woluwe, 20 March 2017

PwC Bedrijfsrevisoren bcvba
represented by

Marc Daelman*
Registered auditor

*Marc Daelman BVBA
Board Member, represented by its fixed representative, Marc Daelman

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About this report

Umicore's Annual report 2016 offers a comprehensive and integrated view of Umicore's economic, financial, environmental and social performance for 2016.

The report consists of two sections – an Annual review and a statements section also available as two distinct booklets. The Annual review (first booklet, pages 1 to 51) provides an overview of Umicore and focuses on the key performance aspects of 2016 as they relate to Umicore's Horizon 2020 strategy. The statements section (second booklet, pages 52 to 204) includes a thorough description of the materiality assessment and the approach to economic, environmental and social management as well as full financial, environmental, social & governance statements and notes. All elements of the Annual report 2016 can be consulted at Umicore's on-line reporting centre at http://annualreport.umicore.com/.

AN INTEGRATED APPROACH

One of the key objectives of Umicore's Annual report has been to reflect Umicore's integrated strategic approach which combines economic, environmental and social performance targets. This report further refines the approach based on elements from the "International Integrated Reporting Framework" developed by the International Integrated Reporting Council. This involves a more complete disclosure and discussion of the material factors influencing Umicore's business and the risks and opportunities linked to the Horizon 2020 strategy.

REPORTING SCOPE

In terms of overall scope, Umicore's Annual report 2016 covers Umicore's operations for the financial/calendar year 2016 and is the first one that reports on the progress towards the Horizon 2020 objectives. The scope of all objectives and a brief description of the methodology behind all performance indicators are included in the statements section of the report. Where data is available, the performance indicators in the document are reported with a comparison base going back five years to 2012.

The economic scope of the report covers all fully consolidated operations and the financial contributions of all associate and joint venture companies. The Zinc Chemicals activities were divested in November and the economic contribution of this activity are included for ten months. The scope of the environmental and social elements of the report is limited to all fully consolidated entities except for the Zinc Chemicals activities – any divergence from this scope is explained in the relevant chapter or note in the report.

DATA

The data for the economic and financial elements of the report are collected through the company's financial management and consolidation process. The environmental and social data is collected through environmental and social data management systems and integrated into a central reporting tool, along with the economic and financial data.

ASSURANCE

This report has been independently verified by PwC Bedrijfsrevisoren/Réviseurs d'Entreprises (PwC). PwC's audit of financial information is based on full set of IFRS consolidated financial statements on which it has expressed an unqualified opinion. This full set of IFRS consolidated financial statements and the auditor's report thereon, can be found on pages 91 to 168 and page 202 of the report. The social and environmental information included in this report has been prepared on the basis of the same recognition and measurement principles that have been used to prepare the environmental and social statements that can be found on pages 170 to 201. The independent auditor's report of PwC on the social and environmental statements can be found on page 203 of the report.

This report has been prepared in accordance with the GRI Standards: Core option. A full GRI index can be found online. The Global Reporting Initiative (GRI) is a network-based organisation that pioneered the world's most widely used sustainability reporting framework. The GRI Standards, launched in October 2016, are the first global standards for sustainability reporting.

PRESENTATION & FEEDBACK

Umicore seeks to improve its reporting through a continuous process of stakeholder engagement and dialogue. The key social elements of the report are presented to the international trade unions during the joint monitoring committee in March, while the entire document is presented to shareholders at the Annual General Meeting in late April. Umicore also commits to consider all improvement points recommended by the independent auditor (PwC) in its subsequent reporting cycles. General reader feedback is encouraged through both the print and on-line versions of the report (see facing page for details). The main feedback points received from different stakeholders in the period 2011-2015 have been taken into account to prepare this report.

FINANCIAL CALENDAR[1]

25 APRIL 2017
General meeting of shareholders (financial year 2016)
Trading update Q1 2017

27 APRIL 2017
Ex-dividend trading date

2 MAY 2017
Payment date for dividend

31 JULY 2017
Half year results 2017

24 OCTOBER 2017
Trading update Q3 2017

9 FEBRUARY 2018
Full year results 2017

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LANGUAGES
This report is also available in French and Dutch.

INTERNET
This report can be downloaded from the Umicore website:
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Jean-Michel Byl, Umicore

FEEDBACK
Let us know what you think about this report.
Send an e-mail to stakeholder@umicore.com

1 Dates are subject to change. Please check the Umicore website for updates to the financial calendar.

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