umicore
materials for a better life

Powering ahead

Integrated Annual Report 2018

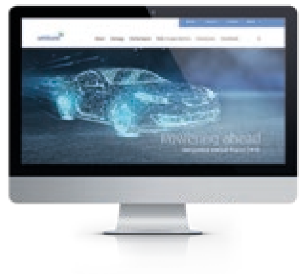
About this report

Our 2018 Annual Report consists of the following documents, which can be downloaded in pdf format:

2018 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.

2018 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, social and value chain performance data for the group.

The report is externally verified and has been prepared in accordance with the GRI Standards: Core option. Find the GRI Index on p.191.



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

VISIT ANNUALREPORT.UMICORE.COM

Front cover image: Umicore Capital Market Days - Powering Ahead 2018

Inside back cover: Employer branding advertisement

2018 Annual review

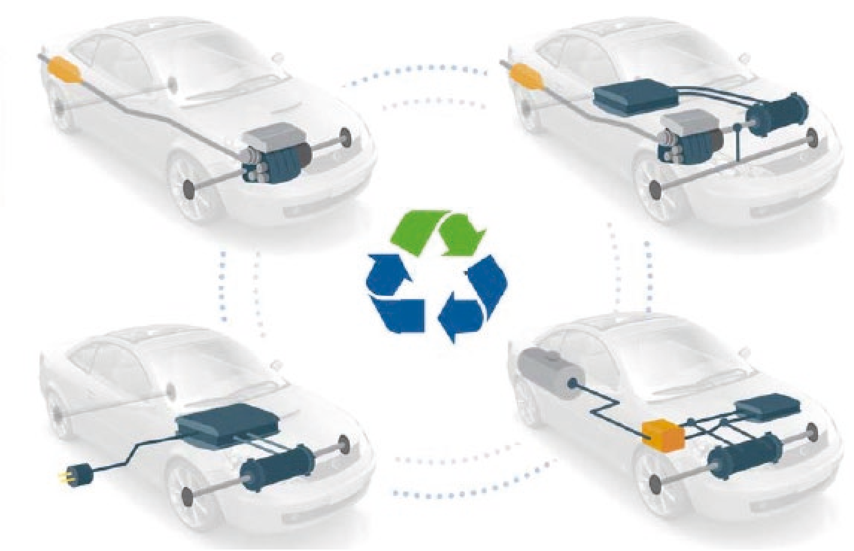
In 2018 we delivered on our strategy to become the undisputed leader in clean mobility materials and recycling, winning new business which will accelerate growth over the coming years, stepping up R&D efforts, and expanding production capacity to meet growing demand. All this was accomplished while achieving record results and reaching our original Horizon 2020 objectives two years ahead of schedule. Our unique ability to close the materials loop together with certified clean and ethical supply are at the heart of our approach to sustainability. Our ongoing growth investments, combined with a promising innovation pipeline, put us in an ideal position to address the need for cleaner mobility and the growing scarcity of materials while creating shareholder value in the short, medium and long term.

The global materials technology & metals recycling group

PROVIDING TOMORROW'S SUSTAINABLE SOLUTIONS FOR CLEAN MOBILITY AND RECYCLING

INTERNAL COMBUSTION ENGINE
Umicore provides:
Emission control catalysts

PLUG-IN HYBRID ELECTRIC VEHICLE
Umicore provides:
Battery cathode materials and emission control catalysts



FULL ELECTRIC VEHICLE
Umicore provides:
Battery cathode materials

FUEL CELLS
Umicore provides:
Electro-catalyst and battery cathode materials

Umicore is uniquely positioned in all aspects of clean mobility materials and in recycling. We provide clean-mobility solutions for all platform types and we recycle these materials when they reach the end of their useful life.

Using our metallurgy, chemistry and materials science expertise, this closed-loop business model is our powerful differentiator and it will continue to be the basis on which we carry out our business and build our strategy. .

We provide automotive catalysts to clean the exhaust gases from internal combustion engines for light-duty and heavy-duty vehicles of all fuel types, and the rechargeable battery materials and automotive catalysts that are required to power hybrid, plug-in hybrid and full electric vehicles. We also produce catalysts for fuel cell-powered vehicles and for static or industrial applications.

Umicore operates one of the world's most sophisticated precious metals recycling facility and, across our activities, we can recover 28 precious and non-ferrous metals from industrial residues, used electronic scrap, batteries, automotive and industrial catalysts, fuel cells and more. We also provide recycling services to customers to help maximize their efficiency. The recovered materials are then transformed into pure metals or new products.

We develop custom materials and ensure that processes take account of health and safety, recyclability, cost efficiency, waste reduction and energy efficiency, both in our own facilities and across the value chain.

We believe our success is linked to how we balance the economic, environmental and social impact of our operations.

Our integrated approach to sustainability is not just about minimizing the impact of our industrial operations: our commitment to ethical and responsible sourcing give us a greater competitive edge while delivering value for all.

Umicore strives to have a positive impact, enhancing quality of life through our products and services, reducing harmful vehicle emissions, giving new life to used metals, powering the cars of the future.

materials for a better life

OUR COMPLEMENTARY BUSINESS GROUPS ENABLE A MORE SUSTAINABLE WORLD

COMBINING CUTTING-EDGE TECHNOLOGIES AND RECYCLING TO GIVE NEW LIFE TO USED METALS

CATALYSIS

REDUCING HARMFUL EMISSIONS

AUTOMOTIVE CATALYSTS
We are one of the leading producers of emission control catalysts for gasoline and diesel on-road and non-road applications, power generation and industrial processes to meet environmental standards around the world.

PRECIOUS METALS CHEMISTRY
We are experts in metals-based catalysis for life-enhancing applications. Emission treatment technologies, cancer treatments, the production of fine chemicals and advanced electronics – all are made possible by our organometallic technology know-how.

ENERGY & SURFACE TECHNOLOGIES

POWERING THE FUTURE

COBALT & SPECIALTY MATERIALS
We are experts in sourcing, production and distribution of cobalt and nickel products. Our materials are at the heart of everyday products such as rechargeable batteries, tools, paints and tyres. Our recycling and refining processes, including our proprietary lithium-ion rechargeable battery recycling technology, give new life to cobalt and other metals.

RECHARGEABLE BATTERY MATERIALS
We are a pioneer in battery materials and a leading cathode material supplier for rechargeable lithium-ion batteries, giving added range and performance to electric vehicles, and longer battery life for portable electronics.

ELECTROPLATING
We are experts in developing metal-based coating products applied to printed circuit boards, jewelry and industrial components. Our precious metal electrolytes and processes are used in coatings for technical, functional and decorative applications.

ELECTRO-OPTIC MATERIALS
We are a leading supplier of material solutions for the space, optics and electronics sectors, including products for thermal imaging, wafers for space solar cells, high brightness LEDs and chemicals for fibre optics.

RECYCLING

GIVING NEW LIFE TO USED METALS

PRECIOUS METALS REFINING
We operate the world's most sophisticated precious metals recycling facility and we are experts in treating the most complex materials. Our refining and recycling technology gives used metals a new lease of life. Our processes help bring value to the circular economy.

PRECIOUS METALS MANAGEMENT
We supply and handle all precious metals, ensuring physical delivery by using both the output of our precious metals refineries and our network of industrial partners and banks. We offer our customers tailor-made solutions for delivering, hedging and trading precious metals.

JEWELRY & INDUSTRIAL METALS
We are experts in developing products and processes based on precious metals such as gold, silver and platinum. Our customers use these materials to make fine jewelry, coins, high-purity glass and industrial catalysts. We provide our customers with sustainable and responsible sourcing of these metals. and closed-loop recycling.

Horizon 2020 progress

OUR OBJECTIVES	ECONOMIC PERFORMANCE			VALUE CHAIN AND SOCIETY	
	STRENGTHEN LEADERSHIP	DOUBLE THE EARNINGS	REBALANCE PORTFOLIO	SUSTAINABLE SUPPLY	SUSTAINABLE PRODUCTS & SERVICES
WHY THEY ARE IMPORTANT	To position Umicore to thrive faced with the accelerating global megatrends of stringent emissions control, transport electrification and resource scarcity.	To secure Umicore's future success and sustainability by consistently investing in R&D to develop and market innovative products and services, and to ramp-up capacity to meet growing market demand for Umicore products and services.	To sharpen Umicore's focus on the ambitious growth initiatives in clean mobility materials and recycling.	To provide environmental and ethical sourcing benefits for comparatively scarce raw materials in order to foster sustainable success and growth.	To develop products and services that create sustainable value for our customers and society and increase resource security.
KEY PERFORMANCE INDICATORS	GROUP REVENUES ANNUAL GROWTH +17%	OBJECTIVE ACHIEVED: REBIT MORE THAN DOUBLED FROM 2014 TO 2018 2018 REBIT INCREASE +29% VS 2017	42% CATALYSIS 39% ENERGY & SURFACE TECHNOLOGIES 19% RECYCLING	ALIGNED WITH OECD DUE DILIGENCE GUIDANCE FOR RESPONSIBLE SUPPLY CHAINS OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS	72% OF TOTAL REVENUES FROM CLEAN MOBILITY AND RECYCLING
SUSTAINABLE DEVELOPMENT GOALS	11 SUSTAINABLE CITIES AND COMMUNITIES 12 RESPONSIBLE CONSUMPTION AND PRODUCTION			8 DECENT WORK AND ECONOMIC GROWTH 12 RESPONSIBLE CONSUMPTION AND PRODUCTION	

READ MORE ABOUT ECONOMIC PERFORMANCE ON PAGE 14

READ MORE ABOUT VALUE CHAIN AND SOCIETY ON PAGE 24

OUR OBJECTIVES	ECO-EFFICIENCY	GREAT PLACE TO WORK		
	EFFICIENT OPERATIONS	SAFETY	HEALTH	PEOPLE ENGAGEMENT
WHY THEY ARE IMPORTANT	To make sustainability an irrefutable competitive advantage for Umicore.	To offer a safe workplace and embed a safety culture in our workforce.	To monitor, manage and protect from exposure risks.	To ensure Umicore's status as an employer of choice in all the regions where we operate. To manage talent as a driver for reaching our desired business growth.
KEY PERFORMANCE INDICATORS	ENERGY CONSUMPTION* -29% VS 2015 *adjusted for intensity	NUMBER OF ACCIDENTS 61	EXCESS READINGS* 2.8% * based on internal target values	TOTAL EMPLOYED 10,420 RETENTION RATE 92.8%
SUSTAINABLE DEVELOPMENT GOALS	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		

OUR MATERIAL ISSUES AND STAKEHOLDER ENGAGEMENT

The Horizon 2020 strategy represents a strong focus on materially important topics for Umicore in the coming years: Economic performance, Value Chain and Society, Eco-Efficiency, and Great Place to Work.

Umicore applies a localised approach to stakeholder engagement and manages stakeholder relationships in line with our decentralised approach to unit management.

READ MORE ABOUT ECO-EFFICIENCY ON PAGE 29

READ MORE ABOUT GREAT PLACE TO WORK ON PAGE 34

READ MORE ABOUT THIS ON PAGES 63 AND 72

Umicore at a glance

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

REVENUES
€ 3,271m

R&D EXPENDITURE
6%
of revenues

RECURRING EBIT
€ 514m

RECURRING EPS
€ 1.36
per share

REVENUES BY GEOGRAPHY

- 39.4% EUROPE
- 11.2% NORTH AMERICA
- 3.8% SOUTH AMERICA
- 42.2% ASIA-PACIFIC
- 3.4% AFRICA

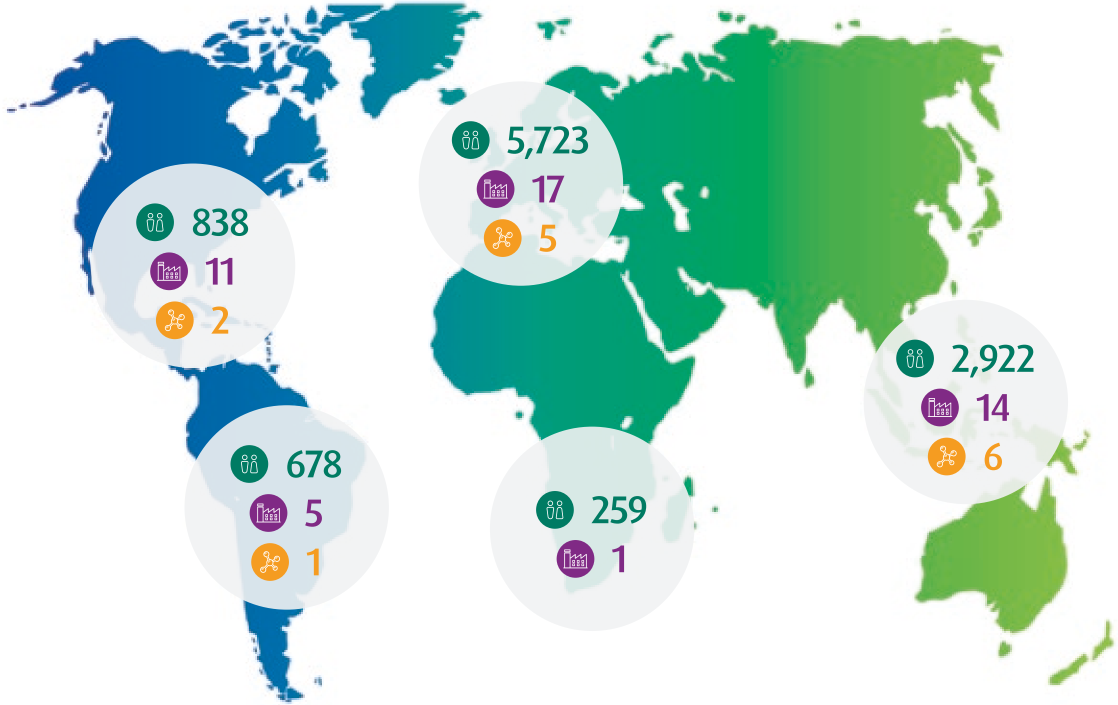
RESOURCE EFFICIENCY

- 42% PRIMARY MATERIALS
- 58% SECONDARY AND END-OF-LIFE MATERIALS

COLLEAGUES
10,420

PRODUCTION SITES
48

R&D | TECHNICAL CENTRES
14



CEO & Chairman's review

MARC GRYNBERG AND THOMAS LEYSEN LOOK BACK ON 2018 AND EVALUATE THE OUTLOOK FOR UMICORE

MARC GRYNBERG CEO
& **THOMAS LEYSEN** CHAIRMAN

Once more Umicore set a record performance in 2018, as our recent investments have started to pay off.

Recurring EBIT grew by 29% to € 514 million, reflecting strong growth in Energy & Surface Technologies. Return on Capital employed grew from 15.1% in 2017 to 15.4% in 2018, above our long-term value creation goal.

The four key objectives set in 2015 in our **Horizon 2020 strategic plan** – to become a clear leader in clean mobility materials and recycling, to double company earnings, to balance the contribution from our business groups, and to turn our leadership in sustainability into a greater competitive edge – were reached two years ahead of schedule. At our Capital Markets day in June we announced that we had identified an EBIT potential of 35% to 45% over and above our original Horizon 2020 target and we remain confident that this will be achieved in 2020.

Contribution by business group had reached a good balance in 2017, but with revenues in Energy & Surface Technologies increasing by 44% this segment overtook Catalysis in 2018 to become our largest. The main driver was Rechargeable Battery Materials which continued to outgrow the electric vehicle market, together with strong demand and supportive prices in the recycling and distribution activities of Cobalt and Specialty materials in the first half of the year. EBIT increased by 82%, reflecting scale effects following the ramp-up of new production capacity in Korea and China, completed on an accelerated schedule in 2018. Revenues in Catalysis increased by 9%, benefiting mainly from the integration of the former Haldor-Topsoe heavy duty diesel and stationary emission control catalyst activities and from higher demand for our gasoline catalyst technologies. Revenues in Recycling increased by 6% and recurring EBIT by 12%, reflecting volume growth and more supportive metal prices despite the impact of the fire in the Hoboken plant.

We continued to make **substantial investments** in 2018 with capital expenditure amounting to € 478 million, mainly relating to the completion of the investments in a greenfield site in Korea and a brownfield expansion in China for the Rechargeable Battery Materials operations. Other investments included work on improving the environmental performance of the Hoboken plant by revamping the lead refinery, resulting in an immediate and significant reduction in emissions.

In February 2018, we successfully completed a capital increase of € 881 million aimed at funding growth investments. At the end of 2018, net financial debt stood at € 861 million, corresponding to 24% of equity. Our operating **cash flows** and strong balance sheet provide ample room to fund our ambitious growth. The Board of Directors will propose a gross annual dividend of € 0.75 per share and this will be presented to the shareholders for approval at the Annual General Meeting on 25 April.

Part of turning **sustainability** into a greater competitive edge includes pursuing sustainability goals in areas such as safety and supply chain. Progress was uneven in 2018.

Despite the priority given to **safety** by management, our performance in 2018 was disappointing and we sadly had to record a tragic fatality to a contractor on our site in Arab, Alabama. The group recorded 61 lost time accidents in 2018 compared to 51 in 2017 (excluding the Building Products Unit, divested in September 2017). Over the same period the frequency rate increased from 3.01 to 3.36 and the severity rate from 0.09 to 0.1. Our efforts to improve safety performance need to be further stepped up in 2019, with specific awareness campaigns and programs aiming to change mindsets durably and to establish a dominant safety culture.

Our **eco-efficiency** is measured against our Horizon 2020 goal of performing equally well or better than in 2015, with values adjusted for activity levels. On this front, we continue to improve year-on-year despite our expansion and production ramp-up. Overall, when related to 2015 values and adjusted for production levels, metal emissions to water were down 71% compared to 2015 levels, compared with 69% in 2017, mainly thanks to decreases in Hoboken and Cheonan. Metal emissions to air were down by 46% on 2015 levels, compared with 41% in 2017, mainly thanks to the work on further reducing emissions in Hoboken. In terms of energy efficiency, our energy consumption was down 29% against 2015, compared with a 21% improvement in 2017.

Many of our efforts in 2018 to make Umicore a **great place to work** were centered on recruitment initiatives for our growing businesses. Total headcount increased to 10,420 in 2018, an increase of 7% over 2017 (9,769). Our success in hiring so many skilled people, primarily in China, Korea and Belgium, is testimony to our efforts to make Umicore an attractive place to work and to promote Umicore as a sustainable employer, supported by deployment of an Employer Branding programme. In terms of diversity, 2018 showed an increase in the proportion of women in management and senior management but decreases in women in business operations and in non-Europeans in senior management. The ambition to reach 15% of women in senior management functions by 2020 is confirmed. The seventh edition of our People Survey achieved record participation at 81%, one main outcome being to show increased confidence in our future as a company.

Umicore is so far the first and only cathode material producer to be able to offer certified materials from a clean and ethical origin to customers in the rechargeable battery value chain.

As an example of our **sustainable sourcing**, our OECD-compliant cobalt procurement framework is covered by third party assurance. We have also used our expertise in cobalt and gold supply chain due diligence to establish responsible sourcing of platinum group metals. In 2018 we also obtained LBMA certification for the sourcing of silver.

The added value of our sustainability approach is demonstrated as our closed loop model gains traction.

Massive electrification and sourcing for the catalyst or fuel cells industries are only possible by closing the loop and recycling all the power train elements when they reach end of life, both for environmental reasons and because of the scarcity of the metals required for these technologies, especially for rechargeable batteries.

The 3 **megatrends** identified as the drivers for our Horizon 2020 strategy have proven even stronger than initially expected. The adoption of **electrified vehicles** is being accelerated by the move away from diesel passenger vehicles in Europe, and demand is growing rapidly. Our broad portfolio of the highest quality, mostly customized, cathode materials, combined with the swift ramp-up of new production capacity in China and Korea and our pioneering approach to ensure sustainable supply, have enabled us to win large EV platforms. Our ongoing € 660 million investment plan will further strengthen our position to capture a significant share of EV-related growth, with greenfield production sites in China, set to start coming on stream by the end of 2019, and in Poland where construction is expected to start in spring 2019.

The trend to **cleaner mobility** is confirmed by the ever-tighter emission norms introduced in several regions, especially Europe, China and India, promising unprecedented mid- to long-term value growth in automotive catalysts, especially from our leading position in new gasoline engines requiring particulate filters and our improved position in heavy duty diesel. The emerging fuel cell business further confirms our unique ability to provide solutions for all future drivetrain technologies.

Resource scarcity is an ever-growing concern most especially for the metals needed in rechargeable batteries and we plan to upscale our battery recycling facilities so that they are ready to come on stream in the mid-2020s.

The **geo-political environment** remains volatile and we also recognize a challenging macro-economic environment impacting especially the automotive market. We remain committed to our strategic goals which we will achieve by ever stronger focus and by remaining agile with tailored solutions and the ability to ramp up new production quickly and effectively. Technology innovation remains a key to our success and our 56% increase in patent family filings, over 2017, bears witness to our increased effort and to the strength of our innovation pipeline.

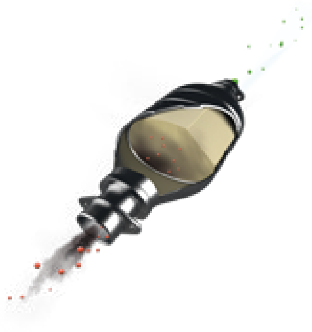
This annual report again confirms our commitment to integrated reporting. The award won by Umicore for best Belgian sustainability report in 2017 has galvanized our efforts to continuous improvement, which you will see in this year's report through the improved and unified page formatting, additional information on organization and society, together with a new section specifically dedicated to shareholders and a much-improved online presence. We hope you will find this report clear and informative.

As we close this review, we would like to express our thanks to all the stakeholders for their contribution to our success in 2018. One of the highlights of the year was the successful equity offering made in February which raised close to € 900 million, not only enabling us to realize our investment needs but also showing confidence in our strategy and positioning. While acknowledging that 2019 may be challenging in terms of the macro-economic environment, we can confirm that we see strong mid- to long-term value growth in all aspects of clean mobility and recycling.

We have reaffirmed our confidence that we will reach the potential upside above our original 2020 ambitions and we look forward to sharing our success with all stakeholders.

MARC GRYNBERG CEO
& **THOMAS LEYSEN** CHAIRMAN

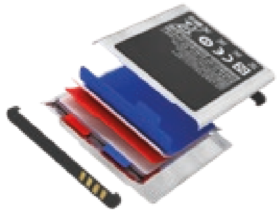
Global trends



We reduce harmful industrial and vehicle emissions to provide cleaner air

CATALYSIS

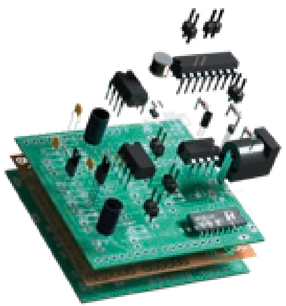
We are a technology leader in emission control catalysts for light-duty and heavy-duty vehicles and for all fuel types



We deliver clean energy storage solutions and power the vehicles and technologies of the future

ENERGY & SURFACE TECHNOLOGIES

We are an innovative leader in cathode materials for lithium-ion batteries in electrified transportation, portable electronics and energy storage



We contribute to resource stewardship by recycling metals and end-of-life products in a closed loop

RECYCLING

We are a quality leader in recycling complex waste streams containing precious metals and other valuable materials

CLEAN AIR

Automotive emission legislations and public advocacy for clean air continue to increase. In Europe and in Asia, legislators are developing clean mobility policies to reduce SOx, NOx and CO_2 emissions and strengthening emission standards to push industry to design innovative emission control systems, including catalysts and catalytic filters.

VEHICLE ELECTRIFICATION

The transport sector is the fastest growing source of global greenhouse gases, with the largest share from road transport. Electrified transport is essential to meet ambitions of reduced emissions and clean air by combining energy efficient systems with renewable energy sources. Incentives favoring electric vehicles are increasing globally.

RESOURCE SCARCITY

Developing technologies, such as increasingly powerful rechargeable batteries to reduce the environmental impacts of society, increases the demand for specialty and precious metals. Mining metals from primary sources has significant environmental impacts, including a high carbon footprint. Easy-to-mine deposits are increasingly scarce and ore bodies poorer.

Taking on the big challenges

OUR BUSINESS MODEL AND HORIZON 2020 STRATEGY ARE FOCUSED ON MAKING A DIFFERENCE IN THE WORLD'S MOST PRESSING ISSUES

Umicore is working to meet the growing demand for clean mobility and clean air. We are a leading producer of catalysts and catalytic filters used in emission abatement systems for light and heavy-duty vehicles, on-road and off-road. Our catalysts and particulate filters convert pollutant emissions into harmless gases and trap the particulate matter, enabling our customers to meet present and future environmental standards. Our products have prevented hundreds of million tonnes of harmful pollutants from being emitted into the air.

We strive to deliver environmentally friendly technologies that ensure resource efficiency and sustainability in industry's supply chain.

Umicore is working to deliver energy efficiency technologies, optimize resource use and reduce pollution. We are a leading producer of cathode materials for lithium-ion batteries, which are key in determining the power and energy density of rechargeable batteries, to maximize driving distance of electrified vehicles. Our nickel-manganese-cobalt (NMC) cathode materials are a reference in the industry. To meet growing market demand, we announced significant investments from 2017 to 2019 to further increase our production of NMC cathode materials.

We provide solutions for a cleaner and more resilient future.

Umicore fosters sustainable growth and champions its circular business model. Our Hoboken facility is the world's largest and most complex precious metals recycling operation, processing over 200 types of raw material – from mining and industrial residues to "End-of-life" materials, such as electronic scrap and spent rechargeable batteries – and recovering over 20 different metals. As part of our closed-loop business model, most of our business units recycle industrial residues from customers. Umicore is growing its capacity to cater to rising demand.

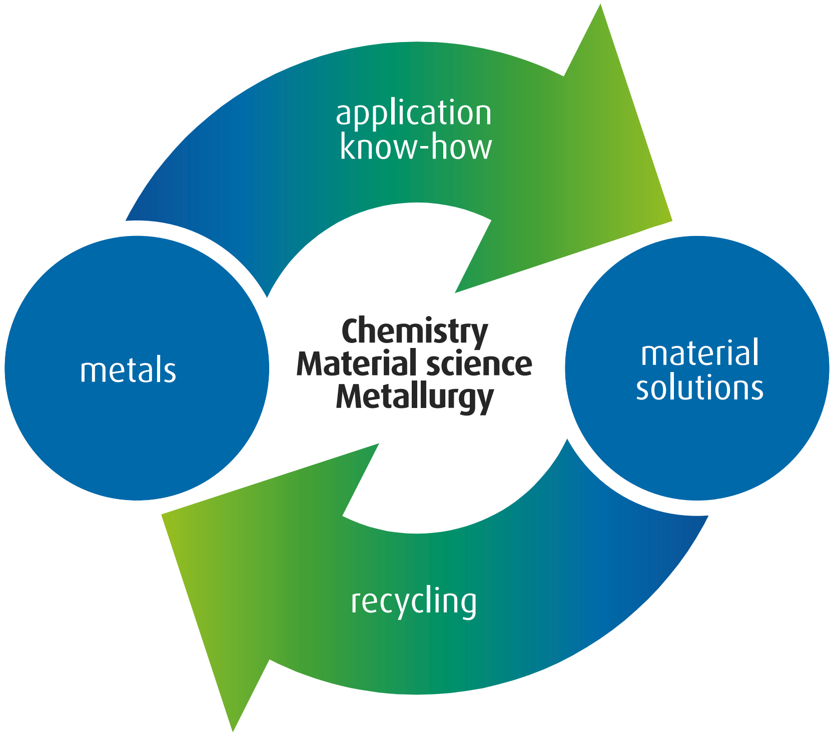
We deliver environmental and ethical sourcing benefits, and increased resource security.

Umicore is determined to be a preferred employer wherever we operate and are committed to empowering women for leadership. We are a growing business with presence in markets around the world and have won Top Employer status for our sites in Europe and Asia. We think this is because we strive to create a collaborative environment, ensuring meaningful work and career-long learning and development opportunities. This means our employees have an average length of service of 10 years, and that group-wide we have over 92.8% retention rate.

We all share the same values, we all respect one another and we are all working towards making materials for a better life.

Turning sustainability into our competitive edge

PROVIDING THE BEST TECHNOLOGICAL SOLUTIONS FOR CLEAN MOBILITY AND RECYCLING



We transform metals into functional materials and recycle them to make new materials. Our products deliver solutions for cleaner air and increased e-mobility, while we turn waste-metals into a resource. Our ethical sourcing and closed-loop approach give us a greater competitive edge.

METALS

Metals are an outstanding ingredient for sustainable materials production because they can be recycled infinitely without losing any of their chemical or physical properties. This is one of the foundations of our business model. A high volume of our metals come from recycled sources - production scraps and residues from customers and other industries, and end-of-life materials through our closed-loop services. Using our Sustainable Procurement Charter and our framework for Cobalt, we purchase the remainder of our metal supplies from sustainably and ethically vetted primary sources.

APPLICATION KNOW-HOW

We take metal and apply our expertise in metallurgy, chemistry, engineering and materials science skills, we add our product, process and market know-how and offer solutions that enable our customers to develop better, more sophisticated and safer products.

MATERIAL SOLUTIONS

Our know-how transforms metals into functional materials that are integrated into products by our customers, usually companies making products for consumer or industrial use. Our catalysis materials provide clean air and health solutions, while our battery materials give added range and performance to electric vehicles and increased battery life to portable electronics. Our materials are also inside computer motherboards, in domestic light switches and in the fiber optics and satellites that keep you connected.

RECYCLING

We run two types of recycling operations that, together, can recover 28 metals. Our precious metals recycling operation in Hoboken, Belgium, is built to recycle and refine the most complex materials and to recover a broad spectrum of metals. Our other recycling operations, in collaboration with customers, recover specific metals from production residues.

Many factors – from raw materials supply to talent retention – underpin our business model. We manage these resources and relationships for the long term.

SKILLS AND EXPERTISE

Our colleagues contribute to Umicore through their expertise and commitment. Metallurgy, chemistry, engineering and materials science skills are critically important in our key growth areas: recycling and materials for clean mobility.

We are growing in Asia and in Europe and this means a greater focus on attracting talent for positions ranging from production operators, engineers, research scientists, to commercial and administrative functions.

UMICORE TECHNOLOGY

Technology is at the core of our success. We are committed to innovation and research and development (R&D) are key for innovation-led growth. We develop a significant part of our technology using Umicore R&D findings and invest 6% of our revenues in R&D. Umicore also develops technology in with our industrial or academic partners and we protect our intellectual property with patents.

UMICORE OPERATIONS

Our operations are carried out in recycling plants, specialised chemicals and materials production facilities, offices and research centers, in 30 countries, often close to our customers to support collaboration and to meet their specific product requirements. We aim for excellence in environmental and social performance in all our operations.

We seek to minimise the impact of metal emissions, generate improved material and energy efficiency and offer a safe and healthy workplace. Operational excellence is important both in securing our license to operate and in helping to make Umicore more competitive.

MAXIMUM EFFICIENCY

Input materials such as fuels and chemicals are essential to Umicore operations and are purchased using our Sustainable Procurement Charter framework. 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 energy sourcing. For this reason, our priority is to maximise energy and auxiliary materials efficiency.

INVESTMENT & FUNDING

Investing in Umicore is an investment in producing materials for a better life – our mission – and supporting our strategy. Umicore has a proven track record of funding strategic growth initiatives from the capital generated from our own operations. Indebtedness is kept low, as we aim to retain the equivalent of an investment grade credit status.

Our closed-loop business model delivers economic, social and environmental value for all our stakeholders.

PRODUCTS & SERVICES

Our ambition is to produce materials for a better life. Umicore products can be found in applications that make day-to-day life more comfortable and contribute to a cleaner, more efficient world. We work closely with our customers to develop customized materials or processes that consider health and safety, recyclability, cost efficiency, waste reduction and energy efficiency both in our own facilities and in the value chain. We continuously search for innovative solutions for our customers and work to meet the needs of a rapidly changing and more demanding world.

THE UMICORE WAY

Umicore is committed to the principles of sustainable development. We aim for excellence in environmental and social impact and strive to offer a safe and healthy workplace. We offer solutions to global challenges: our recycling services address growing resource scarcity and reduce industrial waste and emissions. Our catalysts help reduce air pollution, while our rechargeable battery materials help make electrified transportation a reality. Umicore offers high quality employment with competitive salaries, training and development opportunities and long-term employment prospects.

Each site aims to be considered as a preferred employer locally. Umicore supports the principle of collective bargaining and signed a Global Framework Agreement on Sustainable Development with the IndustriALL Global Union.

SUPERIOR GROWTH & RETURNS

Umicore aims to generate a return on capital employed of more than 15%. One of our Horizon 2020 goals is to double our earnings, mainly through growth in recycling and materials for clean mobility. While the primary focus is on organic growth, acquisitions are also considered if they fit the strategy and can add value for shareholders.

Umicore pays out a stable or gradually increasing dividend and has a track record of returning excess cash to shareholders through share buybacks.

Driving economic performance

2020 Target

STRENGTHEN LEADERSHIP — Confirm our strong position and unique offer in clean mobility materials and recycling.

DOUBLE THE EARNINGS — Double the size of recurring EBIT compared to 2014 excluding the discontinued operations.

REBALANCE PORTFOLIO — Ensure a more balanced contribution of earnings from our 3 business groups.

KEY RISKS & OPPORTUNITIES

1. Regulatory and legal context
2. Sustainable and ethical supply
3. Technology and substitution
4. Market
5. Metal price

SEE RISKS ON PAGE 41

SUSTAINABLE DEVELOPMENT GOALS

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

CASE STUDY

Growing for Clean Mobility

Umicore has been focusing its growth investments in the areas of clean mobility and recycling to deliver on its Horizon 2020 strategy.

These investments have laid the foundations for long-term growth and are already creating value today by generating attractive returns.

Board field trip to Umicore Jiangmen, China 2018

VISIT ANNUALREPORT.UMICORE.COM

Economic review

IN 2018 WE REACHED THE HORIZON 2020 ECONOMIC PERFORMANCE TARGETS TWO YEARS AHEAD OF SCHEDULE AND REAFFIRMED THE UPSIDE POTENTIAL

€ 514m

GROUP REBIT

€ 478m

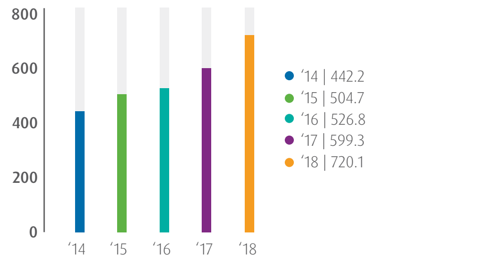
GROUP CAPEX

15.4%

ROCE

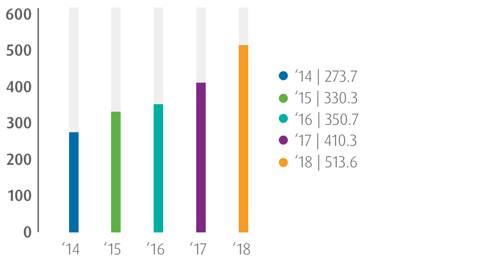
RECURRING EBITDA

Millions of Euros



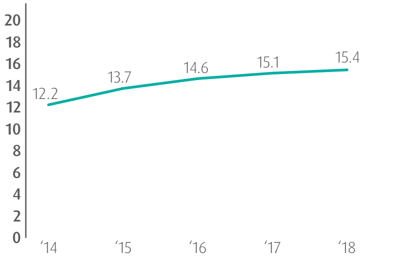
RECURRING EBIT

Millions of Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%



We have selected 3 key performance indicators (KPI) to measure our success in the execution of our Horizon 2020 growth strategy and our progress towards our longer-term targets and objectives:

- **Recurring EBITDA:** This KPI gives a clear indication on earnings and profitability, and is also a good proxy for generated operating cashflows (cashflow from operations before change in cash working capital).
- **Recurring EBIT**: As part of our Horizon 2020 strategy we had set a 2020 recurring EBIT target of doubling the 2014 figure.
- **ROCE:** We want our investments to create value by generating attractive returns and have set a Group ROCE target of 15%+.

Umicore is delivering on its strategy to be the undisputed leader in clean mobility materials and recycling, with its offering of product and process technologies, combined with its closed loop approach and sustainable supply. As part of this strategy, we have won significant new business in the latter half of 2018, which will accelerate our growth in the coming years. For instance, in Automotive Catalysts, Umicore won the largest share of the gasoline platforms requiring particulate filters in Europe and China. In Rechargeable Battery Materials Umicore continued to secure major xEV platforms with OEMs globally.

We have delivered consistent recurring EBITDA increase since 2014, the reference year for our Horizon 2020 strategy and this despite the divestments of 4 business units. In 2018, recurring EBITDA increased by 23% with growth across all three business groups.

The recurring EBIT of € 514 million in 2018 is above the original 2020 target, 2 years ahead of schedule.

Compared to the baseline of 2014, returns on capital employed have increased substantially and now apply to a much larger capital employed base, resulting in significant shareholder value creation.

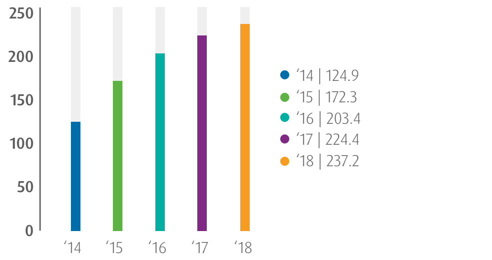
In 2018, a period marked by intense investments, our Group ROCE increased to 15.4%, above our target, with all business groups continuing to create substantial shareholder value.

In addition, we continued to step up our R&D efforts, which is reflected in a 56% increase in the number of patent family filings compared to the previous year.

CATALYSIS

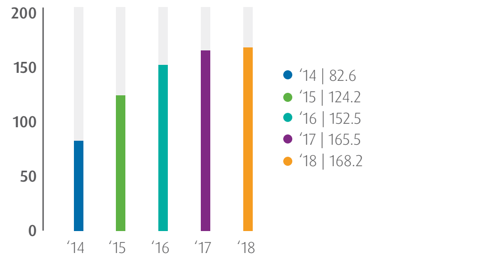
RECURRING EBITDA

Millions of Euros



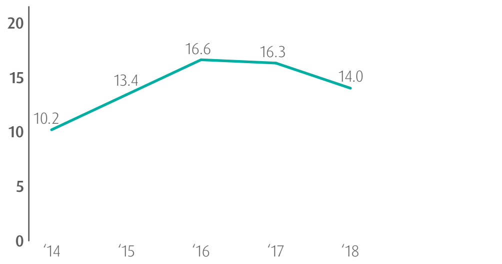
RECURRING EBIT

Millions of Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%



Revenues for Catalysis increased 9%, benefiting primarily from the integration of Haldor Topsoe's heavy-duty diesel and stationary emission control catalyst activities, as well as from higher demand for Umicore's gasoline catalyst technologies. Recurring EBIT increased 2% with volume growth partly offset by the less favorable engine mix in Europe. The ROCE for Catalysis included some anticipated temporary dilution effect owing to recent acquisitions that have yet to deliver their full synergy potential. New capacity will come on stream in China, Europe and India towards the end of 2019 to accommodate for recent platform wins compliant with new legislations.

Revenues for **Automotive Catalysts** were higher, driven by an increased contribution from the heavy-duty diesel catalyst activity and higher demand for Umicore's gasoline catalyst technologies.

Umicore has won the largest share of new gasoline platforms requiring particulate filters in Europe and China and is becoming the global leader in this segment.

Considering the growing share of gasoline engines in the mix, Umicore is best positioned to benefit from the unprecedented value growth of the car catalyst market.

Umicore recorded higher car catalyst sales volumes year on year, reflecting its strong position in gasoline applications and despite the fast-declining sales of diesel cars in Europe. Global light-duty vehicle production contracted by 1.1% in 2018 reflecting the slowdown of the Chinese and European car markets in the second half of the year.

In Europe, demand for Umicore's gasoline catalysts was strong particularly for direct injection engines, which require more complex catalyst systems under Euro 6d. To cater for this growing demand Umicore is expanding capacity at its Nowa Ruda plant in Poland. The additional production lines are due to come on stream in the second half of 2019. Revenues were impacted by the decline in diesel car production and, to a lesser extent, customer platform delays in the second half of the year caused by the introduction of the new WLTP testing regime. In North America, Umicore's revenues increased despite a declining car market. Umicore benefitted from a good platform mix, with an increased exposure to the popular SUV segment, as well as customer wins. Umicore's volumes were substantially higher in South America, in line with the recovering car market.

Umicore recorded higher revenues in China where its customers outgrew the market. This strong performance was in sharp contrast with the evolution of the Chinese car market, which contracted in the second half of the year. Moreover, Umicore has won additional awards for China 6a and b compliant platforms. To cater for these awards, Umicore is substantially increasing its catalyst production capacity in China with the new lines set to come on stream at the end of 2019.

Umicore successfully expanded its market share with Japanese OEMs globally, while in Korea, revenues were flat in a slightly declining market. Umicore outpaced the South Asian market supported by the ongoing ramp-up of production in its new facility in Thailand. In India, Umicore won new Bharat Stage 6 awards, for which new production capacity will come on stream in the course of 2019.

The heavy-duty diesel segment benefitted from the integration of Haldor Topsoe's heavy-duty diesel and stationary emission control catalyst activities.

This acquisition enabled us to broaden our technology portfolio, extend our customer base in Europe and China and expand our production footprint.

Umicore is now better positioned to capture the future growth of the global heavy-duty market, which is set to more than double in value by 2025 (compared with 2017) driven by more stringent legislation in key regions.

In **Precious Metals Chemistry**, revenues from fuel cell catalysts used in the transportation segment increased, benefiting from a first uptake of fuel cell drivetrain technology as an environmentally friendly alternative to internal combustion engines both for passenger cars and heavy-duty applications. Umicore has a complete and competitive portfolio of catalyst technologies for fuel cells and has entered into close collaboration agreements with leading OEMs for existing car platforms as well as future development programs.

In order to support the growth of our customers, we are expanding our fuel cell catalyst production capacity in Korea, as announced in December 2018. The new plant will be commissioned towards the end of 2019 and production will ramp up in 2020.

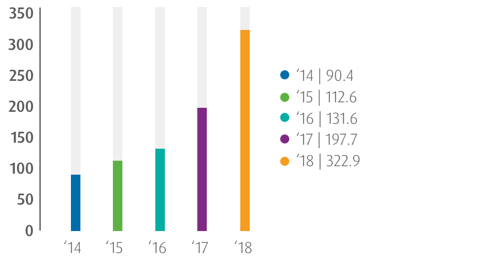
The expansion underlines Umicore's unparalleled position in clean mobility materials as the only company worldwide offering at commercial scale the full spectrum of materials technologies required to enable the transition to clean er mobility.

Alongside fuel cell catalysts, higher sales of active pharmaceutical ingredients and products used in chemical metal deposition applications contributed to the overall year-on-year growth of the business unit revenues.

ENERGY & SURFACE TECHNOLOGIES

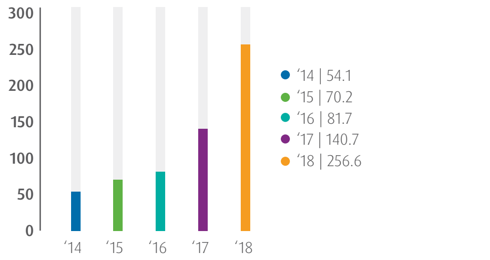
RECURRING EBITDA

Millions of Euros



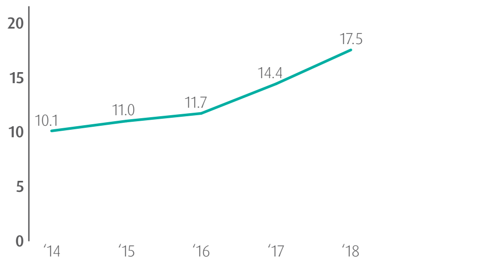
RECURRING EBIT

Millions of Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%



Revenues in Energy & Surface Technologies increased substantially (+44%), with Rechargeable Battery Materials continuing to outgrow the xEV market. The business group also benefited from strong demand and a supportive price environment in the refining and distribution activities of Cobalt & Specialty Materials in the first half of the year.

The increase in recurring EBIT was even greater (+82%), reflecting scale effects following the ramp-up of new capacity in Korea and China as part of the € 460 million investment program, which was launched in 2016. The program consisted of a combination of a brownfield expansion in China and a greenfield site in Korea and was completed in 2018 on an accelerated schedule.

ROCE for Energy & Surface Technologies was well up despite a 50% increase in capital employed year-on-year.

Revenues of Energy & Surface Technologies should increase further in 2019 on the back of continued growth in Rechargeable Battery Materials. This growth is expected to be more pronounced in the second half of the year when the first production lines will come on stream in the new plant in China.

Revenues and volumes for **Rechargeable Battery Materials** increased significantly, driven primarily by strong demand for Umicore's proprietary Cellcore® NMC (nickel manganese cobalt) cathode materials used in lithium-ion batteries for transportation applications. This growth was supported by the fast ramp-up of new production capacity both in China and Korea.

In addition, shipments of High Energy LCO (lithium cobaltite) cathode materials for batteries used in high-end portable electronics and shipments of NMC cathode materials for energy storage applications were also higher year on year.

Sales of full electric and plug-in hybrid vehicles grew by more than 60% year-on-year globally and reached 2 million vehicles in 2018.

The majority of automotive OEMs have started to expand their offering of electrified car models in anticipation of tighter CO_2 regulations coming into force in several regions.

Umicore's broad portfolio of cathode material technologies offers automotive OEMs around the world state-of-the-art solutions to achieve longer driving ranges, faster charge and low battery degradation in combination with cost optimisation. Umicore has captured a significant share of the segment growth.

Our products are present on more than 20 platforms with OEMs globally and in qualification for several large new platforms.

Umicore also has the ability to scale up production rapidly and its proprietary production lines are capable of producing the full range of NMC materials, all certified for the most stringent automotive requirements.

In order to meet the growing demand from its customers, Umicore is expanding cathode materials production capacity in Korea and China and will soon start construction of a first production facility in Europe. The swift ramp-up of the new lines in Korea and China supported rapid volume growth over the course of the year and generated scale benefits.

The construction of the greenfield site in China is progressing according to plan, with commissioning expected around mid-2019. In Nysa, Poland, the engineering work is ongoing and construction of the new cathode materials production plant is expected to start in the spring of 2019 with commissioning planned for mid-2020.

Revenues for **Cobalt & Specialty Materials** were up year-on-year. The refining, recycling and distribution activities generated a strong performance in the first half of the year due to high volume growth and favorable prices.

Market conditions became more challenging in the second half of the year, with the cobalt price in particular declining sharply after the peak levels reached in June. The product businesses recorded solid demand for nickel compounds used in the battery, plating and catalyst industries as well as carboxylates used in catalytic applications. Revenues in the tool materials activity were slightly below the strong levels of 2017.

The Energy & Surface Technologies business group includes the battery recycling activity, consistent with Umicore's closed loop approach. Umicore recorded higher activity levels at its battery recycling pilot plant and secured new contracts for the recycling of spent automotive and portable electronics batteries.

With the worldwide penetration of electrified vehicles set to increase sharply in the coming years, industrial-scale battery recycling will be vital for sustainable electric mobility.

Umicore has developed unrivalled competences and industrial capabilities to recover critical raw materials from spent batteries and battery production scrap, in a sustainable manner.

The growing scarcity of metals and increasing societal pressures to source raw materials in an ethical and environmentally sustainable manner has resulted in a growing need for increased traceability in supply chains. An increasing number of automotive OEMs are therefore looking for a closed loop approach as offered by Umicore.

The technology and research alliances, which Umicore entered with BMW and Audi in 2018, underscore the merits of Umicore's closed loop approach.

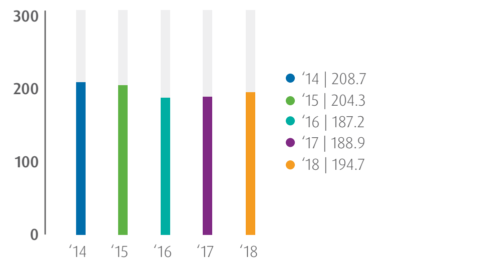
Revenues for **Electroplating** were stable. Higher revenues for decorative applications and platinised compounds used in electrocatalytic materials offset the impact of competitive pressure on precious metal-based electrolytes used in portable electronics.

Revenues for **Electro-Optic Materials** were slightly lower compared to the previous year mainly due to a smaller contribution from the substrate activities, which were impacted by subdued demand from the space photovoltaics and LED segments. Demand for germanium tetrachloride and infrared finished optics remained stable.

RECYCLING

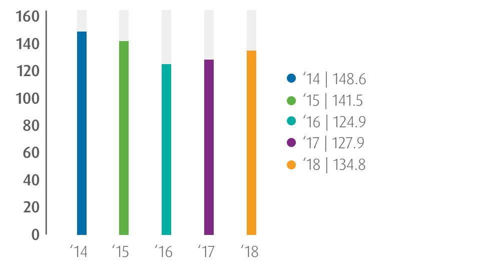
RECURRING EBITDA

Millions of Euros



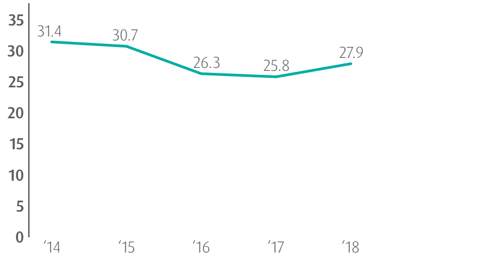
RECURRING EBIT

Millions of Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%



Excluding the impact of the sale of the European activities of Technical Materials in January 2018, revenues and recurring EBIT increased 6% and 12% respectively, reflecting the growth in processed volumes and somewhat more supportive metal prices in Precious Metals Refining.

Recycling remained a premium return business due to its unique business model and service offering. The increased ROCE in 2018 includes the effect of the divestments of the European operations of Technical Materials.

Revenues and earnings for **Precious Metals Refining** were considerably higher, primarily driven by higher processed volumes, despite the impact of the fire in the Hoboken plant on 12 September 2018, and a somewhat more supportive metal prices for certain PGMs (Platinum Group Metals) and specialty metals.

Processed volumes were higher despite the fire in the Hoboken plant. The fire occurred at one of the off-gas cleaning facilities which was shut down for clean-up and repair until mid-January 2019. While operations in other parts of the plant were unaffected, the overall throughput rate was impacted. This resulted in lower volume growth and a temporary increase in working capital at year-end. The enhanced performance of the smelter meant that its maintenance shutdown was rescheduled to early 2019, further contributing to the volume growth in 2018.

The environmental investments to revamp the lead refinery were completed in 2018 and yielded immediate and significant emissions reduction.

The supply mix was broadly unchanged. While the availability of complex industrial by-products and end-of-life materials was supportive for the ramp-up, commercial terms in some segments continued to be impacted by competitive pressure.

Excluding the impact of the divestment of the European Technical Materials, revenues for **Jewelry & Industrial Metals** remained stable. The performance of the product businesses remained strong, in particular for industrial applications, despite competitive pressure and a lower availability of silver-containing scrap which affected the refining and recycling activities. Order levels for jewelry products remained stable. The construction of the facility in China for equipment used in the special glass industry is nearing completion and will be commissioned in Q1 2019.

The earnings contribution from **Precious Metals Management** increased year-on- year, mainly as a result of favorable trading conditions for most PGMs. The demand for the physical delivery of metals was also strong, reflecting higher demand for silver and other industrial metals, and a recovery in demand for gold investment bars in the second half of 2018.

FINANCIAL REVIEW

NON-RECURRING ITEMS

Non-recurring items had a negative impact of € 14 million on EBIT for the full period. Restructuring charges accounted for € 14 million and were mainly related to the plan to end industrial activities in Guarulhos, Brazil and transfer them to the existing site in Americana. Impairments on permanently tied-up metal inventories accounted for a € 6 million charge and are largely linked to a lower cobalt price at the end of the period. These charges were partly offset by non-recurring income including the gain on the sale of the European operations of Technical Materials. The negative impact of the non-recurring items on the net result (Group share) amounted to € 9 million.

Umicore has adopted IFRS 9 Financial Instruments as of 1 January 2018 which replaces the provisions of IAS 39 on accounting and classification of financial assets and liabilities, financial instruments and hedging. Therefore, Umicore no longer applies IAS 39 and no longer reports an IAS 39 effect.

FINANCIAL RESULT AND TAXATION

Net recurring financial charges totaled € 69 million, up compared to the previous year. Net interest charges increased as the € 690 million medium- and long-term debt was drawn down for the entire period. The accelerating growth in Asia also resulted in higher funding in local currency and higher forex costs.

The recurring tax charge for the period amounted to € 107 million, increasing in line with the higher underlying operating result and corresponding to a somewhat lower recurring effective tax rate of 24.4% vs 25.7% in 2017. The total tax paid in cash over the period amounted to € 127 million.

CASHFLOWS

Cashflow from operations before changes in working capital increased to a record level of € 800 million. Most of this cash flow was used to fund a € 707 million increase in working capital.

This increase resulted from the business expansion and higher prices for certain metals, in particular in the Energy & Surface Technologies business group that accounted for more than two thirds of Umicore's working capital increase.

Capital expenditures totaled € 478 million, up from € 362 million (excluding Discontinued Operations) in 2017, with the Energy & Surface Technologies business group accounting for two thirds of this amount. The capex spending in 2019 is expected to be higher than in 2018, driven by the greenfield expansions underway in Rechargeable Battery Materials, the capacity expansions in Catalysis and the investments to be carried out during the extended shutdown in Hoboken. Acquisitions and divestments accounted for a net cash outflow of € 95 million. This includes the increase in Umicore's stake in its Chinese cathode material production entity to 90% and the acquisition of Materia's metathesis catalysts business partly offset by the proceeds from the sale of the European operations of Technical Materials, all of which took place in the first half of the year.

Dividends paid to Umicore shareholders over the period amounted to € 175 million and the net cash outflow related to the purchase of treasury shares to cover stock options and share grants was € 79 million.

FINANCIAL DEBT

Net financial debt at 31 December 2018 stood at € 861 million, up from € 840 million at the start of the year. This reflects the € 881 million net proceeds from the February capital increase and the net free cash flow from the period. The majority of the outstanding financial debt is composed of the € 690 million long-term private debt placements in Europe and the United States.

Net financial debt at the end of the period corresponded to 1.2x recurring EBITDA which leaves ample balance sheet room to execute the growth strategy.

Group shareholders' equity stood at € 2,609 million resulting in a net gearing ratio (net debt / net debt + equity) of 24.4% compared to 31% end of 2017.

Investing in Umicore

€ 0.75
GROSS DIVIDEND

€ 1.36
EARNINGS PER SHARE

TOTAL NUMBER OF ISSUED SHARES

	2018
Total shares issued as at 31 December	**246,400,000**
of which treasury shares	5,356,583
of which shares outstanding	241,043,417
Weighted average number of outstanding shares	**239,202,537**
Potential dilution due to stock option plans	2,484,056
Adjusted weighted average number of outstanding shares	241,686,593

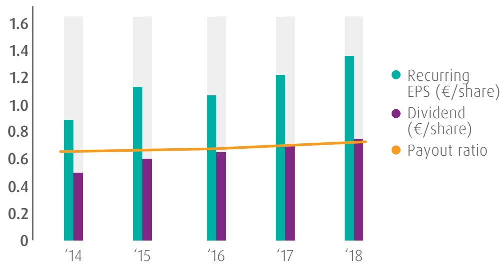
Investing in Umicore is an investment in producing materials for a better life – our mission – and supporting our strategy.

We have a strong capital structure with ample funding headroom to execute our growth strategy. Indebtedness is kept at low levels to retain the equivalent of an investment grade credit status.

THE UMICORE SHARE

Umicore shares are listed on the Euronext stock exchange. On 8 February 2018 Umicore successfully placed 22,400,000 new shares with institutional investors, resulting in net proceeds of € 881 million. On 12 February 2018, the new shares were admitted to trading on Euronext Brussels and as a result, the total number of outstanding and fully paid-up shares, and the number of voting rights, are 246,400,000.

RETURNS TO SHAREHOLDERS



Umicore bought back 1,958,988 of its own shares in 2018. During the year, 1,037,470 shares were used in the context of exercised stock options. On 31 December 2018 Umicore held 5,356,583 shares in treasury, representing 2.17% of the Group's outstanding shares.

SHAREHOLDER RETURNS

Umicore's policy is to pay a stable or gradually increasing dividend. There is no fixed pay-out ratio. The Board of Directors will propose a gross annual dividend of € 0.75 per share at the annual shareholders' meeting. Considering the interim dividend of € 0.35 per share paid out on 28 August 2018 and subject to shareholder approval, a gross amount of € 0.40 per share will be paid out on 2 May 2019.

INDICES & RATINGS

CARBON CLEAN 200
- 1st in Materials sector, 13th overall

ECPI
- EMU Ethical Equity
- World ESG Equity
- Global Megatrend 100
- Euro ESG Equity

FORUM ETHIBEL
- Sustainability Index Excellence Europe
- Sustainability Index Excellence Global
- Ethibel PIONEER

FTSE RUSSEL
- FTSE4GOOD
- FTSE Environmental Opportunities Index Series

MSCI
- MSCI BELGIUM IMI INDEX
- ACWI Sustainable Impact Index (7th)
- Global Pollution Prevention Index (1st)
- AAA ESG Rating (Leader)

VIGEO EIRIS
- Eurozone 120
- Benelux 20

CAPITAL MARKETS DAY POWERING AHEAD

SEOUL, KOREA

VISIT INVESTOR RELATIONS ONLINE

Every few years Umicore organizes Capital Markets Days to update our investors and analysts with in-depth presentations on topics relevant to Umicore's strategy. Our current Horizon 2020 growth strategy was introduced at our Capital Markets Days in 2015.

On June 6th and 7th of 2018, as Umicore passed the mid-point of the Horizon 2020 strategy, we held Capital Markets Days in Seoul, Korea under the theme "Powering Ahead".

At the event, management presented a strategic update on Horizon 2020 with a special focus on Umicore's unique position in today's and tomorrow's clean mobility materials. More than 70 investors and analysts from all over the world travelled to Seoul, and close to 200 viewers followed the webcast, reflecting increased interest from the financial community in learning about how Umicore is leading the way in clean mobility.

During the event, CEO Marc Grynberg reflected on the key milestones already achieved since the launch of Horizon 2020 and provided an update on the ever-strengthening megatrends that drive Umicore's key businesses.

Pascal Reymondet (EVP Catalysis) and Kurt Vandeputte (SVP Rechargeable Battery materials) further elaborated on Umicore's leadership position in automotive catalysts and rechargeable battery materials and how technology and environmental regulations will drive growth for their respective businesses in the coming years.

Denis Goffaux (former CTO and current EVP Energy & Surface Technologies) provided further insights on Umicore's long-term innovation roadmap in clean mobility materials and how Umicore's technological flexibility provides answers to the mixed challenges in terms of future drivetrains by covering all the technological bases.

We also invited the participants to join us on guided tours of our state-of-the-art cathode materials production plant in Cheonan and our automotive catalyst technology development center in Incheon, both near Seoul.

These visits gave the participants a unique opportunity to engage with management, and gain tangible insights by seeing how Umicore is delivering leadership in clean mobility and seeing the reality of our R&D and production assets on site.

Value chain and society

2020 Target

SUSTAINABLE SUPPLY — Secure materials supply and promote our closed loop business offer.

SUSTAINABLE PRODUCTS & SERVICES — Develop products that create sustainable value for our customers and society.

KEY RISKS & OPPORTUNITIES

1. Regulatory and legal context
2. Sustainable and ethical supply
3. Technology and substitution
4. Market
7. Climate & Environment

SEE RISKS ON PAGE 41

SUSTAINABLE DEVELOPMENT GOALS

8 DECENT WORK AND ECONOMIC GROWTH

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

CASE STUDY

Bringing the world of sustainable technologies to schools

As a technology-oriented business, Umicore has particular interest in the next generation of innovators. Stimulating scientific interest and challenging young people to think about innovation are important links in building a sustainable future.

VISIT ANNUALREPORT.UMICORE.COM

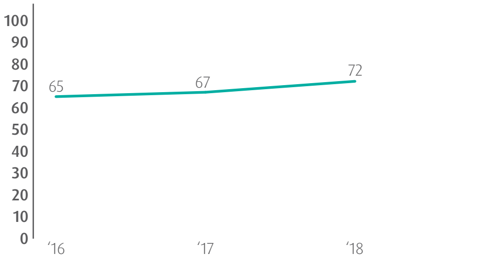
Students exploring Umicore infrared optics technology in Olen, Belgium

Value chain and society

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

CLEAN MOBILITY & RECYCLING REVENUES

%



Our success is measured in our ability to provide environmental and ethical sourcing benefits of scarce raw materials and to deliver products and services that create sustainable value for our customers and society.

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

Upstream, we have placed greater 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.

We use this long-standing and growing experience in ethical sourcing and sustainably managing raw materials to advocate for better practices.

In 2018, Umicore played a leading role in several efforts to advance industry practices, including with the Cobalt Institute, where Umicore supported the development of the Cobalt Industry Responsible Assessment Framework (CIRAF) which is a management framework for risk assessment and mitigation, aiming at ensuring responsible cobalt production and sourcing.

Within the World Economic Forum's "Global Battery Alliance", Umicore took a leading role in the circular economy working group that, in 2018, focused on finding and analyzing the gaps to close the battery loop. We also contributed to another important project within the Global Battery Alliance that aims to develop a standard for Artisanal Small-scale Mining to ensure that the cobalt extraction industry is free of child labor.

For more information on our partnerships and work with civil society, see Stakeholder Engagement p.63.

The Umicore Way is the cornerstone of everything we do at Umicore. We believe that materials have been a key element in furthering the progress of mankind, that they are at the core of today's life and will continue to be enablers for future wealth creation. We believe that metal-related materials have a vital role to play, as they can be efficiently and infinitely recycled, which makes them the basis for sustainable products and services. We want Umicore to be a leader in providing and creating material-based solutions to contribute to fundamental improvements in the quality of life. To ensure our activities are conducted in line with the Umicore Way, we have adopted policies including the Umicore Code of Conduct, Human Rights Policy, Sustainable Procurement Charter.

Umicore fully supports the United Nations Universal Declaration of Human Rights. We are committed to uphold fundamental human rights and respect those rights in conducting our operations throughout the world. Our commitment to respecting Human Rights and Working Conditions applies to all Umicore employees, all subsidiaries and joint ventures where we have operational control, and to all subcontractors working on our sites.

Our success depends on a relation of trust and professionalism with employees, commercial partners, shareholders, government authorities and the public. These principles are embedded in our Code of Conduct which sets the framework for ethical behavior and respect of the rule of law, including regarding anti-corruption and bribery.

SUSTAINABLE & ETHICAL SUPPLY

As a global materials technology and recycling group, we purchase and recycle minerals and metals for use in a wide range of products and technologies. For our operations to function, we need raw materials, transportation, energy and other goods and services. Sustainable procurement is a key driver in Umicore's Horizon 2020 aspiration to make sustainability into a competitive edge.

We have developed a Sustainable Procurement Charter based on our vision and values as outlined in the Umicore Way to reflect our commitment to sustainable development in all areas of procurement. The Charter outlines our commitment to fair dealing, transparency and communication, health and safety, and our efforts to include smaller sized and local suppliers in our procurement processes wherever possible, to support local economies where we operate.

In return, we expect our suppliers to be committed to business integrity, to promote the principles of sustainable procurement in their supply chain, to be compliant with local environmental laws and to respect international human rights law on their own sites and from their own suppliers, including to abolish child and forced labor and eliminate discrimination.

Overall, we have over 18,000 suppliers worldwide to which we paid over € 8.5 billion (including the metal content of raw materials) in 2018. Umicore's Purchasing & Transportation teams worldwide manage indirect procurement processes for energy and other goods and services (accounting for 10% of our spend) while the metal-bearing raw materials are purchased directly by the business units (accounting for 90% of our spend). In 2018, EcoVadis continued to assess indirect procurement streams for Umicore.

Securing adequate volumes of raw materials is an essential factor in our operations and service offering and in meeting our Horizon 2020 growth objectives. The risks and opportunities vary considerably from one business unit to another, and consequently we have a decentralized approach to risk and opportunity management.

In some regions of the world, exploitation of natural resources is used to fund conflict or can be associated with violations of human rights. We are determined to ethically and sustainably secure a competitive edge in our approach to critical raw materials. Considering our commitment to support and contribute to the respect of human rights and ethics in business, we have developed a Responsible Supply Chains Of Minerals From Conflict-Affected And High-Risk Areas policy based on the current OECD Guidelines.

Umicore continues to ensure that gold production operations are certified as conflict-free.

Our customers are increasingly requesting such guarantees and we provide them with the necessary documentation to assure the conflict-free status of our products. Our Hoboken and Guarulhos sites are certified as conflict-free smelters by the London Bullion Market Association (LBMA), and in 2018, our Hoboken smelter successfully passed the LBMA voluntary conflict-free silver audit of its 2017 activities. For more information on our many accreditations see Statements, note V3.

For over a century Umicore has been a world leader in cobalt products, used in many applications, from tooling to rechargeable batteries for electric cars. Some reserves of cobalt ore are in regions fraught with challenges, giving rise to unethical practices such as forced labor, poor health and safety conditions, child labor and corruption.

For us, sustainable procurement of cobalt means considering economic, environmental and social performance of our suppliers, and the social and environmental impact of the supply, in the purchase of materials. To source cobalt, we have implemented a pioneering Sustainable Procurement Framework for Cobalt and were the first to obtain external validation for its approach in this area.

To ensure the traceability of materials in our supply chain we carry out detailed research and risk assessments of our suppliers. This includes visiting plants, screening policies and procedures and, if required, developing improvement programs. In 2018, Umicore again performed due diligence activities for all its purchased cobalt materials used in rechargeable batteries, tools, catalysts and several other applications.

Umicore obtained, for the fourth year in a row, third-party assurance from PwC that our 2018 cobalt purchases are carried out in-line with the conditions set out in the Framework. Our yearly reporting on due diligence activities is not only unique to Umicore, but also reflects a high level of pro-active transparency. The share of cobalt from recycled origin was also reviewed by PwC as part of the assurance process and was 6.1% for 2018.

The compliance report for 2018 can be downloaded at https://www.umicore.com/en/cases/sustainable-procurement-framework-for-cobalt/

SUSTAINABLE PRODUCTS AND SERVICES

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 activities that provide solutions to the megatrends of clean mobility and resource scarcity.

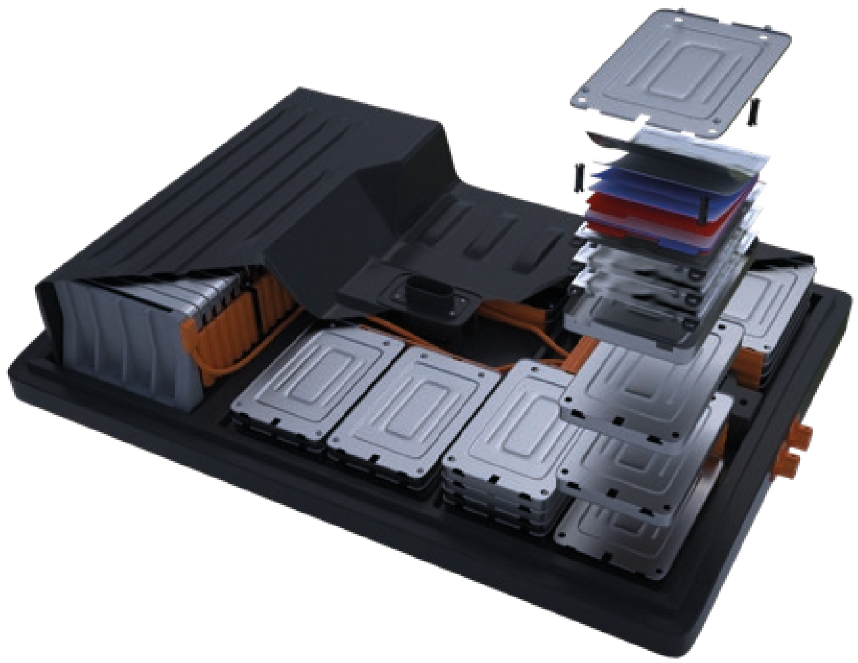
We developed an indicator to underline our focus on clean mobility and recycling. In 2018, the revenues from activities that deliver products or services that are directly linked to one of these megatrends was 71.8% of 2018 Group revenues, up from 67.2% in 2017. The increase is the result of higher activity both in recycling and clean mobility. As we work towards the Horizon 2020 goals, we expect this percentage to continue to increase.

Many of the materials and services making up the remaining 28.2% 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).

We develop specific sustainability solutions for our products and their applications by working closely with customers.

Typically, these developments focus on reducing product risks and hazards and increasing material efficiency in the delivery or the use of our products.

See more about our efforts in this area, including our approach to international regulatory compliance (i.e. REACH) see Statements, note V5.



Exploded view of battery pack used in electric vehicles

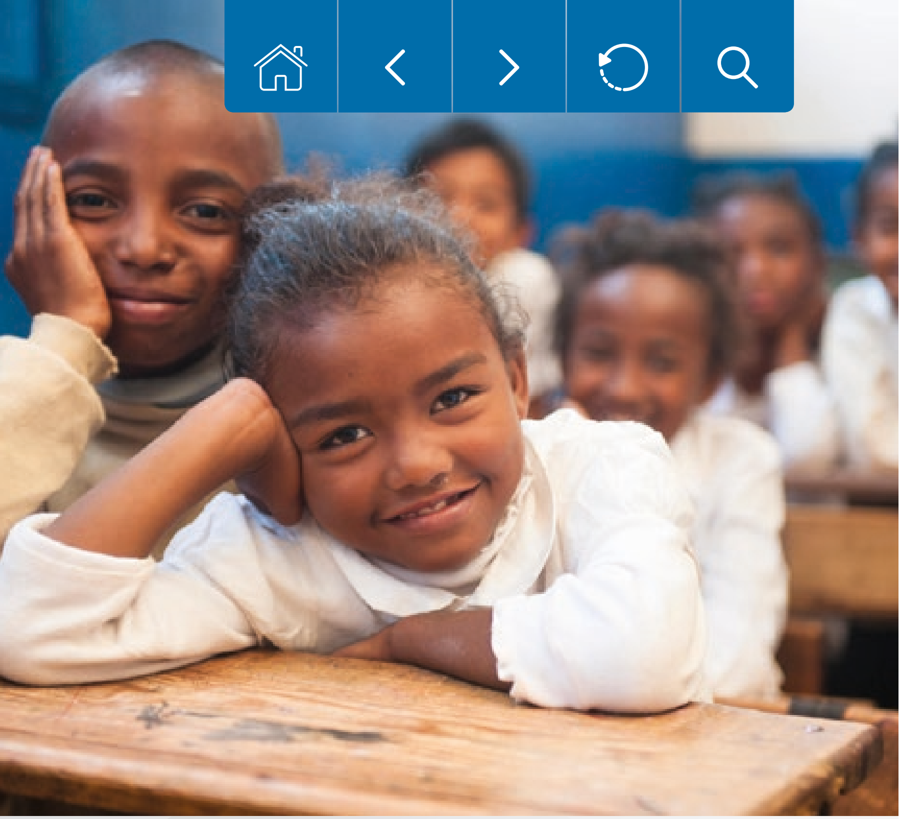
At Umicore Rechargeable Battery Materials we provide our customers with the best cathode active material, which leads to greater mobility and a reliable source of energy.

1 in 5 Li-ion batteries ever produced for portable electronics contains Umicore materials. Our materials are also used in the automotive industry to reduce CO_2 emissions and increase driving range.

Our integrated business model allows us to control our product from the receipt of raw material, over the precursor, up to the final cathode active material.

Umicore offers an environmentally responsible and commercially attractive recycling solution for the products we put on the market. Our unique Closed Loop illustrates our passion and commitment to the environment.

VISIT UMICORE.COM/INDUSTRIES



Giving back to society

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Umicore seeks to contribute to the well-being of the communities in which it operates and to be a responsible corporation and good corporate neighbor.

In this context, Umicore supports several causes both financially and by making time and talent available.

Umicore channels resources to sponsorships and donations with each business unit expected to allocate an annual donations budget based on an internal framework that promotes stable and longer-term commitments, irrespective of the wider economic environment.

Umicore believes that by empowering Umicore sites for local sponsorship and donation initiatives, it will make a positive difference in the communities in which it operates, beyond the direct benefits generated by employment and local taxes. Umicore's support may include contributions in kind and releasing staff to work on community-related projects.

While sites determine the specific focus of their own initiatives, the general focus is on supporting and promoting a strong social fabric in the community around the site, with priority given to educational initiatives.

Educational initiatives are particularly relevant for Umicore as a technology-oriented business and provide an excellent way of engaging with young people in the community and reinforcing links between Umicore and its neighborhood.

At corporate level, the emphasis is on projects with an international scope. Priority is given to initiatives with a clear educational component and that link with sustainable development (social, environmental and/or technological).

PARTNERING FOR IMPACT

Quality education for all is one of the main objectives of UNICEF, with which Umicore has had a long-term partnership since 2011, committing to 2 specific child-education projects in India and Madagascar. Despite impressive achievements and tireless work, big efforts are still needed to ensure that every child has access to quality education in both countries. UNICEF is doing a remarkable job by acting in the field, hand in hand with local authorities. Our partnership translates into very concrete actions such as the construction of schools or the improvement of education systems.

In addition, Umicore is a founding member of Entrepreneurs pour Entrepreneurs/ Ondernemers voor Ondernemers which pairs corporate donors with development charities that focus on promoting entrepreneurship in the developing world. Over the years, Umicore and Entrepreneurs for Entrepreneurs have supported work in Bolivia, Cambodia, Congo, Ecuador, Haiti, Mali, Togo and more.

Umicore also aims to contribute to disaster relief wherever it may be needed, with a long-term and stable commitment through partnerships with UNICEF and Doctors without Borders/ Médecins sans Frontières.

These combined efforts around the globe support us in our ambition to be a responsible company and to give back to society.

Eco-efficiency

2020 Target

EFFICIENT OPERATIONS

Increase value through efficient use of metals, energy and other inputs.

KEY RISKS & OPPORTUNITIES

- ❶ Regulatory and legal context
- ❸ Technology and substitution
- ❼ Climate & Environment

SEE RISKS ON PAGE 41

CASE STUDY

Innovation for a Sustainable Future

Umicore plays a key role in transitioning to a low-carbon future as our products deliver solutions for cleaner air and increased e-mobility, while we turn waste metals into a resource.

In line with our Horizon 2020 strategy, we focus our research and development efforts on technologies that address the key global challenges of clean air, electrified transport and resource scarcity.

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Umicore Employees in Rayong, Thailand

Eco-efficiency

WE AIM TO OPTIMISE THE SUSTAINABILITY PERFORMANCE OF OUR OWN OPERATIONS, FOCUSING ON ENERGY EFFICIENCY

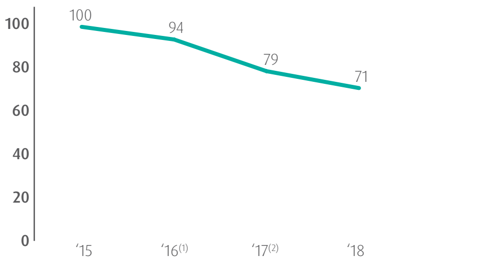
- 29%
ENERGY CONSUMPTION

- 46%
METAL EMISSIONS TO AIR

- 71%
METAL EMISSIONS TO WATER

NORMALIZED ENERGY CONSUMPTION

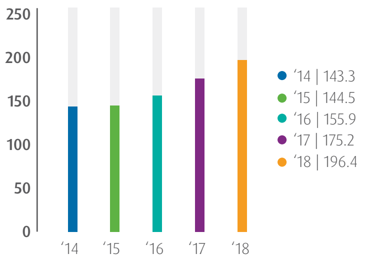
%



(1) and (2) see note E4 in Environmental Statements

R&D EXPENDITURE

Millions of Euros



Our success is measured in our ability to make sustainability a competitive advantage by being increasingly energy and material efficient compared with our 2015 baseline.

As part of our commitment to sustainability, we take into account the environmental impact of our operations, and strive to continuously improve our environmental performance, implement risk management strategies based on valid data and sound science, actively participate in the management and remediation of risks that are the result of historical operations and facilitate and encourage responsible design, use, re-use, recycling and disposal of our products.

As a materials technology company, we aim to drive an even more efficient use of metals, energy and other inputs in our operations to balance environmental and economic factors and work to increase closed-loop relationships with our customers.

Umicore is a world leader in the eco-efficient recycling and refining of precious metal bearing materials such as by-products from other non-ferrous industries, consumer and industrial recyclable product. Our eco-efficient process entails maximizing both the physical recycling of materials and the revenue obtained, while minimizing the associated environmental burden and total cost. We recover and sell precious, special, secondary and base metals and our closed-loop business model maximizes material re-use.

This ambition to address increasing global resource scarcity and achieve material efficiency is an important factor in our strategy. In 2018, despite an ongoing expansion and capacity ramp-up requiring additional primary raw materials, we still secured over half our materials supply from non-primary sources: 58% of the materials we used were from end-of-life or secondary origin, while 42% were of primary origin.

In our Horizon 2020 strategy, we defined energy efficiency and metal emissions reduction as key eco-efficiency performance indicators. We pursue eco-efficiency initiatives to generate compelling value and a competitive edge through reduced costs, minimizing our carbon footprint and strengthening our license to operate. In addition, we believe that it is equally important to continuously monitor, control and report our performance in relation to other environmental aspects.

This year, we have included new content on our Research, Development and Innovation efforts. We are consistently investing in research to innovate in clean mobility and sustainability. Umicore prioritizes R&D to support our Horizon 2020 ambitions by focusing on the development of innovative solutions for materials and processes. Our ability to create a pipeline for these innovations and solutions is an important component of our long-term eco-efficiency performance.

ENERGY EFFICIENCY

Umicore plays a key role in the transition to a low-carbon society.

We produce rechargeable battery materials for EVs, catalysts for reducing transport and industrial emissions, and contribute to resource stewardship by recycling metals and end-of-life products in a closed loop. In our own operations, we are committed to achieving further energy efficiency compared to our 2015 levels.

Energy consumption is continually monitored and regulated at all sites. The bigger contributors are additionally encouraged to develop energy efficiency projects and are required to report on them.

In 2018, 28 sites accounted for 95% of the Group's energy consumption with a total of 42 energy efficiency projects implemented over the course of the year. By the end of the year, Umicore had achieved a 29% reduction in energy consumption compared to the 2015 baseline, correcting for production intensity. This result is the combination of improvements in productivity and the implementation of energy efficiency projects.

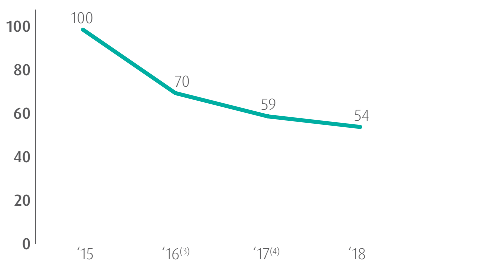
Several Umicore sites have implemented the ISO 50001 energy efficiency standard and the two largest sites in Belgium have been part of the energy efficiency covenant with the Flemish government since 2004.

Due to added capacity and higher activity levels across several sites in our Rechargeable Battery Materials activities, Recycling activities and new Automotive Catalysts acquisitions, the total market-based CO_2e emissions increased 21% in comparison with 2017.

METAL EMISSION REDUCTION

TO AIR

%



(3) and (4) see note E2 in Environmental Statements

METAL EMISSIONS

We monitor and take steps to reduce the impact of metals emissions on the environment – both to water and air. Each of the different metals that we emit has a specific level of potential toxicity for the environment and human health. For this reason, we focus on reducing the impact of our emissions.

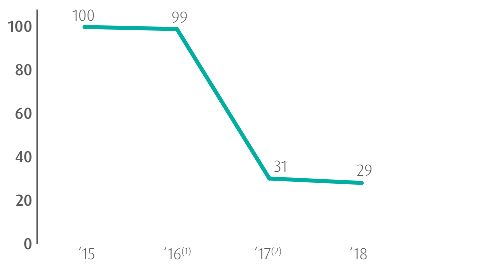
The aim for 2020 is to reduce metal emissions impacts while considering growing volumes of production. Reporting focuses on sites that contribute to 95% of the emissions expressed in impact and given their activity level. Monitoring continues on all sites.

Over 95% of the impact of metal emissions to water and air is the result of production activities on 10 or fewer sites, confirming that most of our sites do not have a significant metal emissions impact.

METAL EMISSION REDUCTION

TO WATER

%



(1) and (2) see note E2 in Environmental Statements

Compared to 2015, after correction for activity levels, the impact of emissions to water in 2018 fell by 71%, largely due to the increased efficiency of the wastewater treatment facility at our Hoboken site.

Regarding impact of metal emissions to air, considering activity levels, we achieved a reduction of 46% in 2018 compared to 2015, mainly due to improved filtration, reduction in load in a few sites and process efficiency with a focus on metals with high impact.

For more, see Statements, note E2.

STEWARDSHIP

Umicore is a global company with a global footprint. In terms of our products and services, we are uniquely positioned to address global megatrends namely the need for cleaner air and resource stewardship, and environmental performance and safety are at the heart of our process designs.

Umicore continues to provide advanced emission control and battery material technologies while advocating for a ramp-up of clean energy and clean mobility technologies. We also emphasize the links between a Circular Economy and responsible sourcing, resource efficiency, waste management and high-quality recycling. We believe that we turn sustainability into a greater competitive edge through our unique business model and our commitment to ethical and responsible sourcing.

Part of our commitment to sustainability, as stated in The Umicore Way, is to take into account the environmental impact of our operations with growing and expanding capacity. Many factors are considered in choosing to build new sites or to expand existing sites. Our new site in Nysa, Poland, for example, was selected for its vicinity to our European customers (providing reduced transport impact of our products) and a skilled technical workforce, as well as low-carbon electricity supply. The Nysa site will make use of windmills, hydro-energy and photovoltaics.

Active participation in the management and remediation of risks from operations is an integral part of the Umicore Way. Our proactive program for assessing and remediating, where necessary, soil and groundwater contamination progresses tirelessly year-on-year.

Umicore employees at our site in Pilar, Argentina.

PROCESS WATER EFFICIENCY: UMICORE ARGENTINA CLOSED THE LOOP FOR COOLING WATER

In January 2018, our Precious Metals Chemistry site in Pilar, Argentina completed the construction of a closed loop system for the site's cooling water.

Previously, water at the site was drawn directly from an underground well and fed directly to condensers and thermoregulators, as well as two 90m3 storage tanks, which in turn pumped water to cool other condensers and machinery. All the water was discharged directly after use. As production began to grow, so did the water requirements, and the site considered replacing the well pump to increase the flow.

Instead, a collaborative project team bringing together Umicore teams from Argentina, Brazil and Germany worked to create a closed loop for cooling water in Pilar. By closing the water loop and adding a new cooling tower and 2 new chillers, the plant now has a continuous supply of cooling water while significantly reducing water use and discharge.

Thanks to the new closed loop for cooling water, our Pilar site reduced water use over 97.8% year on year (from 226,000 m^3 in 2017, down to 4,800 m^3 in 2018).

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Research, Development & Innovation

As a materials technology company, our future success and sustainability depend on our ability to develop and market innovative products and services. We strive to meet the needs of a rapidly changing world and continuously search for new solutions for our customers. We dedicate our research and development (R&D) to solving some of the world's largest societal challenges in the areas of clean mobility and clean air, resource scarcity and sustainability.

Technology is at the core of our success.

From production and process technology to deep knowledge of metallurgy and materials science, a significant part of our technology is delivered using Umicore R&D findings. Umicore also develops technology in collaboration with industrial or academic partners and, where appropriate, we protect our intellectual property with patents.

We have prioritized our R&D programs to support our Horizon 2020 ambitions with a focus on the development of innovative material and process solutions. Every year, the Executive Committee identifies innovation projects ("Top 10") in product and process developments which are key to achieving future growth ambitions.

We are working to meet growing demand by consistently investing in research for clean mobility and to secure future success and sustainability through innovation. Umicore's technology roadmap includes programs covering short-, mid- and long-term research horizons for cathode and composite anode materials and for solid state technologies, also including innovative production processes.

Our work focuses on improved catalyst materials for gasoline and diesel vehicles to meet increasingly stringent regulations. For battery materials, current work includes silicon-based anode materials, cathode materials for Li-ion and solid-state batteries and fuel cell catalysts.

In 2018, Umicore invested € 196 million in R&D, € 21 million more than in 2017, driven by a higher level of R&D in Catalysis and in Energy & Surface Technologies. The R&D spend represented 6% of revenues and capitalized development costs accounted for € 20 million. Intensified R&D efforts resulted in a 56% increase in the number of patent family filings compared to 2017.

The higher R&D expenditure in Catalysis was mainly associated with new product developments to help customers meet upcoming emission regulations in Europe and China, which require a broader range of more technologically advanced automotive catalysts such as gasoline particulate filters and NOx abatement systems.

R&D efforts in Energy & Surface Technologies were primarily driven by programs aimed at developing new product technologies to deliver higher energy density, faster charging times and lower costs.

In our refining and recycling activities, new metallurgical processes to further reduce CO_2 footprint and waste streams are under development. Process flows based on recycling streams such as spent automotive catalysts and end-of-life batteries are being addressed.

We are committed to technology innovation to maintain our competitive lead with an R&D organization fit to deliver our future growth.

Great place to work

SUSTAINABLE DEVELOPMENT GOALS

3 GOOD HEALTH AND WELL-BEING

5 GENDER EQUALITY

8 DECENT WORK AND ECONOMIC GROWTH

2020 Target

HEALTH	Become a zero-accident workplace.
SAFETY	Reduce employee exposure to specific metals.
PEOPLE ENGAGEMENT	Further improve people engagement with specific focus on talent attraction & retention, diversity management and employability.

KEY RISKS & OPPORTUNITIES

6 Talent attraction and retention

SEE RISKS ON PAGE 41

CASE STUDY

Introducing the Umicore Awards

The Umicore Awards were launched as a new global initiative to reward and recognize high-performing teams and individuals who make a real and discernible impact on our business success.

This recognition program was designed to celebrate and strengthen the winning culture that defines our organization in every area, at every level. and strengthen the winning culture that defines our organization in every area, at every level.

VISIT ANNUALREPORT.UMICORE.COM

2018 Umicore award-winner In-Sik Choi

Great place to work

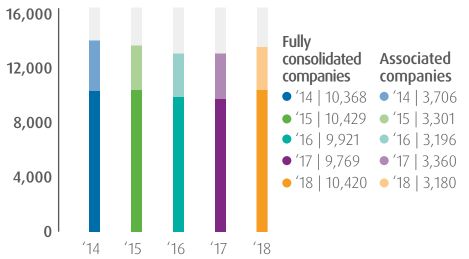
THE LONG-TERM SUCCESS OF UMICORE DEPENDS ON OUR BEING A SAFE, HEALTHY AND ENGAGING PLACE TO WORK

10,420
GROUP EMPLOYEES

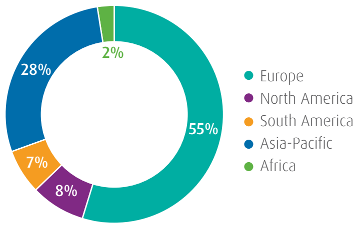
92.8%
RETENTION RATE

TOTAL WORKFORCE

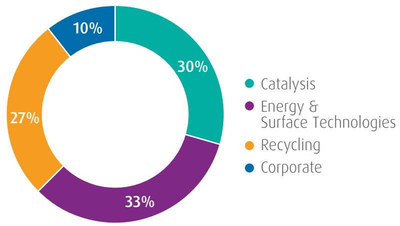
N°



WORKFORCE BY REGION



WORKFORCE BY BUSINESS GROUP



Our success is measured in our ability to offer a safe workplace and embed a safety culture in our workforce, to monitor, manage and protect our employees from exposure risks, to ensure Umicore's status as an employer of choice in all the regions where we operate and to manage talent as a driver for reaching our desired business growth.

We are proud of our position as a pioneer and world leader in materials technology and sustainability, but in an industry as disruptive as ours, we know we need to keep innovating, challenging ourselves and growing, both as a company and as an employer.

We strive to create an environment in which all our employees can succeed, and which encourages innovation, thrives on collaboration, rewards contribution and provides every employee with the opportunity to develop.

The varying ambitions and interests of our colleagues and new recruits enrich Umicore with new outlooks and new ways of working together which build our competitive advantage.

Our values and mutual respect remain consistent as we all work towards the same vision: to create materials for a better life.

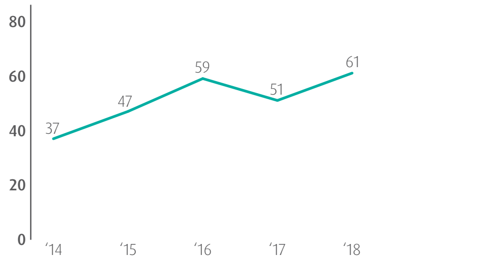
Umicore has a truly global profile, with operations on every major continent. There are 10, 420 employees currently working at Umicore, across 48 production sites, 14 research & development centers as well as in supporting offices including our global headquarters in Brussels.

Our Horizon 2020 strategy is designed to consider the evolution of Umicore, the labor market and societal expectations. Our objectives are centered on health and safety, talent management, diversity and employability –aspects that will have the greatest impact on reaching Horizon 2020 goals.

Despite competitive markets we are making strides in talent management, diversity and employee engagement. We continue to pursue and our challenging goals of eliminating lost-time accidents and occupational-related ill-health and we continue to seek new ways to engage colleagues by promoting safety and wellbeing in the workplace.

HEALTH & SAFETY

LOST TIME ACCIDENTS

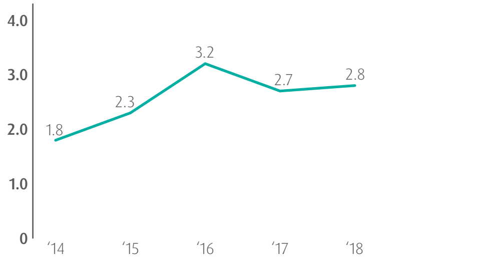


ZERO ACCIDENTS

One of Umicore's Horizon 2020 environmental and social objectives is to aim to be a great place to work, with all business units expected to contribute. Priorities include driving towards zero accidents and reaching the occupational metals exposure target of zero excess readings.

The safety of our people is a key priority for management. Nevertheless, the safety performance in 2018 was disappointing. The Group recorded 61 lost time accidents in 2018 compared to 51 in 2017 (excluding the Building Products business unit, which was divested in September 2017). The frequency rate was 3.36 and the severity rate was 0.10 (compared to 3.01 and 0.09 respectively in 2017 – excluding Building Products).

EXPOSURE RATIO 'ALL BIOMARKERS AGGREGATED'



Our efforts to improve safety performance will be further stepped up in 2019, with awareness campaigns and specific programs aimed at changing mindset and creating a more prominent safety culture.

Process safety became a structural Group EHS management activity in 2017 through full integration into the EHS compliance audit program. A dedicated 3-day HAZOP leader training has increased process safety knowledge throughout our organization. In 2018, process safety activities focused on executing process risk assessment studies. At year end, over half the production processes had received specific process hazard and risk assessments compliant to Umicore standards. A detailed timeline for completion of the remaining studies over the coming years gives priority to processes with high risk profiles.

OCCUPATIONAL EXPOSURE

Umicore makes continuous efforts to eliminate occupational-related health issues and to promote wellbeing in the workplace. The main occupational health risks are related to exposure to hazardous substances and physical hazards (mainly noise).

Umicore is leading the industry by setting voluntary, science-based targets for potentially hazardous exposure that are more stringent than legal requirements, where they exist.

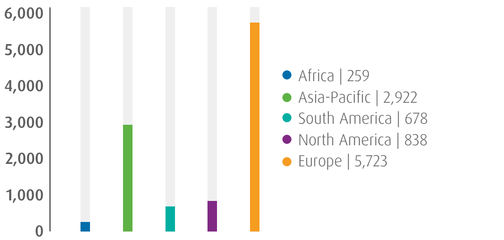
All employees with a potential workplace exposure to any of the target metals (arsenic, cadmium, cobalt, indium, nickel, lead and platinum salts) or other metals are monitored by an occupational health program. The Horizon 2020 objective for occupational exposure is to reduce to zero the number of individual 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 on specific sites.

In 2018, a total of 6,939 biological samples were taken from employees with occupational exposure to at least one of the metals mentioned above (platinum salts excluded). 195 readings showed a result in excess of the internal target value, bringing the total excess rate to 2.8%, comparable to 2.7% in 2017. All occupationally exposed employees are regularly monitored by an occupational health physician.

TALENT MANAGEMENT

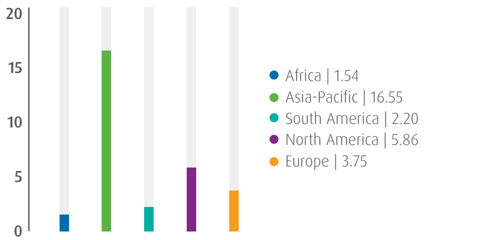
WORKFORCE BY REGION

N°



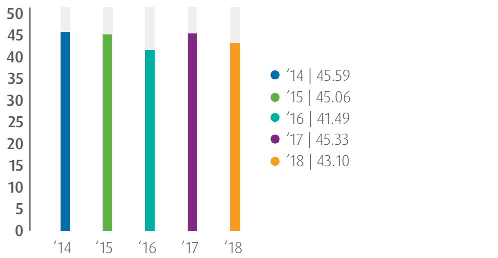
VOLUNTARY LEAVERS RATIO BY REGION

%



AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE

HOURS/EMPLOYEE



Talent management involves finding and retaining the right people at all levels of the organization and in a wide variety of functions, including equipment operators, laboratory analysts, office staff and production engineers. For Umicore the main drivers are linked to the Horizon 2020 growth ambitions in the sectors and regions where we are active.

The number of employees in fully consolidated companies increased to 10,420 at the end of 2018 from 9,769 in 2017, in line with Umicore's growth trajectory and primarily reflecting new hires in China and Korea. The recruitment of new colleagues in these regions, which are characterized by significant competition for talent, shows that Umicore is an attractive employer with wide recognition of its pioneering role in sustainability and in offering solutions to societal problems. New colleagues were also recruited in Belgium for R&D and in the Hoboken plant.

Significant regional differences in turnover rates continue, with Asia Pacific reporting the highest turnover rate at 16.55%, and South America (2.20%) and Africa (1.54%) the lowest. The high turnover rate in Asia Pacific is not unique to Umicore and is due to the highly competitive and fluid labor market in the region. In recent years the voluntary leavers rate increased, with about 39% occurring during the first 6 months of employment. Both these factors are more pronounced in our newer Asia Pacific sites which have seen significant growth, further underlining the challenge in attracting and retaining the right people in these areas.

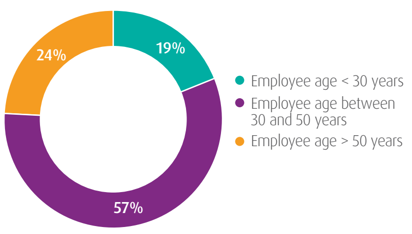
Significantly, Umicore can attract, develop and retain high caliber leaders by offering attractive and challenging leadership roles, supported by suitable development opportunities.

Umicore provides managers with a training curriculum aligned across all regions and promotes career development using an internal online vacancies tool, promoting greater internal mobility. Training at Umicore encompasses traditional classroom-type modules, e-learning, and in-service instruction.

In 2018, the average training hours per employee reached 43.10 hours, a slight decrease from 2017. Data show that managers' training hours (37.59 hours) are lower than for other employees (42.94 hours).

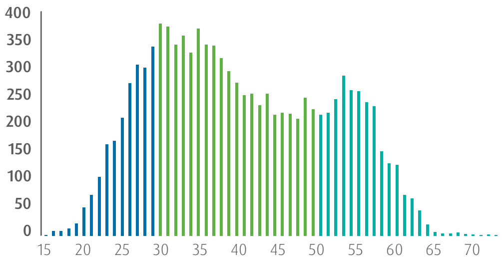
DIVERSITY

WORKFORCE AGE SPLIT



WORKFORCE AGE DISTRIBUTION(1)

N°



(1) Employees under 18 are trainees, apprentices or interns. See note S4 on our commitment against child labor.

WOMEN AT UMICORE

%

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

Umicore developed a group policy on diversity to support an inclusive work culture that offers equal opportunities, leading to a high level of employee engagement for all employees, irrespective of their diverse backgrounds. Diversity includes gender, religion, race, national or ethnic origin, cultural background, social group, disability, sexual orientation, marital status, age or political opinion.

We are especially seeking broader cultural representation in its management teams. Currently, 17.91% of the top management positions in Umicore are filled by non-Europeans, a slight decrease from 2017.

Considering that 60.6% of our revenues are generated outside Europe and our growing global footprint, we decided to act to ensure that non-Europeans are better represented in our senior management. Our efforts continue, as a better balance in this regard will enable us to make business decisions that are better aligned with the markets we serve.

Umicore employees span 71 nationalities, and in 2018, we counted 37 nationalities among our new hires.

Women are underrepresented at senior management level at Umicore. While this can be partly ascribed to the fact that chemical companies tend to attract fewer women (only 21.3% of Umicore's total workforce is female), more needs to be done to improve the career prospects for talented women within Umicore.

Women in management roles have steadily increased from 18.65% in 2010 to 22.98%. in 2018, while women in 'business operations' management functions slightly decreased from 15.55% in 2017 to 15.08% in 2018. These functions tend to provide the most candidates for all senior leadership positions. Women in senior management increased from 6.77% in 2017 to 9.7% in 2018. We have set the ambition to reach 15% of women in senior management functions by 2020.

The Coaching Circles training program for female managers in Belgium offers a combination of mentoring, coaching, training and networking. This program was developed by the Focus on Women platform, in support of Umicore's diversity and inclusion policy with the purpose of making women more aware of their capacities and stimulating them to take their career actively into their own hands. In 2018, 17 managers participated in the program.

EMPLOYEE ENGAGEMENT

As part of Horizon 2020, People Engagement is high on Umicore’s agenda. We are convinced that engaged and effective employees are key to our success. The people survey is an important tool that we use for measuring progress and to define specific action plans to achieve our goal. In spring this year, we conducted the seventh edition of our People Survey. The survey offers colleagues the opportunity to express themselves freely and give their opinion on a range of important topics associated with their work and Umicore.

The questionnaire is simpler and more efficient than in previous years. Umicore continues to guarantee 100% privacy, as completed questionnaires were processed by external supplier Korn Ferry.

Overall participation was at the very high level of 81%, with highest participation in Asia Pacific (93%), South America (89%) and North America (85%), reflecting the success of the online approach and most of all an increasing level of engagement.

Our overall average is now for the first time above the Chemical Industry norm and even approaching the High Performing norm, with clear progress made in several areas since our last survey in 2014.

One of the strongest trends is increased confidence in our future as a company.

The survey also demonstrated that our Employer Brand Pillars are truly representative of the daily reality of Umicore. One of the general trends that emerged was the different pattern of responses depending on age group and we need to examine carefully how best to take account of all aspirations.

The breakdown of local results was shared with the teams on each site which are meant to lead to local action plans. One first approach has been the long-awaited launch of our new intranet tool, Umicore Connect, and Umicore will gradually achieve greater benefit from the digital workplace in general during 2019.

Umicore Electro-Optic Materials employees in Olen, Belgium.

The 2014 People Survey revealed progress on several fronts in Electro-Optic Materials’ (EOM) business unit, except in collaboration. To address this, the iTeam program was launched to strengthen team collaboration. Through strong focus on communication and a bottom-up approach, EOM scored top class results on all dimensions surveyed in 2018. Building on this success, EOM launched a follow up platform, ‘Let’s connect’, through which all employees are connected to the EOM strategy by translating business, customers, people and environmental targets and results to the shop floor.

Working at Umicore

VISIT UMICORE.COM/CAREERS

We aim to lead the way for both our customers and our employees.

We strive to create a collaborative environment and a culture of shared ideas, developing expertise and advancing careers, working together on technologies that will benefit future generations and setting new standards in one of the world's most dynamic and disruptive industries.

In our state-of-the-art production processes technical operators, production supervisors and engineers use their know-how and ideas to benefit future generations. Our support teams play a critical role in supporting the business growth by making sure our decisions are commercially viable, enhancing our reputation, building new customer relationships or finding the right people who can build on what we have already achieved.

Managers at Umicore work on projects that are as exciting as they are challenging. R&D experts develop the technologies that address issues from clean mobility to resource scarcity.

We seek to ensure career-long learning and development opportunities for our employees and to promote the transferability of skills and knowledge across Umicore.

The Junior Management Programme (JUMP) is offered to a selected group of junior managers using a "twin-coaching" format, bringing together two participants from different regions and business units, but within the same function family, to develop international thinking, shadow best practices and provide exposure to other business units.

Leading for Excellence (L4E) is offered to a selected group of managers in the Asia Pacific region to drive performance in the region by fostering collaboration and engagement across sites and sharpening leadership skills.

Entrepreneurs for Tomorrow (E4T) is offered to a selected group of mid- to senior managers to develop corporate culture with highly competent managers and promote cross-functional integration within Umicore.

The Strategic Leadership Programme is offered to a selected group of senior managers, organised in collaboration with INSEAD. Participants move from exploration of the economic 'macro-environment', through doing business in Asia, to the challenges of creating an agile strategy and an aligned organisation, and developing their personal leadership style.

People 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 support in the transition from employee to retiree.

"Top 100 Best Business Company" Korea

top EMPLOYER BELGIUM 2018 CERTIFIED EXCELLENCE IN EMPLOYEE CONDITIONS

Managing risk effectively

WE TAKE A BALANCED APPROACH TO MANAGING RISK AND SEIZING OPPORTUNITIES TO DELIVER ON OUR STRATEGIC GOALS

	1	2	3	4	5	6	7
RISK & OPPORTUNITY	REGULATORY & LEGAL CONTEXT	SUSTAINABLE & ETHICAL SUPPLY	TECHNOLOGY & SUBSTITUTION	MARKET	METAL PRICE	TALENT ATTRACTION & RETENTION	CLIMATE & ENVIRONMENT
STRATEGIC FOCUS AREA	ECONOMIC PERFORMANCE VALUE CHAIN AND SOCIETY ECO-EFFICIENCY	ECONOMIC PERFORMANCE VALUE CHAIN AND SOCIETY	ECONOMIC PERFORMANCE VALUE CHAIN AND SOCIETY ECO-EFFICIENCY	ECONOMIC PERFORMANCE VALUE CHAIN AND SOCIETY	ECONOMIC PERFORMANCE	GREAT PLACE TO WORK	VALUE CHAIN AND SOCIETY ECO-EFFICIENCY
CHANGE IN RISK PROFILE	↑	↑	→	→	→	↑	↑
CHANGE IN OPPORTUNITY PROFILE	↑	↑	↑	↑	→	↑	↑
MORE INFORMATION	READ MORE ON PAGE 44	READ MORE ON PAGE 45	READ MORE ON PAGE 46	READ MORE ON PAGE 47	READ MORE ON PAGE 48	READ MORE ON PAGE 49	READ MORE ON PAGE 50

Key: ↑ increase → no change

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.

BUSINESS UNITS

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

Detail each risk on an "uncertainty sheet" outlining potential impact, likelihood, status of management action or mitigation, and ownership

Report bottom up to the Executive Committee member responsible for that business unit

EXECUTIVE COMMITTEE MEMBER

Identify, evaluate and mitigate risks

EXECUTIVE COMMITTEE

Successfully exploit business opportunities

Assess market conditions, competitor positioning, technology developments or regulatory changes against the business strategy execution

Manage and mitigate possible business risks

BOARD OF DIRECTORS

Assesses the risk profile of the company within the context of the Company strategy and external factors

Ensure adequate risk management and internal control processes are in place

AUDIT COMMITTEE (ON BEHALF OF THE BOARD)

Monitor and review internal control and risk management system, investigating specific aspects on an ongoing basis

EXTERNAL AUDIT

Independent assurance

Each business unit operates in an environment which carries specific growth expectations and differing degrees of market and technological uncertainty that could impact strategic objectives. As such, the primary source of risk and opportunity identification lies within the business units.

Similarly, 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 our ability to achieve our 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 organization 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.

Out of the 12 control cycles, 2 cycles (financial closing and reporting, human resources) were assessed during 2018 by the 100 control entities currently in scope. Risk assessments and actions taken by local management to mitigate potential internal control weaknesses identified through prior assessments are monitored continuously. The Internal Audit department reviews 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 changes in the regulatory environment in the countries or regions where 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 a potentially uneven competitive environment.

IP and IP protection-related matters impact technology-driven businesses.

CHANGE IN CONTEXT

Worldwide, changes to existing product-related legislation and the introduction of new legislation might impact our business. Although the European REACH regulation is still the most relevant for Umicore, Korean-REACH is gaining importance. For more information, see Statements, note V5.

The trend towards more stringent emission legislation and targets continued, while new measures on vehicle emissions push industry to innovate in emission control system design, including catalysts and catalytic filters and increase the demand for electric vehicles.

Increasing trade regulations in 2018's geopolitical context continue to be a factor in Umicore's global footprint.

MEASURES TAKEN BY UMICORE

To ensure ongoing compliance with environmental legislation on our industrial sites, Umicore has a well-established EHS compliance audit program and constantly monitors changes in legal requirements where we operate. For more information, see Statements, note E8.

Umicore continues to play an active role in informing European legislators of various emission control technologies for both diesel and gasoline powered vehicles, to help legislators make informed decisions about future emission and testing norms.

Umicore continues to ensure its ability to meet the surging demand for cathode materials for rechargeable batteries used in electrified transportation. Our investment program to expand production capacity of cathode materials in China and Korea is on track.

Umicore successfully achieved the third and last REACH registration deadline in May 2018. In total we have submitted 216 registrations for this deadline, including 112 previous submissions. Registration of additional substances continues to be needed due to new business developments.

Umicore has submitted 4 registrations for the Korean REACH regulation for the June 2018 deadline for priority chemical substances and has submitted 2 new substance registrations. Another 3 registrations are ongoing.

We monitor that our products have the freedom to operate and proactively manage our patent portfolio.

Umicore trade compliance closely follows and responds to global trade conditions.

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 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 social challenges. Trading in precious metals and minerals can be used to finance armed conflict, cause human rights abuses, draw upon forced or child labor and support corruption and money laundering. We ensure that procurement of minerals from conflict-affected and high-risk areas is in line with Umicore's values, while providing an advantage to our customers.

CHANGE IN CONTEXT

Existing and upcoming laws aiming to drive the responsible sourcing of conflict minerals (tin, tantalum, tungsten and gold), has increased the visibility and concern on the conditions around conflict mineral sourcing in public discourse

MEASURES TAKEN BY UMICORE

Umicore has implemented policies and measures covering human rights, the right for workers to organize, collective bargaining, equal opportunities and non-discrimination, banning of child labor, banning of forced labor, consistent with International Labour Organisation (ILO) standards. These commitments are supported through a Global Framework Agreement on Sustainable Development with IndustriALL Global Union.

In addition to existing policies and charters such as the Umicore Code of Conduct, Human Rights Policy and Sustainable Procurement Charter, Umicore also has a specific policy for "Responsible global supply chain of minerals from conflict-affected and high-risk areas".

In 2018, Umicore again received third-party validation for the application of its Sustainable Procurement Framework for Cobalt, which is aligned with the OECD 'Due Diligence Guidance for Responsible Supply Chains from Conflict-Affected and High-Risk Areas'.

Because Umicore is already compliant on conflict and high-risk mineral regulations, our sustainable supply chain has become an even greater competitive advantage.

We use our long-standing and growing experience in sustainable sourcing to advocate for more responsible sourcing. To read more about some of our advocacy work, see Stakeholder Engagement p. 63.

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 for their products should those of Umicore not provide this optimum balance. The risk is especially present in businesses producing materials containing expensive metals (especially those with historically volatile pricing characteristics).

CHANGE IN CONTEXT

Trends in rechargeable battery materials for automotive applications have underscored that NMC materials with increasing nickel content are the technology of choice for customers in current and upcoming electrified vehicle platforms. Besides the focus on high performing battery materials, novel processes are being developed to decrease cost and environmental impact across the entire battery value chain.

In vehicle emission control, regulatory debates have reinforced the need to have a broad spectrum of technologies available for both gasoline and diesel applications.

MEASURES TAKEN BY UMICORE

Every year, the Executive Committee identifies innovation projects ("Top 10") which are key to achieving Horizon 2020 (and beyond) growth ambitions and cover product and process developments. A selection of these projects is reviewed during the year either through dedicated technology reviews or as part of strategic business reviews.

Previous years' R&D investments have brought great success and created a space to shift R&D positioning. Umicore invested selectively in new fields relevant to core activities in 2018. Overall spend was equivalent to 6.1% of revenues.

Umicore patents disruptive technologies. In 2018, Umicore registered 75 new patent families.

For more information on Umicore's approach to managing its innovation and technology portfolio see Statements, page 73.

4 MARKET

STRATEGIC FOCUS AREA

ECONOMIC PERFORMANCE

VALUE CHAIN AND SOCIETY

CHANGE IN RISK PROFILE

Change in perimeter
(see Change in context)

CHANGE IN OPPORTUNITY PROFILE

Increase

POTENTIAL IMPACT

The main industries served by Umicore are automotive (clean mobility materials, recycling), consumer electronics (rechargeable battery materials, recycling, coating and electroplating solutions) and non-ferrous metal mining and refining industries (recycling activities). Umicore is sensitive to any major growth or global reduction in activity levels or market disruptions in these industries.

CHANGE IN CONTEXT

The global economic outlook started on a positive note in the first half of 2018, supported by solid growth in global manufacturing and trade. Trade and consumer confidence began to decline over the summer owing to geo-political and trade tensions, uncertainty about Brexit, and tariff implementations.

After modest growth in the first half of 2018, the global automotive industry started to contract in the second half, with a slowdown in the Chinese and European car markets. It is anticipated that demand in the automotive sector will continue to be impacted by the less favorable macro-economic environment witnessed in the beginning of 2019.

Although the short-term outlook is anticipated to be more subdued demand in key regions, more stringent vehicle emission legislation coming into force on major markets in the coming years is expected to provide a substantial longer-term uplift.

The risk profile of Umicore reflects growing exposure to the automotive industry and to Asia, in both cases driven by the fast-growing sales of cathode materials for use in electrified vehicles.

With its broad portfolio of cathode material technologies certified for the most stringent automotive requirements, its industrial-scale production capabilities and its qualifications on more than 20 platforms, Umicore should continue to benefit disproportionally from the accelerating penetration of electrified vehicles.

In the consumer electronics sector, demand for cathode materials for rechargeable batteries is sensitive to the macro-economic environment. Our broad portfolio of other products used in consumer electronics tends to compensate for market fluctuations.

In recycling our process remains unique, giving a stable outlook in this high-value market.

MEASURES TAKEN BY UMICORE

Umicore is delivering on its growth strategy and is becoming the undisputed leader in clean mobility materials and recycling. As a result, Umicore delivered another set of record results in 2018 and reached its Horizon 2020 targets two years ahead of schedule. Umicore won significant additional business in the second half of 2018 which will further accelerate its growth in the coming years.

The Executive Committee undertook a review of potentially disruptive market and technology trends in automotive and discussed its findings with the Board of Directors.

In recycling a continuous program of new investments aims to optimize future performance and to enhance environmental performance.

5 METAL PRICE

STRATEGIC FOCUS AREA

ECONOMIC PERFORMANCE

CHANGE IN RISK PROFILE

Change in perimeter
(see Change in context)

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. These risks relate mainly to the impact that metal prices have on the surplus metals recovered from materials supplied for recycling, and concern platinum, palladium, rhodium, gold, silver and a wide range of base and specialty metals. For some metals quoted on futures markets, Umicore hedges a proportion of its forward metal exposure to cover part of the future price risks.

Umicore also faces transactional price risks on metals. The majority of its metal-based transactions use global metal market references. If the underlying metal price were constant, the price Umicore pays for the metal contained in the raw materials purchased would be transferred 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 time raw materials are purchased (when the metal is "priced in") and the time the products are sold (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.

The accelerating growth in battery materials is rapidly increasing the exposure to specific related metals such as cobalt or nickel. Increasing volumes, the vulnerability to the associated price volatility and in the case of certain metals such as cobalt the absence of a liquid paper forward market result in increased metal risks.

For more information on the structural risk and on the transactional and inventory risk related to the metal prices, see Statements, note F3.

CHANGE IN CONTEXT

Prices for precious metals strengthened in 2018. Prices for gold, palladium and rhodium increased, while silver and platinum prices faced a volatile environment in which gains were often completely offset by subsequent losses, leaving a small increase over the full year cycle.

The continued rapid growth in battery materials substantially increased the global demand and use of specific metals such as cobalt or nickel. In the case of cobalt, higher demand and perceived supply scarcity resulted in a significant market price hike in the first six months. Newly commissioned supply and a more moderate global demand expectation resulted in a price correction over the second half of the year. Umicore was thus confronted with significant cobalt price volatility in 2018.

MEASURES TAKEN BY UMICORE

Over the course of 2018, Umicore entered into forward contracts securing a portion of its structural price exposure for certain precious metals and base metals in 2019 and 2020, thereby increasing earnings predictability.

For cobalt, Umicore's transactional hedging policy aims to match to a maximum extent the pricing in and pricing out of the contracted metal. Such physical back-to-back hedging in 2018 allowed to manage transactional risks related to cobalt in a volatile market.

6 TALENT ATTRACTION AND RETENTION

STRATEGIC FOCUS AREA

GREAT PLACE TO WORK

CHANGE IN RISK PROFILE

Increase

CHANGE IN OPPORTUNITY PROFILE

Increase

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.

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

CHANGE IN CONTEXT

Our accelerated expansion combined with competitive labor markets have created even greater recruitment needs.

MEASURES TAKEN BY UMICORE

We recruited the highest number of employees ever in 2018. To support our recruitment, we deployed our new global employer brand, with a special focus on challenging labor markets in Europe and Asia.

To attract employees, we participate at Job Fairs, on Campus events at Universities and making best use of professional recruitment and social media channels. We also focused on improving the personal experience during the recruitment process and optimizing the on-boarding process for newcomers.

We address retention, especially challenging in Asia, with initiatives to improve the well-being of our employees, through assessing and improving our positioning of compensation and benefits and by offering learning & development opportunities for our employees.

We also ensure leadership development and give special attention to the development of identified top talent through different initiatives and are very well positioned in terms of employee engagement and enablement.

7 CLIMATE AND ENVIRONMENT

STRATEGIC FOCUS AREA

ECONOMIC PERFORMANCE
VALUE CHAIN AND SOCIETY
ECO-EFFICIENCY

CHANGE IN RISK PROFILE

Increase

CHANGE IN OPPORTUNITY PROFILE

Increase

POTENTIAL IMPACT

Umicore requires certain metals or metal-containing raw materials to manufacture its products and feed its recycling activities. Some of these raw materials are comparatively scarce and require very specific sourcing strategies.

Climate and environment impacts are mostly related to our supply of primary raw materials or to our suppliers' extraction of these primary raw materials. Easy-to-mine deposits are becoming increasingly scarce and ore bodies poorer. Many specialty metals required for new, environmentally-friendly technologies can only be obtained as a by-product of other metals. Treating complex materials from above-ground sources, such as industrial residues and end-of-life materials, is increasingly important.

Climate change causes extreme natural events, chronic deviations in mean temperatures and precipitation patterns, and rising sea levels. This could impact our sites or supply chain.

Historical industrial activity requires active management and remediation. Increasingly stringent regulations on energy use and emissions can induce higher operational costs.

CHANGE IN CONTEXT

Civil society and political discourse are increasingly demanding that business takes an active role in mitigating climate change.

Our accelerated expansion combined with increased demand for our products have increased Umicore's exposure to potential climate or environmental risks and the opportunity to expand in a way that can mitigate or address these risks.

MEASURES TAKEN BY UMICORE

Umicore plays a key role in the transition to a low-carbon future as our materials tackle global trends for clean air and e-mobility, and our closed loop business model tackles resource stewardship.

Our facility in Hoboken is the world's largest and most complex precious metals recycling operation, processing over 200 types of raw material and recovering over 20 different metals. We ensure that a high volume of our metals come from secondary sources – production scraps, residues and end-of-life materials. We recover 28 metals from our closed loop activities. In 2018, Umicore engaged with customers to close the loop for key battery materials such as cobalt.

Essential input materials such as fuels and chemicals are purchased using our Sustainable Procurement Charter. Our remaining metal supplies come from primary sources, for which Umicore has long-term and shorter-term procurement arrangements.

Umicore manages its historical environmental legacy, ensuring adequate financial provisions that are reviewed twice a year. For more information, see Statements, notes E7 and F29.

We ensure that our current activities keep to the most stringent environmental standards for air and water and work every year to improve our energy efficiency despite our growth and increased production.

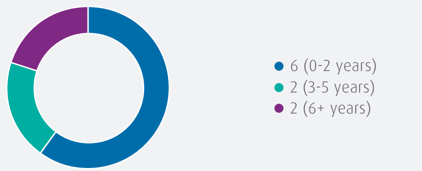
Our global footprint and diverse site locations reduce our exposure to physical risks. New sites have been chosen considering proximity to customers, access to skilled workforce, excellent logistics, infrastructure and green energy.

Management

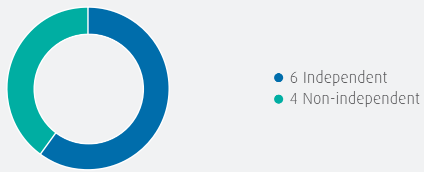
Board of Directors

BOARD DIVERSITY

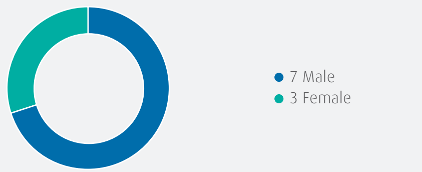
Tenure



Independence



Gender



Nationalities

Australia Belgium France Germany Switzerland USA

Standing left to right: Liat Ben-Zur, Eric Meurice, Gérard Lamarche, Marc Grynberg, Mark Garrett, Colin Hall, Ines Kolmsee, Koenraad Debackere, Géraldine Nolens (Board Secretary)
Sitting left to right: Françoise Chombar, Thomas Leysen, Marc van Sande (Board Advisor)
Not pictured: Karel Vinck (Honorary Chairman)

THOMAS LEYSEN

CHAIRMAN

Belgian, 58 NR

DATE APPOINTED TO BOARD
10 May 2000 (date appointment Chair: 19 November 2008)

EDUCATION
Law – KU Leuven, Belgium

EXPERIENCE
Thomas Leysen became Chairman of Umicore in November 2008 after serving as Chief Executive Officer of Umicore since 2000. During this mandate, he transformed the former Union Minière, a non-ferrous company in an international materials-technology group called Umicore. He joined Umicore in 1993 as member of the Executive Committee, and successively managed several industrial divisions.

EXTERNAL APPOINTMENTS
Chair, KBC Group, banking and insurance group, Belgium

Chair, Mediahuis, a major newspaper publishing group in Belgium and The Netherlands

Chair, King Baudouin Foundation, Belgium

MARC GRYNBERG

CHIEF EXECUTIVE OFFICER, EXECUTIVE DIRECTOR

Belgian, 53

DATE APPOINTED TO BOARD
19 November 2008

EDUCATION
Commercial Engineering – Solvay Brussels School of Economics & Management, Belgium

EXPERIENCE
Marc Grynberg was appointed Chief Executive Officer of Umicore in November 2008 after heading the Automotive Catalysts business unit from 2006 to 2008 and serving as CFO of Umicore from 2000 until 2006. He joined Umicore in 1996 as Group Controller. Prior to joining Umicore, Marc worked for DuPont de Nemours in Brussels and Geneva.

EXTERNAL APPOINTMENTS
Non-Executive Director, Nexans SA, France

LIAT BEN-ZUR

INDEPENDENT NON-EXECUTIVE DIRECTOR

American, 42

DATE APPOINTED TO BOARD
25 April 2017

EDUCATION
Electrical engineering – UC Davis, USA

Business Administration – UCLA Anderson, USA

EXPERIENCE
Liat Ben-Zur has been Corporate Vice President for Modern Life and Devices Product Marketing Management at Microsoft since September 2018. Prior to joining Microsoft, she was SVP and Digital Technology Leader at Royal Philips where she was responsible for driving the connectivity and digital strategy, since 2014. She served previously in several leadership positions at Qualcomm, a US wireless telecommunications company, and was co-founder and Chairwoman of the AllSeen Alliance, a consortium for an open source, common language for the Internet of Things.

FRANÇOISE CHOMBAR

INDEPENDENT NON-EXECUTIVE DIRECTOR

Belgian, 56 NR

DATE APPOINTED TO BOARD
26 April 2016

EDUCATION
Dutch, English, Spanish Interpretation & Honorary Ambassadorship for Applied Language Studies – Ghent University, Belgium

EXPERIENCE
Françoise Chombar is co-Founder, Chief Executive Officer and Managing Director of Melexis, a producer of smart sensor and driver semiconductors for automotive, industrial and durable consumer applications. She served previously as planning manager at Elmos GmbH and operations manager and director at several companies within the Elex group. Françoise was a mentor in the Belgian women's network Sofia for 17 years and is committed to STEM and gender balance advocacy. In 2018, she received the title of Science Fellow by the VUB, University of Brussels.

EXTERNAL APPOINTMENTS
CEO and Director, Melexis, Belgium

Chairwoman, Flemish STEM Platform, an independent advisory group to the government of Flanders

Key: NR Nomination & remuneration committee (Chair) NR Nomination & remuneration committee (Member) A Audit committee (Chair) A Audit committee (Member)

KOENRAAD DEBACKERE
INDEPENDENT NON-EXECUTIVE DIRECTOR

Belgian, 57 (A)

DATE APPOINTED TO BOARD
26 April 2018

EDUCATION
Engineering – Ghent University, Belgium

Management – Ghent University, Belgium

Management – MIT Sloan School of Management, USA

EXPERIENCE
Prof. Dr. Ir. Koenraad Debackere has been with KU Leuven since 1995, where he teaches Technology & Innovation Management and Policy. He has won numerous awards for his research and for scientific excellence, and in 2010 was awarded a Francqui Lecture Chair in economics and business.

MARK GARRETT
INDEPENDENT NON-EXECUTIVE DIRECTOR

Australian/Swiss, 56 (NR)

DATE APPOINTED TO BOARD
28 April 2015

EDUCATION
Economics – University of Melbourne, Australia

Applied Information Systems – Melbourne Institute of Technology, Australia

EXPERIENCE
Mark Garrett has been Chief Executive Officer at Marquard & Bahls AG, a Hamburg-based leading independent energy supply, trading and logistics company, since August 2018.

Before joining Marquard & Bahls AG, he served as Chief Executive Officer at Borealis AG, Austria, he position he had held since 2007. Prior to that, he built an extensive career in the chemical industry working with companies such as Ciba-Geigy and DuPont.

EXTERNAL APPOINTMENTS
CEO, Executive Board, Marquard & Bahls AG, Germany

Non-Executive Director, Board of Directors, NOVA Chemicals Corporation, Canada

Non-Executive Director, Board of Directors, Axalta Coating Systems Ltd., USA

COLIN HALL
NON-EXECUTIVE DIRECTOR

American, 48 (A)

DATE APPOINTED TO BOARD
26 April 2016

EDUCATION
Business Administration – Stanford Graduate School of Business, USA

EXPERIENCE
Colin Hall has been the Head of Investments at Groupe Bruxelles Lambert (GBL) since 2016. He built an extensive career, starting in the merchant banking division of Morgan Stanley, then in New York and London at the Rhône Group, a private equity firm, and later Partner in Long Oar Global Investors, a hedge fund sponsored by Tiger Management. In 2012, he became CEO of Sienna Capital, a 100% subsidiary of GBL that manages its alternative investments (private equity, credit and specific thematic funds).

EXTERNAL APPOINTMENTS
Non-Executive Director, Audit and Strategic Committee, Imerys SA, France

Non-Executive Director, Supervisory Board, Kartesia Management, Luxembourg

Non-Executive Director, Ergon Capital Partners, Belgium

Non-Executive Director, Nomination Committee, Parques Reunidos, Spain

Non-Executive Director, Presiding Committee, GEA, Germany

INES KOLMSEE
INDEPENDENT NON-EXECUTIVE DIRECTOR

German, 48 (A)

DATE APPOINTED TO BOARD
26 April 2011

EDUCATION
Process and Energy Engineering – Technische Universität Berlin, Germany

Industrial Engineering – École nationale supérieure des Mines de Saint-Étienne, France

Business Administration – INSEAD Business School, France

EXPERIENCE
Ines Kolmsee has been Chief Executive Officer of Services & Solutions at Aperam since October 2017. She previously served as CEO of SKW Stahl-Metallurgie Group, a specialty chemicals company with operations worldwide, COO and CTO at German utility EWE AG and CFO at Arques Industries AG.

Key: (NR) Nomination & remuneration committee (Chair) (NR) Nomination & remuneration committee (Member) (A) Audit committee (Chair) (A) Audit committee (Member)

GÉRARD LAMARCHE
NON-EXECUTIVE DIRECTOR

Belgian, 57

DATE APPOINTED TO BOARD
25 April 2017

EDUCATION
Economic Sciences – Louvain, Belgium

INSEAD Business School, Advanced Management Program for Suze Group Executives, France

EXPERIENCE
Gérard Lamarche has been Co-CEO of Groupe Bruxelles Lambert (GBL) since 2012. He built an extensive career, starting at Deloitte Haskins & Sells in Belgium, then Société Générale de Belgique as Investment Manager, Controller and Advisor to the Strategy and Planning Department, and Suez, as Secretary of the Executive Committee, then SVP in charge of Planning, Control and Accounting. In 2000, Gérard Lamarche joined NALCO (the US subsidiary of the Suez Group and world leader in industrial water treatment) as General Managing Director. He was appointed CFO of the Suez Group in 2003.

EXTERNAL APPOINTMENTS
Non-Executive Director, Finance and Audit Committee, LafargeHolcim, Switzerland

Non-Executive Director, Audit Committee and Chairman of the Remuneration Committee, Total, France

Non-Executive Director, Audit Committee, SGS, Switzerland

ERIC MEURICE
INDEPENDENT NON-EXECUTIVE DIRECTOR

French, 62

DATE APPOINTED TO BOARD
28 April 2015

EDUCATION
Economics – Sorbonne, France

Mechanical Engineering – École Centrale Paris, France

Business Administration – Stanford Graduate School of Business, USA

EXPERIENCE
Eric Meurice was formerly President and Chief Executive Officer of Netherlands-based ASML Holding, a major provider of advanced technology systems for the semiconductor industry. He was previously EVP in charge of Thomson Multimedia TV Division and held senior positions in several technology groups such as Intel, ITT, and Dell Computer.

EXTERNAL APPOINTMENTS
Non-Executive Director, NXP Semiconductors, The Netherlands

Non-Executive Director, IPG Photonics, USA

Non-Executive Director, Meyer Burger, Switzerland

Non-Executive Director, Soitec, France

KAREL VINCK
HONORARY CHAIRMAN

Belgian

GÉRALDINE NOLENS
BOARD SECRETARY

Belgian, 47

MARC VAN SANDE
BOARD ADVISOR
Formely EVP Energy & Surface Technologies

Belgian, 67

ABOUT THE BOARD

The board's cumulative industry experience is broad, covering automotive, electronics, chemicals, metals, energy and finance sectors in addition to the fields of academia and science.

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 9 active or former CEOs 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.

READ MORE ABOUT CORPORATE GOVERNANCE ON PAGE 76

Key: NR Nomination & remuneration committee (Chair) NR Nomination & remuneration committee (Member) A Audit committee (Chair) A Audit committee (Member)

Executive Committee

Sitting left to right: Pascal Reymondet, An Steegen, Denis Goffaux, Marc Grynberg, Géraldine Nolens, Stephan Csoma, Filip Platteeuw

MARC GRYNBERG

CHIEF EXECUTIVE OFFICER

53

EDUCATION

Commercial Engineering - Solvay Brussels School of Economics & Management, Belgium

EXPERIENCE

Marc Grynberg was appointed Chief Executive Officer in November 2008 after heading the Automotive Catalysts business unit from 2006 to 2008, and serving as CFO of Umicore from 2000 until 2006.

He joined Umicore in 1996 as Group Controller. Prior to joining Umicore, Marc worked for DuPont de Nemours in Brussels and Geneva.

FILIP PLATTEEUW

CHIEF FINANCIAL OFFICER

46

EDUCATION

Applied Economics – Ghent University, Belgium

Financial Management – Vlerick Management School, Belgium

EXPERIENCE

Filip Platteeuw was appointed Chief Financial Officer in November 2012, after serving as VP of Corporate Development from 2010 to 2012.

He joined Umicore in 2004 and was instrumental in the Cumerio spin-off in 2005, and then led the project team for the creation of Nyrstar and its successful IPO in 2007. Filip has extensive experience in investment banking, corporate banking and equity research with KBC Bank.

AN STEEGEN

CHIEF TECHNOLOGY OFFICER

48

EDUCATION

PhD in Material Science and Electrical Engineering - KU Leuven, Belgium

EXPERIENCE

An Steegen joined Umicore and was appointed Chief Technology Officer in October 2018, after serving as Executive Vice President Semiconductor Technology and System R&D at imec, a leading research center with a focus on nanoelectronics and digital technology innovation.

Prior to joining imec in 2010, An worked at IBM's Semiconductor Research & Development center in Fishkill, NY and in the last several years of service at IBM, was in charge of the bulk CMOS technology development.

GÉRALDINE NOLENS

EXECUTIVE VICE-PRESIDENT

CHIEF COUNSEL

47

EDUCATION

Master of Laws - University of Chicago Law School, USA

European Economic Law - Julius Maximilians Universität Würzburg, Germany

Law - KU Leuven, Belgium

EXPERIENCE

Géraldine Nolens was appointed Chief Counsel for the Group in 2009 and joined the Executive Committee in 2015.

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. Géraldine's career includes periods working and living in the US, Germany, Italy and Belgium.

DENIS GOFFAUX

EXECUTIVE VICE-PRESIDENT
ENERGY & SURFACE TECHNOLOGIES

50

EDUCATION

Mining Engineering - Université de Liège, Belgium

EXPERIENCE

Denis was appointed Executive Vice-President Energy & Surface Technologies in 2018, after serving as Chief Technology Officer from 2010 to September 2018 and EVP for Precious Metals Refining from 2015 to 2018.

Prior to that, he occupied successive business line and country management functions in China and Japan. Denis began his career at Umicore with Research & Development in Olen, before moving to what was then our Cobalt & Energy Products Business Unit.

STEPHEN CSOMA

EXECUTIVE VICE-PRESIDENT
RECYCLING

54

EDUCATION

Economics - UC Louvain, Belgium

Mandarin - Fudan University Shanghai, China

EXPERIENCE

Stephan Csoma was appointed Executive Vice-President Recycling in 2015, after serving as EVP of the former Performance Materials from 2012 to 2015, SVP Government Affairs from 2009 to 2012, and SVP South America from 2005 to 2009.

Stephan joined Umicore in 1992 and set up Umicore's first industrial operations in China in the mid-1990s and went on to lead the Zinc Chemicals business unit.

PASCAL REYMONDET

EXECUTIVE VICE-PRESIDENT
CATALYSIS

59

EDUCATION

Master of Science - Stanford University, USA

Engineering - École Centrale Paris, France

EXPERIENCE

Pascal Reymondet was appointed Executive Vice-President Catalysis in November 2012, after serving as EVP of Performance Materials from 2010 to 2012 and EVP of Zinc Specialties from 2007 to 2010.

He joined the Umicore Executive Committee in 2003 to oversee the Precious Metals Products group. Prior to joining Umicore, Pascal held management positions within the Degussa group.

READ MORE ABOUT OUR MANAGEMENT APPROACH ON PAGE 72

AN STEEGEN
CHIEF TECHNOLOGY OFFICER

Group Research & Development
Electro-Optic Materials

DENIS GOFFAUX
EXECUTIVE VICE-PRESIDENT ENERGY & SURFACE TECHNOLOGIES

Cobalt & Specialty Materials
Rechargeable Battery Materials
Electroplating
Japan

MARC GRYNBERG
CHIEF EXECUTIVE OFFICER

Chairman of the Executive Committee
Human Resources
Information Systems
Group Communications

FILIP PLATTEEUW
CHIEF FINANCIAL OFFICER

Finance
Corporate Development
Procurement & Transportation

PASCAL REYMONDET
EXECUTIVE VICE-PRESIDENT CATALYSIS

Automotive Catalysts
Precious Metals Chemistry
India
North America

GÉRALDINE NOLENS
EXECUTIVE VICE-PRESIDENT CHIEF COUNSEL

Legal
Environment, Health & Safety
Corporate Security
Internal Audit

STEPHAN CSOMA
EXECUTIVE VICE-PRESIDENT RECYCLING

Precious metals Refining
Precious Metals Management
Jewelry & Industrial Metals
Government Affairs
Umicore Marketing Services
China
South America

Senior Vice-Presidents

PATRICK VERMEULEN
SVP INFORMATION SYSTEMS

MARC GRYNBERG
CHIEF EXECUTIVE OFFICER

PIERRE VAN DE BRUAENE
SVP ENVIRONMENT, HEALTH & SAFETY

IGNACE DE RUIJTER
SVP HUMAN RESOURCES

GÉRALDINE NOLENS
EXECUTIVE VICE-PRESIDENT, CHIEF COUNSEL

JOHAN RAMHARTER
SVP ELECTRO-OPTIC MATERIALS

GUY BEKE
SVP STRATEGIC PROJECTS

AN STEEGEN
CHIEF TECHNOLOGY OFFICER

SYBOLT BROUWER
SVP GROUP R&D

Most main areas of activity are assumed by a Senior Vice-President as indicated in the diagrams. Other functions, including Audit, Corporate Development, Corporate Security, Finance, Group Communications, Legal, Purchasing & Transportation and regional oversight for Japan, report directly to the Executive Committee member as described on p.59


BART SAP
SVP BATTERY MATERIALS SUPPLY CHAIN


JORIS VAN HOVE
SVP COBALT & SPECIALTY MATERIALS


THOMAS ENGERT
SVP ELECTROPLATING


DENIS GOFFAUX
EXECUTIVE VICE-PRESIDENT ENERGY & SURFACE TECHNOLOGIES


JAN VLIEGEN
SVP STRATEGIC DEVELOPMENTS ENERGY & SURFACE TECHNOLOGIES


KURT VANDEPUTTE
SVP RECHARGEABLE BATTERY MATERIALS


GUY ETHIER
SVP SUPPLY CHAIN SUSTAINABILITY


MICHAEL NEISEL
SVP AUTOMOTIVE CATALYSTS CONTROLLING, PURCHASING, IT & BUSINESS DEVELOPMENT


WILFRIED MÜLLER
SVP AUTOMOTIVE CATALYSTS GLOBAL RESEARCH & TECHNOLOGY, PRODUCT MANAGEMENT


RALPH KIESSLING
SVP AUTOMOTIVE CATALYSTS OPERATIONS


PASCAL REYMONDET
EXECUTIVE VICE-PRESIDENT CATALYSIS


JÖRG VON RODEN
SVP AUTOMOTIVE CATALYSTS SALES & MARKETING


LOTHAR MUSSMANN
SVP PRECIOUS METALS CHEMISTRY


BERNHARD FUCHS
SVP PRECIOUS METALS MANAGEMENT & UMICORE MARKETING SERVICES


LUC GELLENS
SVP PRECIOUS METALS REFINING


DAVID FONG
SVP & COUNTRY MANAGER GREATER CHINA


STEPHAN CSOMA
EXECUTIVE VICE-PRESIDENT RECYCLING


CARSTEN GERLEMAN
SVP UMICORE SOUTH AMERICA


FRANZ-JOSEF KRON
SVP JEWELRY & INDUSTRIAL METALS


EGBERT LOX
SVP GOVERNMENT AFFAIRS

Key figures

	2014	2015	2016	2017	2018
ECONOMIC PERFORMANCE (in millions of Euros unless stated otherwise)					
Revenues (excluding metal)	2,366.5	2,629.0	2,667.5	2,915.6	**3,271**
Recurring EBIT	273.7	330.3	350.7	410.3	**514**
Return on Capital Employed (ROCE) (in %)	12.2	13.7	14.6	15.1	**15.4**
R&D expenditure	143.3	144.5	155.9	175.2	**196**
Capital expenditure	202.4	240.3	287.3	365.3	**478**
Recurring EPS (in €/share)	0.89	1.13	1.07	1.22	**1.36**
Gross dividend (in €/share)	0.50	0.60	0.65	0.70	**0.75**
SOCIAL, ENVIRONMENTAL AND VALUE CHAIN PERFORMANCE					
Revenues from clean mobility and recycling (in %)	–	–	65	67	**72**
Total donations (in thousands of Euros)	1,409.35	1,219.38	1,289.68	1,299.34	**1,431.66**
CO_2e emissions (scope 1+2) – Market based (in tonne)	664,568	710,143	662,059	633,704	**765,756**
CO_2e emissions (scope 1+2) – Location based (in tonne)	–	–	735,065	663,307	**783,843**
Energy consumption (in terajoules)	7,304	7,742	6,737	6,532	**7,447**
Workforce (fully consolidated companies)	10,368	10,429	9,921	9,769	**10,420**
Lost Time Accidents (LTA)	37	47	59	51	**61**
LTA frequency rate	2.16	2.66	3.34	3.01	**3.36**
LTA severity rate	0.94	0.12	0.56	0.09	**0.10**
Exposure ratio 'all biomarkers aggregated' (in %)	1.8	2.3	3.2	2.7	**2.8**
Average number of training hours per employee	45.59	45.06	41.49	45.33	**43.10**
Voluntary leavers ratio	3.42	3.35	4.10	5.03	**7.18**

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materials for a better life
IF OUR PIONEERING APPROACH CAN MAKE US A LEADER IN SUSTAINABILITY
IMAGINE WHAT YOU COULD DO?
UMICORE.COM/CAREERS

FINANCIAL CALENDAR[1]

25 APRIL 2019
General meeting of shareholders (financial year 2018)

29 APRIL 2019
Ex-dividend trading date

30 APRIL 2019
Record date

2 MAY 2019
Payment date for dividend

31 JULY 2019
Half year results 2019

7 FEBRUARY 2020
Full year results 2019

ADDITIONAL INFORMATION

STOCK
Euronext Brussels

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DESIGN & EXECUTION
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FEEDBACK
Let us know what you think about this report.
Send an e-mail to annualreport@eu.umicore.com

[1] Dates are subject to change. Please check the Umicore website for updates to the financial calendar.

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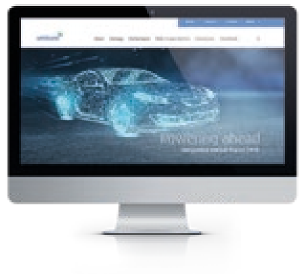
Governance and statements

Integrated Annual Report 2018

materials for a better life

Governance and statements



About this report

Our 2018 Annual Report consists of the following documents, which can be downloaded in pdf format:

2018 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.

2018 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, social and value chain performance data for the Group.

The report is externally verified and has been prepared in accordance with the GRI Standards: Core option. Find the GRI Index on p. 191.

WEB-BASED CONTENT

To access the full web-based report including our case studies please visit our dedicated reporting centre via the link below.

VISIT ANNUALREPORT.UMICORE.COM

Stakeholder Engagement

Umicore is a publicly listed company. As such, we interact with many parties who have an interest in the way we conduct business. The relationship that we foster with these parties or stakeholders has a direct impact on our success.

Stakeholder engagement at Umicore is based on a localised approach whereby all sites are required to identify their respective stakeholders and establish suitable ways of engaging with them. In many cases, such as the dialogue with customers and suppliers, the stakeholder relationships are primarily managed by the business units themselves, in line with our decentralised approach to unit management.

The executive committee receives feedback from stakeholders in several ways, ranging 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 periodic employee survey results.

The Horizon 2020 strategy represents a strong focus on what is of material importance for Umicore in the coming 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 we engage with policy makers to contribute to a 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 our senior management are often called upon or volunteer to participate in public forums to discuss our business strategy and sustainable development approach. Such events provide the opportunity to interact with various groups including business leaders, academics and civil society.

Umicore's main stakeholder groups are highlighted below and 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 the dialogue between Umicore and the stakeholders.

SUPPLIERS

Umicore operates through three business groups on 5 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 over 18,000 suppliers worldwide. These suppliers benefit from our presence as a customer: in 2018, Umicore paid these suppliers € 8.5 billion (including the metal content of raw materials).

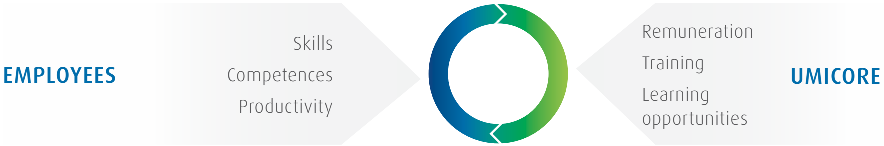
Umicore is engaged in a constant dialogue with its suppliers to define technical specifications and to ensure mutually acceptable terms and conditions for continued partnership, such as prompt and uninterrupted delivery of materials/services and timely payment. The business units are responsible for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

Our approach is shaped by our Sustainable Procurement Charter. This charter is complemented by specific approaches or frameworks for some critical raw materials. Our Horizon 2020 strategy includes an objective on sustainable supply that builds on the experience gained through our previous objective on sustainable procurement. For information on the level of achievement against this objective see Value Chain & Society, p. 24.

CUSTOMERS

Our ambition is to produce "materials for a better life". Our materials can be found in a wide variety of applications that make day-to-day life more comfortable and help contribute to a cleaner environment. Umicore has an international customer base, with 60.6% of 2018 revenues being generated outside Europe. The business units are responsible for providing support to their customers to improve their understanding of the hazards and risks of any products either on the market or under development. Interaction with customers is ongoing and is managed by the business units. All business units have a customer feedback process through which they periodically gauge 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 employs 10,420 people around the world. We invest significant resources in ensuring our status as an employer of choice in all the regions where we operate. In 2018, Umicore paid a total of € 731 million in salaries and other benefits to the employees of the fully consolidated companies. Social security payments totalled € 101 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 our Code of Conduct. Open dialogue is promoted within the company with our employees and includes an opinion survey every 3 years.

Umicore respects the principle of collective bargaining wherever it is requested. While such practice is commonplace in Europe, in other locations collective bargaining mechanisms and trade unions may be less common or face local legal restrictions. Umicore has a sustainable development agreement with the international union IndustriALL on the global implementation of its policies on human rights, equal opportunities, labor 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 oversees the implementation of the agreement.

Supplementary channels of company-wide communication include the 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.

SHAREHOLDERS AND INVESTORS

Umicore strives to provide timely and accurate information on its strategy, performance and prospects to its shareholders. Next to the publication of press releases and the Annual Report, Umicore's management and Investor Relations team communicate with investors during their worldwide roadshows, regular site visits, investor conferences, webcasts and conference calls.

Umicore has a high free float with a broad base of international shareholders which at the end of 2018 were primarily situated in Europe and North America. The overview of shareholders holding voting rights equal to 3% or more can be found on our website. 22 brokerage firms cover and publish equity research notes on Umicore, reflecting strong and global investor interest in Umicore's equity story and growth opportunities.

On 8 February 2018 Umicore successfully placed through an accelerated bookbuild 22,400,000 new ordinary shares, representing 10% of the then outstanding shares. On 12 February 2018, the new shares were admitted to trading on Euronext Brussels. As a result, as from that day, the total number of outstanding and fully paid-up shares and the numbers of voting rights amount to 246,400,000.

80% of Umicore's net debt consists of fixed-rate medium- and long-term notes issued with private debt investors in Europe and North America. Additionally, Umicore has also 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 its local banking community.

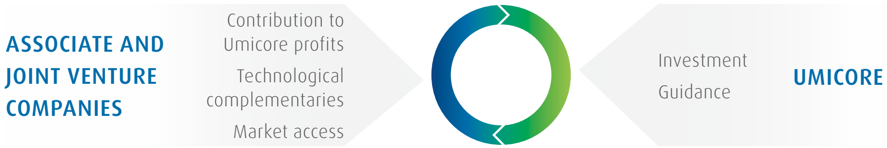
SOCIETY

Through employment, Umicore participates in the generation of wealth in the areas where it operates. Although wealth generation is an obvious benefit, the way 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. To maintain this licence, Umicore does the utmost to operate in a way that promotes sustainable development. This goes beyond operating within the legally defined boundaries set for all companies. We set our own standards, applicable across the Group, frequently surpassing the legislative demands in many areas where we operate. In addition to this commitment to sound operating practices, Umicore also strives to develop materials that enhance quality of life and, in particular, contribute to addressing certain critical environmental or societal challenges.

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

Umicore makes voluntary contributions at site and Group-level to a range of charitable causes in line with an internal policy and guidelines. We manage Group-level engagement efforts through a Group Donations Committee that has the mandate of engaging with civil society groups and determining the extent of partnerships at Group level. For information on these initiatives in 2018 see page 28 of this report.

ASSOCIATE AND JOINT VENTURE COMPANIES



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

Umicore is rigorous in safeguarding any intellectual property that is shared with associate or joint venture partners. For a full list of associate and joint venture companies see Statements, note F5.

PUBLIC SECTOR AND AUTHORITIES

Umicore paid a total of € 133 million in taxes on our 2018 operations. Umicore and our employees also contributed a total of € 101 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. Grants contributed € 7.7 million to the EBIT in 2018. Umicore does not make donations to political parties or organisations as a matter of policy.

In 2018, we continued our efforts to inform public policy and foster contacts with public authorities worldwide. These efforts are coordinated through the Government Affairs department and focus primarily on Europe, North America and China. Umicore aims to raise the profile and understanding of our technologies and contribute to the discourse on materials-related issues. In Europe, this has centred on three main topics: resource efficiency, with policies dealing with waste and raw materials, and the ongoing developments for a Circular Economy in the EU; advanced materials as a key enabling technology for low carbon technologies; and material technologies for the purification of exhaust gases from automobiles and trucks with combustion engines. Our initiatives also include 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.

Umicore experts are often invited as members of working groups and panels initiated by European or national authorities. We are part of the European Innovation Partnership (EIP) on Raw Materials, B20-G20, the High-Level Group (HLG) on Key Enabling Technologies (KET), the Steering Committee of Energy Materials Industrial Research Initiative (EMIRI) and the ERA-MIN network on industrial handling of raw materials for European Industries, to name a few. In addition, Umicore is part of the Knowledge and Innovation Community on Raw Materials, a consortium of over 100 partners to address the accessibility, availability and efficient use of raw materials in Europe.

When specific issues of interest arise, we communicate our position through the industry groups to which we are affiliated. Umicore is mindful of the sensitivity of taking positions on issues of public interest and has developed guidelines for doing so responsibly. Umicore is currently a member (both at corporate and business unit level) of the organisations listed below. This year, we have included detail on the nature of some of our work with some of these organizations.

CORPORATE

The World Economic Forum's Global Battery Alliance was launched in September 2017. This global public-private partnership comprises over 40 international organizations to establish a sustainable battery value chain to power the decarbonization of the world's energy and transport systems. Umicore chairs the Executive Board. In collaboration with our partners in 2018, we worked toward ensuring that the cobalt extraction industry is free of child labor and that alternative livelihoods for cobalt-dependent households are made available, and on assessing the viability of a circular economy for batteries. This work explored a second life battery market, material passports to enable battery recycling thanks to regulations that facilitate cross-border transport of spent batteries, the collection of end-of-life portable electronics to increase battery recycling and the creation of economic value for innovative projects supporting mining communities.

Other memberships and activities at Group-level include: A3M (L'Alliance des Minerais, Minéraux et Métaux); Agoria (Belgian multi-sector federation for the technology industry); American European Community Association (AECA); Bebat; Belgian Indian Chamber of Commerce and Industry (BICC&I); Belgian industrial Research and Development (BiR&D); Belgium-Japan Association & Chamber of Commerce (BJA); Eurometaux (European Non-Ferrous Metals Association); European Industrial Research Management Association (EIRMA); European Round Table of Industrialists (ERT); ETION; Federation of Belgian Industrial Energy Consumers (FEBELIEC); Flemish Aerospace Group (FLAG); Flemish Network of Enterprises (Voka); Flanders-China Chamber of Commerce; Metalle pro Klima (a WirtschaftsVereinigung Metalle initiative); TransAtlantic Business Council; Vlamnse Technische Kring (VTK); World Economic Forum.

CATALYSIS

As air quality concerns, especially in cities, continue to increase, legislation aiming to minimize the impact on air quality of transportation using internal combustion engines is becoming increasingly stringent. As a producer of key components of catalytic emission control systems, Umicore is a member of various industry associations worldwide through which, in close collaboration with automotive engineering companies, we aim to provide an option in the portfolio of ultra-clean transportation of the future using the most advanced emission control technologies.

Other memberships and activities on the topic of catalysis include: Associacao dos Fabricantes de Equipamentos para Controle de Emissoes Veiculares da América do Sul (AFEEVAS); Association for Emissions Control by Catalyst (AECC); Catalyst Manufacturers Association, Japan (CMAJ); Committee of Vehicle Emission Control in China (CVEC); Emission Controls Manufacturers Association, India (ECMA); European Precious Metals Association (EPMF);German Automotive Industry Association (VDA); German Chemical Federation (VCI); International Platinum Group

Metals Association (IPA); Manufacturers of Emission Controls Association (MECA); Verband der Automobilindustrie (VDA); Verband der Chemischen Industrie e.V. (VCI).

ENERGY & SURFACE TECHNOLOGIES

Accelerating the transition to a low-carbon society requires driving down the cost of clean energy and clean mobility technologies. Advanced materials represent a sizeable part of the cost of these clean technologies and are key enablers of the low-carbon society. The advanced materials path from lab to market is long, risky and capital-intensive, so industry welcomes risk-sharing initiatives supporting European industrial leadership. Founded in 2012 by Umicore and other industrial and research organizations, EMIRI (the Energy Materials Industrial Research Initiative) works to increase awareness about the role of advanced materials in everyday life and in the European economy, and advocates for stronger EU-level innovation support.

Other memberships and activities on the topics of energy and surface technologies include: Cobalt Development Institute; Cobalt REACH consortium; Deutsche Gesellschaft für Galvano- und Oberflaechentechnik (DGO); Energy Materials Industrial Research Initiative (EMIRI); European Association for Battery, Hybrid and Fuel Cell Electric Vehicles (AVERE); Nickel Institute; Nickel REACH consortium.

RECYCLING

The European Union is striving to establish a Circular Economy. Umicore, a frontrunner with our "closed loop" business model, contributes to numerous conferences and expert working groups. Specifically, we emphasize the links between a Circular Economy and responsible sourcing, resource efficiency, waste management and high-quality recycling. We use our experience to promote electromobility as a gateway to Circular Economy in Europe.

Other memberships and activities on the topic of recycling include: European Battery Recycling Association (EBRA); European Electronics Recyclers Association (EERA); European Precious Metals Federation; Fachvereinigung Edelmetalle (German Precious Metals Association); International Platinum Group Metals Association; International Precious Metals Institute; Minor Metals Trade Association; Responsible Jewellery Council (RJC); The European Association of Advanced Rechargeable Batteries (RECHARGE); The International Platinum Group Metals Association (IPA); The London Bullion Market Association (LBMA); The London Platinum and Palladium Market (LPPM); Vereniging Nederlandse Metallurgische Industrie (VNMI).

DISTRIBUTION OF ECONOMIC BENEFITS

The most significant portion of Umicore's total income was used to secure the metal component of raw materials (the cost of which is passed on to the customer). After subtracting other raw materials costs, energy-related costs and depreciation, the remaining economic benefits available for distribution stood at € 1,227 million.

The biggest portion (€ 731 million) was distributed to employees. The bulk of employee benefits was in the form of salaries, with the balance going to national insurance contributions, pensions and other benefits.

Net interest to creditors totalled € 33 million, while taxes to the governments and authorities in the places where we operate, totalled € 133 million. The earnings attributed to minority shareholders were € 10.86 million.

Subject to approval by shareholders at the AGM in April 2019, the Board of Directors will propose a gross annual dividend of € 0.75 per share. Considering the interim dividend of € 0.35 per share paid out on 28 August 2018 and subject to shareholder approval, a gross amount of € 0.40 per share will be paid out on 2 May 2019. This is in line with Umicore's policy of paying a steady or gradually-increasing dividend.

In 2018, Umicore made charitable donations totalling € 1.35 million.

Millions of Euros	2018
Economic value distributed (including contribution from associates)	13,825.02
Raw materials cost (excluding water, gas & electricity)	11,759.48
Water, gas & electricity cost	95.80
Depreciation & impairments	227.16
Other costs (net)	515.57
Direct economic value generated	1,227.00

Millions of Euros	2018
Direct economic value generated	1,227.00
Total taxes	133.44
Creditors	33.20
Minority shareholders	10.86
Shareholders (dividends only)	180.78
Retained by the Company	136.20
Charitable donations	1.35
Employee compensation & benefits	731.05

Materiality

Umicore strives to plan for the best possible future by remaining in a healthy and competitive position whilst considering global economic, social and environmental megatrends. Our Vision 2015 strategy built on existing competencies, market positions and our long-standing expertise in metallurgy, materials science, application know-how and recycling, and combined them with our closed-loop business model to give us strong growth potential in clean air, clean energy, vehicle electrification and addressing resource scarcity.

Our Vision 2015 objectives covered the following ambitions and challenging performance goals:

ECONOMIC PERFORMANCE	GREAT PLACE TO WORK	ECO-EFFICIENCY	STAKEHOLDER ENGAGEMENT
Double digit revenues growth	Zero lost time accidents Become a preferred employer	Reduce our CO_2 emissions by 20% *(based on 2006 industrial scope)*	Implement our new sustainable procurement charter
15-20% average return on capital long-term	Reduce employee body concentrations of specific metals (Cd, Pb, Co, Ni, As, Pt)	Reduce metal emissions to water and air by 20% *(based on 2009 industrial scope)*	Identify key stakeholders and engage with the local community at all our sites
	Assess and discuss individual employee development annually	Invest in tools to understand and measure our product life cycles and impacts	

Horizon 2020, launched in 2015, represents continuity in Umicore's strategic choices over the past decade and sets out further economic, environmental, value chain and society challenges. The definition of the environmental, value chain and society objectives for the Horizon 2020 strategy involved a materiality assessment to identify areas with the potential to turn sustainability into a greater competitive edge, as follows:

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

A. VALIDATING GLOBAL MEGATRENDS

In 2014-15, the executive committee scanned in detail the four megatrends that underpin Umicore's growth ambitions. The results clearly showed that three of the four megatrends were strengthening: resource scarcity, the need for clean air and vehicle electrification (see pages 10-11 for more on these megatrends). The landscape had shifted significantly in photovoltaics, the fourth megatrend, where a combination of economic and technology choices led to a less favourable market for Umicore's higher-end solutions. Based on the results, the executive committee elected to focus Umicore's Horizon 2020 growth ambitions on activities that are linked to clean air (automotive catalysts), vehicle electrification (rechargeable battery materials) and resource efficiency, ensuring precious and specialty metals recycling through our closed-loop business model. These activities are therefore at the heart of our ambition to double Umicore earnings by 2020.

B. ASSESSING VISION 2015 ACHIEVEMENTS AND SHORTFALLS

In terms of sustainability performance, Vision 2015 yielded 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.

We also made strides in personnel development and stakeholder engagement. By 2015, the vast majority of Umicore employees had received an annual appraisal and development plan and we had further reduced exposure levels of our employees to various metals. Our next People Survey is planned for 2018.

In sustainable procurement, we built on our reputation as a pioneer in the field by deploying our Sustainable Procurement Charter and sought out conflict-free certifications for our smelters.

Safety was the sole area where performance was less than satisfactory. 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 maintain the progress made, continue focusing on topics such as safety where we fell short of our goals and to develop goals that enhance Umicore's competitive positioning, as follows:

MAINTAIN ACHIEVEMENTS in carbon and metal emissions, preferred employer and stakeholder engagement. Although we will not set further objectives for these themes, we will continue to measure and report on the impact and performance when relevant from a materiality point of view.

IMPROVE safety and occupational exposure. We will continue to pursue the zero accident and zero excess readings goals.

SECURE COMPETITIVE ADVANTAGE through sustainable sourcing. Thanks to the implementation of the Umicore Sustainable Procurement Charter, we have developed a reputation for ethical sourcing. This approach is aligned with Umicore's values and ethics but comes at a cost that is only gradually accepted by customers. Horizon 2020 seeks to leverage this sustainable sourcing approach to generate an enhanced competitive edge.

2. IDENTIFYING AND CHOOSING 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 screened for other topics of material importance to our business units and to our main stakeholder groups (see Stakeholder Engagement, p. 63).

In addition to producing the initial list of material topics, based on the learning from Vision 2015, other potential topics were identified through direct feedback from stakeholders, including 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 (Assessment of Product and services Sustainability) tool from 2012 to 2015 and direct questions submitted to Umicore or its business units by customers.

At corporate level, we 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 TESTING

All topics identified in the materiality screening phase were used to produce a draft materiality matrix. The relevance of these topics for Umicore was assessed by a project team and discussed with the Environment, Health and Safety (EHS) and Human Resources (HR) corporate teams. The starting matrix, containing about 65 topics, was submitted for further refining with the business unit management teams.

Based on the feedback received, a revised version of the Umicore Group materiality matrix was compiled consisting of top quartile topics. These 25 topics were the basis of the materiality 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 tested using an online survey that was sent to 48 stakeholders. These stakeholders – investors, customers and employees – ranked 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. We clustered our objectives in four main themes. Three of the Vision 2015 themes were kept – Economic Performance, Eco-Efficiency and Great Place to Work – but "Stakeholder Engagement" was 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. This constitutes Umicore's main focus through 2020.

The process for defining the environmental, value chain and society objectives within Horizon 2020 involved a structured dialogue with the management of each business unit 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 online stakeholder survey. The objectives were debated and ratified by the executive committee in February 2016.

We also identified a range of issues that Umicore and our stakeholders identified as important for management purposes, which should remain part of the report, albeit not part of any specific Horizon 2020 objective. One example is CO_2 emissions: in our Vision 2015 review, we assessed that the absolute level of our CO_2 emissions was dependent on the energy mix of the countries in which we operate, a roadblock to pursuing a specific CO_2 emission reduction objective. We therefore chose to pursue energy, operational and materials efficiency instead. However, many stakeholders expect Umicore to report CO_2 emission and this data remains part of the reporting scope.

Our Horizon 2020 targets are as follows:

ECONOMIC PERFORMANCE

STRENGTHEN LEADERSHIP
Confirm our strong position and unique offer in clean mobility materials and recycling processes

DOUBLE EARNINGS
At least double the size of recurring EBIT compared to 2014 and excluding the discontinued operations

REBALANCE OUR PORTFOLIO
Ensure a more balanced distribution of earnings among the three business groups

VALUE CHAIN AND SOCIETY

SUSTAINABLE SUPPLY
Secure materials supply and promote our closed-loop business offer

Main material topics: *Criticality of raw materials, Recyclability and potential to close the loop, Recycled input materials use, Resource scarcity, Supplier screening, Supply disruptions, Sustainability of supply chain/responsible sourcing*

SUSTAINABLE PRODUCTS AND SERVICES
Develop products that create sustainable value for our customers or society

Main material topics: *Life cycle thinking, Opportunities and risk from technologies and products, Product stewardship, Public health and safety, Resource efficient products and production, Toxic substances and phase out or ban*

Main stakeholders: *Customers, Investors and funders, Public sector & authorities, Society, Suppliers*

ECO-EFFICIENCY

EFFICIENT OPERATIONS
Increase value through efficient use of metals, energy and other substances

Main material topics: *Energy consumption and efficiency, Opportunities and risk from technologies and products, Resource efficient products and production*

Main stakeholders: *Customers, Investors and funders, Public sector & authorities, Society, Suppliers*

GREAT PLACE TO WORK

SAFETY
Become a zero-accident workplace

Main material topics: *Occupational safety, Process safety*

HEALTH
Reduce employee exposure to specific metals

Main material topics: *Occupational health*

PEOPLE ENGAGEMENT
Further improve people engagement with specific focus on talent attraction & retention, diversity management and employability

Main material topics: *Diversity and inclusion, Employee training and development, Talent attraction and retention*

Main stakeholders: *Customers, Employees, Investors and funders, Public sector & authorities, Society, Suppliers*

Other topics that were defined as material by at least one stakeholder group during the materiality assessment but are not a specific Horizon 2020 objective (ie 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, value chain and society objectives were validated by the executive committee in February 2016. The economic objectives and growth ambitions had been previously validated in 2015. As a result, 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.

5. 2018 UPDATES

Following the 2018 review, the board of directors confirmed that Operational Excellence, Supply, Products, Human Resources and Health and Safety remain Umicore's material issues. We continue to follow our Horizon 2020 objectives and the associated materiality in determining the content and disclosure in this report.

Management Approach

The Umicore Way is the cornerstone of everything we do at Umicore. We believe that materials have been a key element in furthering the progress of mankind, that they are at the core of today's life and will continue to be enablers for future wealth creation. We believe that metal-related materials have a vital role to play, as they can be efficiently and infinitely recycled, which makes them the basis for sustainable products and services. We want Umicore to be a leader in providing and creating material-based solutions to contribute to fundamental improvements in the quality of life. The overarching principles guiding our "Materials for a better life" mission are:

VALUES

We hold the values of openness, respect, innovation, teamwork and commitment to be crucial to our success.

ENVIRONMENT AND SOCIETY

We recognise that our commitment to financial success must also take into account the broader economic, environmental and social impact of our operations.

EMPLOYEES

We strive to be a preferred employer of both current and potential employees.

BUSINESS INTEGRITY

Wherever we operate, our reputation is a most valuable asset, and it is determined by how we act. We avoid any action that would jeopardise our reputation.

GOALS AND PERFORMANCE 2016-2020

The Umicore Way outlines our values, the way in which we wish to achieve our strategic goals and our overall commitment to the principles of sustainable development. Our Horizon 2020 economic growth ambitions are tied to the megatrends of resource scarcity, clean air and vehicle electrification. The social and environmental objectives are clustered in three themes: Great Place to Work, Eco-efficiency and Value Chain and society. These objectives reflect our operational excellence and the aspects of our products and services that we can further improve to turn sustainability into a greater competitive edge.

The supporting components of our Horizon 2020 strategy (see Materiality page 69) described in this chapter, including policies, responsibilities and evaluation, ensure a close monitoring of our economic, environmental and social performance.

POLICIES

The Umicore Way is supplemented by detailed company codes including:

- Code of Conduct, a comprehensive framework for ethical business practice;
- Corporate Governance Charter, which sets out our management philosophy and governance principles;
- Sustainable Procurement Charter, which outlines our commitment to align our supply chain to our own values and practices; and
- Many internal policies developed in support of our vision and values such as Safety, Human Rights and Working Conditions, Training & Development and Donations & Sponsorship.

RESPONSIBILITIES

Final accountability for all aspects of Umicore's business lies with the executive committee. The broad sustainability approach is guided by an interdepartmental team with representatives from Environment, Health and Safety (EHS), Human Resources (HR), Finance and Procurement & Transportation. This team is responsible for developing and obtaining approval for sustainability objectives and guiding 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, ensuring a collective understanding of concepts, definitions, roles and responsibilities. Regular workshops and meetings are organised each year at various levels of the organisation to share best practices.

Progress towards our objectives is measured annually against a set of KPIs reported through a group data management system. The data is collected and reported at the relevant entity level: site, business unit or business group. Social and environmental performance indicators that are relevant and material to Umicore's operations are also measured and reported. Corporate EHS, Corporate HR and Corporate Finance aggregate the performance of the business units 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 internally. In addition, Umicore uses an assurance provider to check its social and environmental data. This assurance has been carried out by PricewaterhouseCoopers (PwC) since 2011. 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 continuous improvement process.

ECONOMIC & FINANCIAL PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

Based on the validity analysis of the megatrends relevant for Umicore's Vision 2015 strategy, we identified specific growth areas where Umicore can contribute to solve certain societal and environmental problems. These growth areas form the basis of the Horizon 2020 strategy and are expected to enable Umicore to double its recurring EBIT between 2014 and 2020.

OPERATIONAL RETURNS

Umicore seeks to generate economic value through our existing businesses and any acquisitions or organic growth initiatives that we undertake, in line with our Horizon 2020 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 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. The return on capital employed (ROCE) targeted in our Horizon 2020 strategy is over 15%.

Investments are assessed on a case-by-case basis: acquisitions are 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, emphasis is placed on ROCE. We deal with precious and other rare metals and we therefore have a relatively high working capital intensity. Management is therefore incentivised to optimise performance both from an earnings perspective and by minimising capital employed.

SHAREHOLDER RETURNS

Umicore aims to create value for its shareholders. This is achieved through the development of a compelling strategy and a strong track record of delivering a solid performance against the strategic objectives. We seek to grow our existing businesses while maintaining or establishing strong leadership positions on the back of innovative technologies (see below). Shareholder returns depend on the valuation of the Umicore stock and are supported by the payment of dividends. Umicore has a policy of paying a stable or gradually increasing dividend (for a history of the dividend payout, 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. While we have no fixed target regarding debt levels, we aim to maintain an investment grade status at all times. We also seek to maintain a healthy balance between short 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 majority of our growth initiatives.

RESEARCH AND DEVELOPMENT

As a materials technology company, the future success and sustainability of our business depend on our ability to develop and market innovative products and services. We invest consistently in research and development (R&D), with the equivalent of 5% to 7% of revenues typically dedicated to 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 48 production sites in 22 countries.

ECONOMIC AND FINANCIAL PERFORMANCE POLICY

Our approach to financial and economic management derives from our vision, values and organisational principles as described 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.

ECONOMIC AND FINANCIAL PERFORMANCE RESPONSIBILITY

Accountability for the overall economic and financial performance of Umicore lies with the Chief Executive Officer while each Executive Vice-President is responsible for the 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 the overall research and development activities. At business unit level, the head of the business unit is responsible for the operational and financial performance of the business unit. The Chief Financial Officer has overall oversight of Umicore's financial and economic performance 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.

ENVIRONMENTAL PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

In The Umicore Way, Umicore commits to continually improve its environmental performance. As a materials technology company, we have defined energy efficiency and the reduction of metal emissions as core environment-related objectives in our Horizon 2020 strategy. These objectives represent what we believe to be the most material environmental aspect of our business and the ones that are most important to our various stakeholders (see Materiality, p. 68). The performance review of energy efficiency is reported in the Eco-Efficiency, p. 29.

While Umicore's environmental objectives through 2020 focus on energy efficiency and the reduction of metal emissions, 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 using the same measurement tools 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, detailed in the Environmental Statements, include:

- Emission to water and air, note E2
- Greenhouse gases, note E3
- Water consumption, note E5
- Waste volumes, note E6
- Control and remediation of historical pollution, note E7
- Regulatory compliance and management systems, note E8

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

ENVIRONMENTAL PERFORMANCE POLICY

Our approach to environmental management derives from the vision, values and organisational principles found in The Umicore Way. An internal Group EHS Guidance Note details the approach to measuring and reporting on each relevant environmental indicator. A specific internal policy on energy efficiency was rolled out throughout the Group from 2011 to 2015 and created a high level of awareness and commitment at sites and within business units to strive for continual energy efficiency improvement. In addition, Umicore encouraged all business unit initiatives that increased recycling potential. On a global scale, metals recycling reduces the environmental impact related to the acquisition and transformation of metals into products.

ENVIRONMENTAL PERFORMANCE RESPONSIBILITY

Umicore's environmental performance and impact accountability lies with the executive committee. In the executive committee, the Chief Counsel is Executive Vice-President for Environment, Health and Safety, Corporate Security and Internal Audit and responsible for all environmental matters and is supported by the Senior Vice President Environment, Health & Safety. The Executive Vice-Presidents are responsible for the overall environmental performance of their business group. 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.

ENVIRONMENTAL PERFORMANCE BOUNDARY

Energy efficiency performance and underlying performance indicators contribute to reducing our impact on the environment, for example through an expected reduction of our carbon footprint of lower impact or the metal emissions on air and water.

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: reducing lost-time accidents to zero, further reducing occupational exposure to specific metals 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, later in this chapter.

These objectives were defined as material topics in the materiality assessment both by internal and external stakeholders. Talent management is key to reaching our desired business growth. Attracting, developing and retaining talent in competitive labour markets support the business units in their growth plans. In addition, increasing the diversity of our workforce is not only in line with expectations from society, it should also increase our chance of success. Given the ageing population and the need for longer careers, we are also putting programmes in place to increase the employability of our workforce. The performance review of these material topics, including zero accident and reducing occupational exposure, is reported in the Great Place to Work section, p. 34.

While Umicore's social objectives determine a special focus through 2020, we believe it is equally important to continuously monitor, control and report our social performance in other areas. We do that using the same measurement tools indicated in our General Management Approach. These underlying performance indicators, detailed in the Social Statements section, include:

- Monitoring of workforce demographics, note S2

- Monitoring of human rights, compliance and risk, note S4
- Monitoring of employee health aspects beyond metal exposure, notes S5-S6
- Monitoring of contractor safety, note S7

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

SOCIAL PERFORMANCE POLICY

Our approach to social performance derives from the vision, values and organisational principles found in The Umicore Way. An internal Group Social Reporting Guidance Note provides detailed guidance on measuring and reporting on social performance. Specific internal policies have been developed to frame specific elements of our 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.

SOCIAL PERFORMANCE RESPONSIBILITY

Umicore's social performance and impact accountability lies with the executive committee. In the executive committee, the CEO has oversight responsibilities for Umicore's Human Resources issues and is supported by the Senior Vice President Human Resources. The Executive Vice-Presidents are responsible for the social aspects of their 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.

SOCIAL PERFORMANCE BOUNDARY

Social performance and the underlying performance indicators have a direct impact on Umicore's workforce (enhanced engagement and well-being at all levels and attracting and retaining the right skills).

VALUE CHAIN & SOCIETY PERFORMANCE

GOALS AND PERFORMANCE 2016-2020

The relationship between customers and suppliers is an essential element to building financial and economic value and plays a key role in the promotion of social and environmental best practices. 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 contribution of our products and services to a better life.

The performance review of these material topics is reported in the Value Chain and Society, p. 24.

While Umicore's value chain and society objectives determine a special focus through 2020, we believe it is equally important to continuously monitor, control and report our relationship with all the other stakeholders. Information on our stakeholder groups is listed in the Stakeholder Engagement, p. 63. In addition, we report on the following topics in the Value Chain Statements section:

- Monitoring of the supplier assessment for indirect procurement, note V4
- Product regulatory compliance, note V5
- Monitoring of our donations, note V6

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

VALUE CHAIN AND SOCIETY PERFORMANCE POLICY

Our approach to stakeholder engagement derives from the vision, values and organisational principles found in The Umicore Way. Specific charters/policies have been developed to frame specific elements of our approach to stakeholder engagement, including the Sustainable Procurement Charter, Responsible global supply chain of minerals from conflict-affected and high risk areas, Policy, Human Rights & Working Conditions Policy and External Communications Policy.

VALUE CHAIN AND SOCIETY PERFORMANCE RESPONSIBILITY

Our presence and impact both 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. In addition, a team comprising members of various departments, including Corporate EHS, Corporate HR, Group Communications, Corporate Finance and Procurement & Transportation, meets regularly to map the overall stakeholder expectations and to convene, whenever necessary, internal or external stakeholder dialogue sessions.

VALUE CHAIN AND SOCIETY PERFORMANCE BOUNDARY

The value chain and society theme focuses on potential impacts on society incurred through our activities, products and services. For reporting, all entities are considered. While we focus primarily on those of our activities that are directly linked to clean mobility and recycling, other initiatives targeting suppliers, customers or society are tracked and appropriately reported, whether through communications such as this annual report or through other specific communication channels.

CORPORATE GOVERNANCE REPORT

REMUNERATION 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 (www.corporategovernancecommittee.be).

The Corporate Governance Charter describes in detail the governance structure of the Company and the policies and procedures of the Umicore group. The Charter is available on the Umicore website (http://www.umicore.com/en/governance/corporate-governance-charter/) and may be obtained on request from Umicore's Group Communications Department.

Umicore has articulated its mission, values and basic organizational 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 note G9).

In terms of organizational philosophy, Umicore believes in decentralization 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, the executive committee and 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 2018.

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 to address these. The executive committee is responsible for defining and applying Umicore's approach to sustainable development.

Umicore is organized 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, tax, and public and investor relations.

G3 SHAREHOLDERS

3.1 ISSUED SHARES – CAPITAL STRUCTURE

On 31 December 2018 there were 246,400,000 Umicore shares in issue, compared to 224,000,000 on 31 December 2017. This increase resulted from the capital increase dated 12 February 2018. Following this capital increase, the Company's capital was increased by € 50,000,000 through the issuance of 22,400,000 new shares. The new shares were fully subscribed and paid up for a total gross amount of € 891,520,000 (issuance premium included). The capital increase took place in the framework of the authorized capital and was realized by way of a private placement to institutional investors through an accelerated bookbuilding procedure. The preferential subscription right of the existing shareholders was disapplied with respect to this capital increase.

The identity of shareholders having declared a participation of 3% or more as of 31 December 2018 can be found in Parent Company Separate Summarized Financial Statements, p.157.

Also on 31 December 2018 Umicore owned 5,356,583 of its own shares representing 2.17% of its capital. Information concerning the shareholders' authorization 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 1,037,470 own shares were used in the context of the exercise of employee stock options and 70,502 shares were used for share grants, of which 10,002 to the board members, 54,800 to the executive committee members and 5,700 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 2018 Umicore paid a gross dividend of € 0,70 EUR per share relating to the financial year 2017. This was an increase by € 0.05 EUR compared to the gross dividend paid in 2017 in respect of the financial year 2016.

In July 2018 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. As a result, a gross interim dividend of € 0.35 per share was paid on 28 August 2018.

3.3 SHAREHOLDERS' MEETINGS 2018

The annual shareholders' meeting was held on 26 April 2018. 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 2017 mandates. At the same meeting, the shareholders appointed Mr Koenraad Debackere as new, independent director for a period of 3 years. Furthermore, the mandates of Messrs Thomas Leysen and Marc Grynberg as director were renewed for 3 years, and the mandates of Messrs Mark Garrett and Eric Meurice as independent directors were also renewed for 3 years. The annual shareholders' meeting also approved the remuneration of the board for 2018. Details of the fees paid to the directors in 2018 are disclosed in the remuneration report.

Also on 26 April 2018, an extraordinary shareholders' meeting renewed the authorization conferred to the Company and its direct subsidiaries to acquire Umicore shares and the authorization granted to the board of directors to increase the Company's capital (ie the authorized capital). These renewed authorizations are valid until respectively 31 May 2022 and 28 May 2023.

G4 BOARD OF DIRECTORS

4.1 COMPOSITION

The board of directors, the members of which are appointed by the shareholders' meeting resolving by a simple majority of votes without any attendance requirement, is composed of at least 6 members. The directors' term of office may not exceed 4 years. In practice, directors are elected for a (renewable) period of 3 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 2018, the board of directors was composed of 10 members: 9 non-executive directors and one executive director.

On the same date 6 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.

In terms of gender and cultural diversity, the Board counts 3 women and 6 different nationalities among its 10 members. Diversity also arises from the board members' educational backgrounds which include engineering, law, economics, finance and applied languages. The board's cumulative industry experience is broad, covering automotive, electronics, chemicals, metals, energy, finance and scientific/educational 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 9 active or former CEOs 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 2018:

- Mr Koenraad Debackere was appointed independent director for a period of 3 years at the annual shareholders' meeting held on 26 April 2018;
- The mandate of Mr Rudi Thomaes as independent director expired on 26 April 2018

Furthermore, the mandates of the following directors were renewed for 3 years in 2018:

- Messrs Thomas Leysen and Marc Grynberg, as directors;
- Messrs Mark Garrett and Eric Meurice, as independent directors.

4.2 MEETINGS AND TOPICS

The board of directors held 5 regular meetings in 2018. On one occasion the board also took decisions by unanimous written consent.The matters reviewed by the board in 2018 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 (including the remuneration report);
- approval of the agenda of an ordinary and an extraordinary shareholders' meeting and calling of these meetings;

- capital increase in the context of the authorized capital through an accelerated bookbuilding procedure;
- Umicore culture and board functioning review;
- investment and divestment projects;
- funding mandates;
- EHS review, including sustainable development;
- audit committee reports;
- strategic opportunities and operational challenges;
- business risk assessment;
- business reviews and market updates;
- mergers & acquisitions projects;
- annual performance review of the CEO and the other members of the executive committee;
- 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 sites in Suzhou (China) and the production facility for cathode materials in Jiangmen (China).

4.3 PERFORMANCE REVIEW OF THE BOARD AND ITS COMMITTEES

The chairman regularly conducts a performance review of the board and its committees.

The last performance review took place in 2018, based on an open discussion during the board meeting of 24 September 2018. The assessment included the following items: composition of the board, selection and appointment of directors, functioning of the board, quality of information and discussions, culture within the board, performance of duties by the board, relations with the executive committee, and the audit and nomination & remuneration committees.

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 3 non-executive directors, 2 of them being independent. It is chaired by Mrs Ines Kolmsee.

The composition of the audit committee underwent one change in 2018: Mr Rudi Thomaes was replaced by Mr Koenraad Debackere with effective date 26 April 2018.

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

The committee met 5 times in 2018. Apart from the review of the 2017 full year and the 2018 half year accounts, the audit committee reviewed reports and discussed matters related to internal audit and risk management, including the effectiveness of controls and mitigation plans. Particular attention was given to risk management matters related to the business group Energy & Surface Technologies in view of its fast growth. The 2019 internal audit plan was validated. The committee met with the Group's auditor and reviewed and approved provided non-audit services. Considerations related to auditor rotation were discussed.

4.5 NOMINATION & REMUNERATION COMMITTEE

The nomination & remuneration committee is composed of 3 members, who are all non-executive directors, 2 of them being independent. It is chaired by the chairman of the board.

The composition of the nomination & remuneration committee underwent one change in 2018: Mr Rudi Thomaes was replaced by Mrs Françoise Chombar with effective date 26 April 2018.

5 nomination & remuneration committee meetings were held in 2018. During the same period the committee discussed the remuneration policy for the board members, the board committee members and executive committee members, and the rules of the stock grant and option plans offered in 2018. 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 4 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 underwent the following changes in 2018:

- Mr Marc Van Sande retired and left the executive committee on 31 March 2018;
- Mrs An Steegen was appointed Chief Technology Officer and member of the executive committee with effective date 1 October 2018.

On 31 December 2018 the executive committee was composed of 7 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 to and discussed to/by the board of directors.

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

The above performance reviews took place on 8 February 2018.

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 2018, save for the 5,356,583 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 authorized capital, only an extraordinary shareholders' meeting is authorized 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, 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 were amended once in 2018, following the renewal of the authorized capital approved by the extraordinary shareholders' meeting held on 26 April 2018.

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 "authorized capital". The authorization must be granted by an extraordinary shareholders' meeting; it is limited in time and amount and is subject to specific justification and purpose requirements.

Under the previously approved authorized capital (extraordinary shareholders' meeting held on 26 April 2016 and published on 13 May 2016) the board was authorized to increase the Company's capital by a maximum amount of € 50,000,000.

On 12 February 2018 the board used the above authorization to increase the Company's share capital by € 50,000,000 through the issuance of 22,400,000 new shares. The new shares were fully subscribed and paid-up for a total gross amount of € 891,520,000 (issuance premium included). This capital increase was realized by way of a private placement to institutional investors through an accelerated bookbuilding procedure. The preferential subscription right of the existing shareholders was disapplied with respect to this capital increase.

The extraordinary shareholders' meeting held on 26 April 2018 (resolutions published on 29 May 2018) renewed the authorization granted to the board to increase the Company's share capital. The board is now authorized to increase the capital in one or more times, now by a maximum amount of € 55,000,000. Up until 31 December 2018, the board had not used this renewed authorization. The authorization will lapse on 28 May 2023.

Following a resolution of the extraordinary shareholders' meeting held on 26 April 2018 the Company is authorized to acquire own shares on a regulated market within a limit of 10% of the subscribed capital, at a price per share comprised between € 4 and € 100 and until 31 May 2022 (included). The same authorization was also granted to the Company's direct subsidiaries. The Company acquired 1,958,988 own shares in 2018 in implementation of the above authorization.

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 12 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.83).

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

On 8 February 2018, 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 € 700,000 in 2018. Also in 2018, he received a gross variable cash remuneration totalling € 220,000 as non-deferred part of his variable cash remuneration for the reference year 2017.

Furthermore he received in 2018 a gross amount of € 130,950 as first half of the deferred payment of his variable cash remuneration for the reference year 2016 based on (1) the 2-year average Umicore group profitability criterion, ie the average return on capital employed (ROCE) for the reference years 2016 and 2017 (ie 14.9% giving rise to a percentage pay-out of 74%) and (2) the 2-year average EBIT growth for the same reference years 2016 and 2017 multiplied by 2 (ie 11.6% giving rise to a percentage pay-out of 23%). Also in 2018 he received a gross amount of € 133,650 as the second half of the deferred payment of his variable cash remuneration for the reference year 2015 based on (1) the 3-year average Umicore group ROCE for the reference years 2015, 2016 and 2017 (ie 14.5% giving rise to a percentage pay-out of 70%) and (2) the 3-year average EBIT growth for the same reference years 2015, 2016 and 2017 multiplied by 2 (ie 14.5% giving rise to a percentage pay-out of 29%).

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. The impact of the EBIT growth is calculated by multiplying the average percentage of the EBIT growth for the reference years by 2.

In 2019 he will receive the second half of the deferred payment of his annual variable cash remuneration for the reference year 2016 based on (1) the 3-year average Umicore group ROCE for the reference years 2016, 2017 and 2018 and (2) the 3-year average Umicore EBIT growth for the same reference years 2016, 2017 and 2018.

Upon recommendation of the nomination & remuneration committee, the board of directors decided on 8 February 2018 that, as from reference year 2017 a deferment of 3 years applies with a pay-out after 3 years for each reference year, based upon a 3-year average ROCE and recurring EBIT growth. With respect to the 3-year average recurring EBIT growth, the threshold increased from 2% to a minimum of average recurring EBIT growth of 10%.

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 2018, 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 25 April 2017 the statutory auditor's mandate of PricewaterhouseCoopers Bedrijfsrevisoren/Réviseurs d'Entreprises BCVBA/SCCRL was renewed for a period of 3 years. The statutory auditor is represented by Mr Kurt Cappoen 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 once, ie 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 "whistleblower" 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, which 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.

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 listed 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 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, at the end of 2017 Umicore conducted a survey of Umicore directors' fees against those of listed companies which make up 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 on 7 February 2018.

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 for the Chairman requires adjustment. The nomination & remuneration committee proposed to the board an increase of the Chairman's annual fixed fee by € 20,000, the annual fixed fee of the other members of the board remaining unchanged.

The board of directors of 8 February 2018 followed this recommendation and the annual shareholders' meeting of 26 April 2018 approved the non-executive directors' remuneration.

The remuneration of the non-executive board members was as follows in 2018:

- **Chairman:** annual fixed fee: € 60,000 + € 5,000 per meeting attended + 2,000 Umicore shares.
- **Director:** annual fixed fee: € 27,000 + € 2,500 per meeting attended + € 1,000 per meeting attended for foreign-based board members + 1,000 Umicore shares.

The remuneration of the board Committee members was as follows in 2018:

AUDIT COMMITTEE

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

NOMINATION & REMUNERATION COMMITTEE

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

2018 BOARD REMUNERATION OVERVIEW

		(IN EUROS)	MEETINGS ATTENDED
Thomas Leysen (Chairman) (Non-Executive Director)	**Board**		
	Fixed annual fee	60,000	
	Fee per attended meeting	5,000	5/5
	Value of 2,000 granted shares	99,680	
	Nomination & Remuneration Committee		
	Fee per attended meeting	5,000	5/5
	Total remuneration	**209,680**	
	Benefit in kind company car	2,563	
Marc Grynberg (Executive Director)	**Board**		
	No remuneration as a Director (see hereafter 2018 CEO remuneration)		5/5
Liat Ben-Zur (Independent, Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	4/5
	Value of 1,000 granted shares	49,840	
	Total remuneration	**90,840**	
Françoise Chombar (Independent, Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	2,500	5/5
	Value of 1,000 granted shares	49,840	
	Nomination & Remuneration Committee		
	Fee per attended meeting	3,000	4/4
	Total remuneration	**101,340**	

continued

		(IN EUROS)	MEETINGS ATTENDED
Koenraad Debackere (Independent, Non-Executive Director) Appointed by the AGM of 26 April 2018	**Board**		
	Fixed annual fee	18,493	
	Fee per attended meeting	2,500	3/3
	Value of 684 granted shares	34,091	
	Audit Committee		
	Fixed annual fee	3,425	
	Fee per attended meeting	3,000	3/3
	Total remuneration	**72,508**	
Mark Garrett (Independent, Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	4/5
	Value of 1,000 granted shares	49,840	
	Nomination & Remuneration Committee		
	Fee per attended meeting	3,000	5/5
	Total remuneration	**105,840**	
Colin Hall (Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	4/5
	Value of 1,000 granted shares retroceded to GBL	49,840	
	Audit Committee		
	Fixed annual fee	5,000	
	Fee per attended meeting	3,000	3/5
	Total remuneration	**104,840**	
Ines Kolmsee (Independent, Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	4/5
	Value of 1,000 granted shares	49,840	
	Audit Committee		
	Fixed annual fee	10,000	
	Fee per attended meeting	5,000	5/5
	Total remuneration	**125,840**	
Gérard Lamarche (Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	5/5
	Value of 1,000 granted shares retroceded to GBL	49,840	
	Total remuneration	**94,340**	

		(IN EUROS)	MEETINGS ATTENDED
Eric Meurice (Independent, Non-Executive Director)	**Board**		
	Fixed annual fee	27,000	
	Fee per attended meeting	3,500	4/5
	Value of 1,000 granted shares	49,840	
	Total remuneration	**90,840**	
Rudi Thomaes (Independent, Non-Executive Director) End of mandate: AGM of 26 April 2018	**Board**		
	Fixed annual fee	8,581	
	Fee per attended meeting	2,500	1/2
	Value of 318 granted shares	15,849	
	Audit Committee		
	Fixed annual fee	1,589	
	Fee per attended meeting	3,000	2/2
	Nomination & Remuneration Committee		
	Fee per attended meeting	3,000	1/1
	Total remuneration	**37,519**	

G13 CEO AND EXECUTIVE COMMITTEE REMUNERATION

REMUNERATION POLICY FOR THE CEO AND EXECUTIVE COMMITEE

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 and benefits package for the CEO and executive committee members includes the following components: fixed remuneration, variable remuneration, share-based incentives (share grant subject to a 3-year lock-up period and incentive stock option plans that can only be exercised after three years), 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 are granted each year to the CEO and executive committee members in respect of the prior year and are subject to a 3-year lock-up period. As stock options are irrevocably taxed upon grant according to Belgian law, they have to vest at the time of granting and are therefore 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. As from the reference year 2017 a deferment of 3 years applies with one deferred payout after 3 years in accordance with the performance criteria (3-year average ROCE and 3-year average recurring EBIT).

SYNTHETIC SUMMARY OF THE REMUNERATION OF THE CEO AND THE EXECUTIVE COMMITTEE MEMBERS

TIME TO CASH CONVERSION

Year of reference (y)	Fixed	Annual review based on market practices BEL20 and European peer companies
15 months	Undeferred variable 50%	Fixed discretionary based on individual objectives
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
39 months	Deferred variable 50%	Based on the 3-year average Group ROCE and Group recurring EBIT growth (y, y+1, y+2)
3 to 7 years	Stock options	Upfront grant for the ref year – not linked to individual or business performance criteria – can only be exercised after three years

The above remuneration components are defined and assessed by the nomination & 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 € 540,000, half of which involves an undeferred pay-out 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. Financial criteria include ROCE, recurring EBIT and EBITDA with budget and year-on-year progress being used as reference. Strategic and sustainable development objectives are tied to Horizon 2020 covering economic performance, value chain and society, eco-efficiency and great place to work.

On proposal of the nomination & remuneration committee, the board of directors of 9 February 2017 approved a new concept of the deferred variable remuneration applicable as of pay-outs in 2018. The new concept intends to reward for the quality of the results (Group ROCE criterion) and provide an incentive for growth (Group recurring EBIT growth criterion).

Upon recommendation of the nomination & remuneration committee, the board of directors decided on 8 February 2018 that, as from reference year 2017 a deferment of 3 years applies, with a pay-out after 3 years for each reference year, based upon a 3-year average ROCE and recurring EBIT growth. With respect to the 3-year average recurring EBIT growth, the threshold increased from 2% to a minimum of average recurring EBIT growth of 10%.

The ROCE range is set between 7.5% (= pay-out of 0%) and a maximum of 17.5% (= pay-out of 100%). When the achieved ROCE percentage falls between the minimum threshold and the maximum target, the pay-out will be pro-rated. In case the 10% average recurring EBIT growth threshold is reached, the recurring EBIT growth percentage will be multiplied by 2 and added to the ROCE pay-out percentage. There will be no adjustment for recurring EBIT growth below 10%.

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 2018 was 10,400. The shares are subject to a 3-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 amounted in 2018 to 150,000. As stock options are irrevocably taxed upon grant according to Belgian law, there is no vesting period. The options can only be exercised after 3 years. 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 € 300,000, half of which involves an undeferred pay-out based on the annual individual performance (including adherence to the values of the Group, environmental and social performance).

On proposal of the nomination & remuneration committee, the board of directors of 9 February 2017 approved a new concept of the deferred variable remuneration applicable as of pay-outs in 2018. The new concept intends to reward for the quality of the results (Group ROCE criterion) and provide an incentive for growth (Group recurring EBIT growth criterion).

Upon recommendation of the nomination & remuneration committee, the board of directors decided on 8 February 2018 that, as from reference year 2017 a deferment of 3 years applies, with a pay-out after 3 years for each reference year, based upon a 3-year average ROCE and recurring EBIT growth. With respect to the 3-year average recurring EBIT growth, the threshold increased from 2% to a minimum of average recurring EBIT growth of 10%.

The ROCE range is set between 7.5% (= pay-out of 0%) and a maximum of 17.5% (= pay-out of 100%). When the achieved ROCE percentage falls between the minimum threshold and the maximum target, the pay-out will be pro-rated. In case the 10% average recurring EBIT growth threshold is reached, the recurring EBIT growth percentage will be multiplied by 2 and added to the ROCE pay-out percentage. There will be no adjustment for recurring EBIT growth below 10%.

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 financial performance, the progress achieved against Group strategic and sustainable development objectives, and adherence to the values of the Group. Financial criteria include ROCE, recurring EBIT and EBITDA with budget and year-on-year progress being used as reference. Strategic and sustainable development objectives are tied to Horizon 2020 covering economic performance, value chain and society, eco-efficiency and great place to work.

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 2018 was 7,400. The shares are subject to a 3-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 amounted in 2018 to 35,000. As stock options are irrevocably taxed upon grant according to Belgian law, there is no vesting period. The options can only be exercised after 3 years. 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 2018

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 EUROS)	CEO	EXECUTIVE COMMITTEE (IN AGGREGATE)
Status	Self-employed	
Fixed	700,000	2,306,250
Undeferred Variable 50% (ref year 2018 – pay-out 2019)	220,000	662,500
Deferred Variable 25% (ref year 2016 – pay-out 2019)	144,450	481,500
Shares (ref year 2018 – grant in 2019)	354,432	1,381,284
Stock options (ref year 2018 – grant in 2018)	1,033,500	1,266,038
Pension:		
Defined contribution plan	51,156	149,452
Defined benefits plan (service cost)	117,241	512,156
Other benefits: Representation allowance, benefit in kind company car, insurance benefits	51,631	123,293
Total	**2,672,410**	**6,882,473**

G14 SHARE AND SHARE OPTION OWNERSHIP AND TRANSACTIONS 2018

EXECUTIVE COMMITTEE SHARE OPTION OWNERSHIP AND TRANSACTIONS 2018*

	OPTIONS AT 31 DEC 2017	OPTIONS GRANTED IN 2018	NUMBER OF OPTIONS EXERCISED IN 2018	AVERAGE EXERCISE PRICE (IN €)	YEAR OF GRANT OF OPTIONS EXERCISED	NUMBER OF OPTIONS FORFEITED	OPTIONS AT 31 DEC 2018*
Marc Grynberg	750,000	150,000	30,000	18.187	2013	0	870,000
Stephan Csoma	140,000	35,000	70,000	16.716	2014/2015	0	105,000
Denis Goffaux	140,000	35,000	35,000	16.143	2014	0	140,000
Géraldine Nolens	94,000	35,000	0	0	–	0	129,000
Filip Platteeuw	128,000	35,000	23,000	16.143	2014	0	140,000
Pascal Reymondet	105,000	35,000	17,500	17.289	2015	0	122,500
An Steegen		0	0	0	0	0	0

* These options can be exercised at strike prices between € 16,143 and € 40.90 (value after the share split on 16 October 2017).

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 2018

(ON 31 DECEMBER 2018)	SHARES OWNED AT 31/12/2017	SHARES OWNED AT 31/12/2018
Marc Grynberg	767,600	813,700
Stephan Csoma	29,200	36,600
Denis Goffaux	42,200	49,600
Géraldine Nolens	12,100	19,500
Filip Platteeuw	30,200	37,600
Pascal Reymondet	57,700	65,100
An Steegen		0
Total	**939,000**	**1,022,100**

BOARD OF DIRECTORS SHARE OWNERSHIP 2018

(ON 31 DECEMBER 2018)	SHARES OWNED AT 31/12/2017	SHARES OWNED AT 31/12/2018
Thomas Leysen	883,960	806,000
Liat Ben-Zur	688	1,688
Françoise Chombar	1,684	2,684
Mark Garrett	2,666	3,666
Colin Hall	–	–
Ines Kolmsee	5,610	6,610
Gérard Lamarche	3,000	3,000
Eric Meurice	2,666	3,666
Debackere Koenraad	–	684
Total	**900,274**	**827,998**

CONTRACTUAL RELATIONSHIPS

CONTRACT BETWEEN UMICORE AND MARC GRYNBERG, CEO

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 months 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 to determine whether the variable cash remuneration would form part of any final indemnity

INDIVIDUAL ARRANGEMENTS IN CASE OF TERMINATION OF THE CONTRACT BY UMICORE

The agreements with the executive committee members appointed before 1 July 2018 include a compensation equivalent to 18 months of the annual base salary in case of contract termination. In line with the Belgian Corporate Governance Law of 6 April 2010, this arrangement was approved by the board of directors respectively on 1 June 2010 (for Denis Goffaux), on 18 September 2012 (for Stephan Csoma and Filip Platteeuw) and on 28 April 2015 (for Géraldine Nolens), following the recommendation of the nomination & remuneration committee.

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.

For the executive committee members appointed after 1 July 2018, a 12 months compensation of the annual base salary will apply in case of contract termination.

For all 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.

G15 CHANGES TO REMUNERATION SINCE THE END OF 2018

NON-EXECUTIVE DIRECTORS' REMUNERATION

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 compensation is appropriate.

CEO'S REMUNERATION

On 6 February 2019, 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 7 February 2019 decided to increase the annual variable cash remuneration potential of the CEO by € 160,000 to € 700,000 as of 1 January 2019, half of which is deferred over 3 years. The number of share-based incentives (stock options) will decrease from 150,000 to 140,000. The fixed remuneration has not been adjusted and remains at € 700,000.

EXECUTIVE COMMITTEE MEMBERS' REMUNERATION

The nomination & remuneration committee of 6 February 2019 reviewed the remuneration of the executive committee members. On proposal of the nomination & remuneration committee, the board of directors of 7 February 2019 decided to adjust the annual fixed remuneration of the executive committee members by € 20,000 to € 420,000 and to increase their annual variable cash remuneration potential by € 80,000 to € 380,000 as of 1 January 2019, half of which is deferred over 3 years.

The number of share-based incentives (stock options) will decrease from 35,000 to 30,000.

Following the recommendation of the nomination & remuneration committee of 6 February 2019, the board of directors decided on 7 February 2019 that, similar to the CEO, the members of the executive committee may also receive their variable cash remuneration partly or totally in the form of Umicore shares at their discretion.

GROUP

KEY FIGURES

(in million Euros unless stated otherwise)	NOTE	2014	2015	2016	2017	2018
Turnover*		8,828.5	10,441.9	11,085.9	12,277.2	13,716.7
Revenues (excluding metal)		2,366.5	2,629.0	2,667.5	2,915.6	3,271.1
Recurring EBITDA	F9	442.2	504.7	526.8	599.3	720.1
Recurring EBIT	F9	273.7	330.3	350.7	410.3	513.6
of which associates	F9	28.3	14.3	18.3	29.6	5.4
Non-recurring EBIT	F9	(21.6)	(74.9)	(110.2)	(46.2)	(13.6)
IAS 39 effect on EBIT	F9	(2.7)	(2.7)	(9.0)	(20.7)	0.0
Total EBIT	F9	249.3	252.7	231.6	343.3	500.0
Recurring EBIT margin (in %)		10.4	12.0	12.5	13.1	15.5
Return on Capital Employed (ROCE) (in %)	F31	12.2	13.7	14.6	15.1	15.4
Effective recurring tax rate (in %)	F13	21.8	21.4	25.0	25.7	24.4
Recurring net profit, Group share	F9	193.1	246.0	232.9	266.8	326.4
Result from discontinued operations, Group share		14.4	16.4	(50.3)	(2.9)	0.0
Net profit, Group share	F9	170.6	169.2	130.7	211.9	317.0
R&D expenditure	F9	143.3	144.5	155.9	175.2	196.4
Capital expenditure	F34	202.4	240.3	287.3	365.3	477.6
Net cash flow before financing	F34	139.9	119.0	141.9	(381.0)	(604.0)
Total assets of continued operations, end of period		3,851.4	4,030.1	4,145.7	5,115.7	6,053.3
Group shareholders' equity, end of period		1,704.6	1,731.6	1,789.6	1,803.0	2,609.4
Consolidated net financial debt of continued operations, end of period	F24	298.3	321.3	296.3	839.9	861.0
Gearing ratio of continued operations, end of period (in %)	F24	14.6	15.3	13.8	31.1	24.4
Net debt/recurring EBITDA (in %)		67.0	64.0	56.0	140.0	119.0
Capital employed, end of period	F31	2,335.3	2,414.5	2,397.4	3,003.5	3,802.4
Capital employed, average	F31	2,240.1	2,402.2	2,398.7	2,710.0	3,344.2

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

Umicore's 2018 consolidated financial statements include certain adjustments compared to the preliminary statements included in the 2018 full year results press release published on 8 February 2019. None of the adjustments have any impact on Umicore's key performance indicators (revenues (excluding metal), earnings, related margins or cash flows) nor on any of the 2018 business reviews as published on 8 February 2019. These adjustments reflect a correction of certain intra company elimination bookings made as part of the completion of Umicore's 2018 full year closing process.
Compared to the preliminary statements as included in the 2018 full year press release published on 8 February 2019, the adjustments are as follows:

- In relation to the 2018 consolidated income statement: intra company eliminations leading to a decrease of both the cost of raw materials and consumables and turnover by € 1,070 million respectively as compared to the preliminary statements. Consequently, operating expenses and operating income are decreased by the same amount.
- In relation to the 2018 consolidated balance sheet: intra company eliminations leading to a decrease of both trade and other receivables and trade and other payables by € 352 million respectively as compared to the preliminary statements. Consequently, current assets and current liabilities, and total assets and total liabilities are decreased by the same amount.

DATA PER SHARE

(in Euros/share)	NOTE	2014	2015	2016	2017	2018
Earnings per share						
Recurring EPS	F39	0.89	1.13	1.07	1.22	1.36
EPS – basic	F39	0.79	0.78	0.60	0.97	1.33
EPS – diluted	F39	0.79	0.78	0.60	0.96	1.31
Gross dividend		0.50	0.60	0.65	0.70	0.75
Net cash flow before financing, basic	F34	0.65	0.55	0.65	(1.74)	(2.53)
Total assets of continued operations, end of period		17.82	18.65	18.96	23.31	25.11
Group shareholders' equity, end of period		7.89	8.01	8.18	8.21	10.83
Shareprice						
High		19.11	22.78	29.36	39.88	53.14
Low		15.21	15.91	16.19	24.28	34.17
Average		17.16	19.56	23.89	31.45	45.01
Close		16.66	19.34	27.08	39.46	34.86

All Group KPIs included the discontinued operations until September 2017, unless mentioned otherwise. Zinc Chemicals contributed 6 months in 2016 and Building Products until end September 2017.

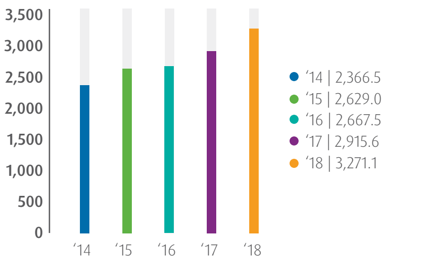
On 16 October 2017 each Umicore share was split into 2 new shares. As a result, as from that date, Umicore's capital is represented by 224,000,000 fully paid-up shares without nominal value, each representing 1/224,000,000 of the capital. All data was updated accordingly.

NUMBER OF SHARES

	NOTE	2014	2015	2016	2017	2018
Total number of issued shares, end of period	F39	224,000,000	224,000,000	224,000,000	224,000,000	246,400,000
of which shares outstanding	F39	216,171,456	216,144,932	218,653,700	219,494,433	241,043,417
of which treasury shares	F39	7,828,544	7,855,068	5,346,300	4,505,567	5,356,583
Average number of shares outstanding, basic	F39	216,124,170	216,890,256	217,775,656	219,079,587	239,202,537
Average number of shares outstanding, diluted	F39	216,903,694	217,854,490	219,370,320	221,148,890	241,686,593

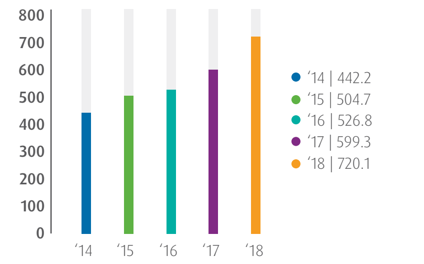
REVENUES (EXCLUDING METAL)

Million Euros



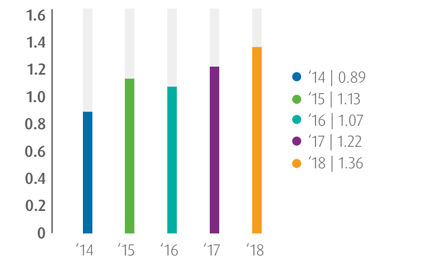
RECURRING EBITDA

Million Euros



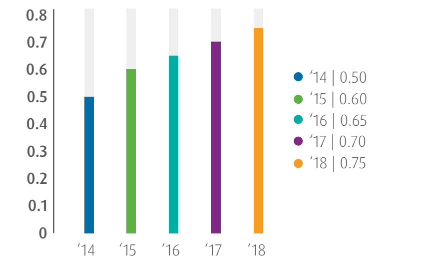
RECURRING EPS

Euros



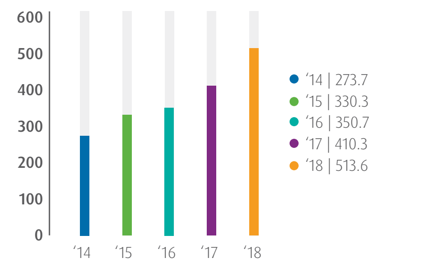
GROSS DIVIDEND

Euros



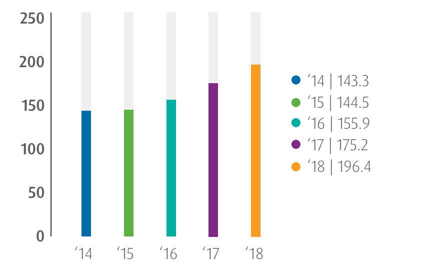
RECURRING EBIT

Million Euros



R&D EXPENDITURE

Million Euros

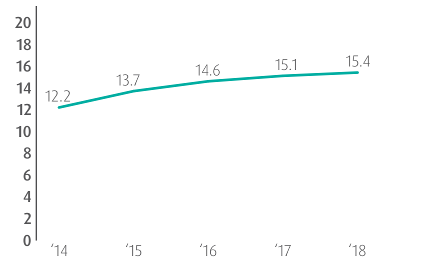


SHARE PRICE

Euros

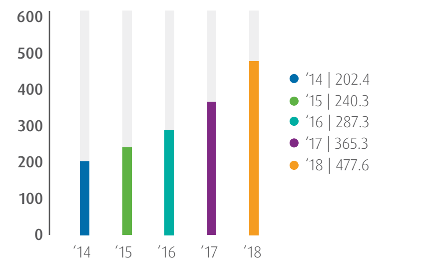
RETURN ON CAPITAL EMPLOYED (ROCE)

%



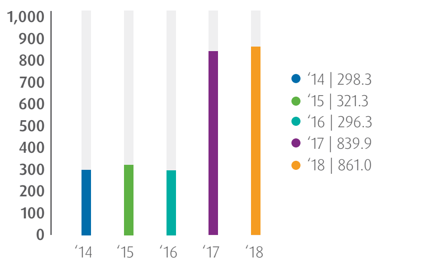
CAPITAL EXPENDITURE

Million Euros



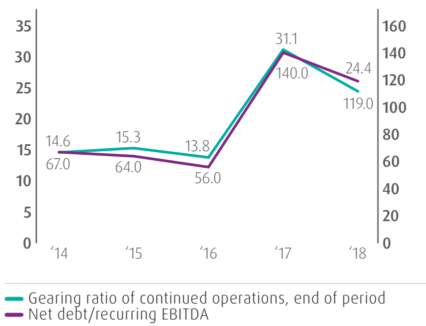
NET FINANCIAL DEBT

Million Euros



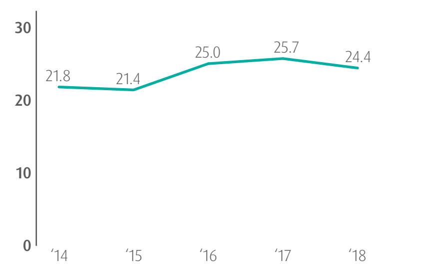
GEARING RATIO & AVERAGE NET DEBT/RECURRING EBITDA

%



RECURRING TAX RATE

%

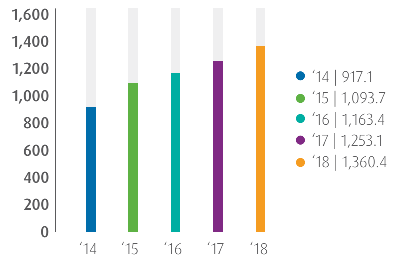


CATALYSIS

(in millions of Euros unless stated otherwise)	2014	2015	2016	2017	2018
Total turnover	2,181.3	2,749.3	2,779.1	3,090.6	3,311.0
Total revenues (excluding metal)	917.1	1,093.7	1,163.4	1,253.1	1,360.4
Recurring EBITDA	124.9	172.3	203.4	224.4	237.2
Recurring EBIT	82.6	124.2	152.5	165.5	168.2
of which associates	7.0	8.8	9.2	0.4	0.0
Total EBIT	79.9	115.9	125.6	161.2	162.3
Recurring EBIT margin (in %)	8.2	10.6	12.3	13.2	12.4
R&D expenditure	83.2	91.1	102.0	119.8	135.5
Capital expenditure	59.8	78.7	46.5	45.0	78.8
Capital employed, end of period	851.4	968.2	911.2	1,149.6	1,264.9
Capital employed, average	811.4	929.6	917.7	1,014.3	1,200.2
Return on Capital Employed (ROCE) (in %)	10.2	13.4	16.6	16.3	14.0
Workforce, end of period (fully consolidated)	2,290	2,443	2,464	2,952	3,070
Workforce, end of period (associates)	167	168	177	–	–

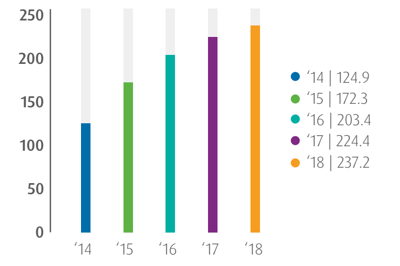
REVENUES (EXCLUDING METAL)

Million Euros



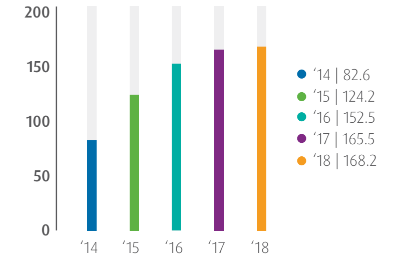
RECURRING EBITDA

Million Euros



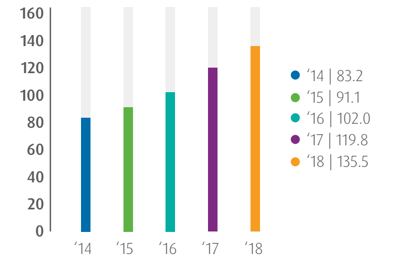
RECURRING EBIT

Million Euros



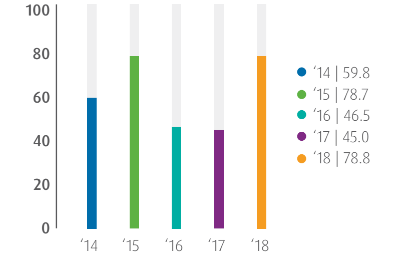
R&D EXPENDITURE

Million Euros



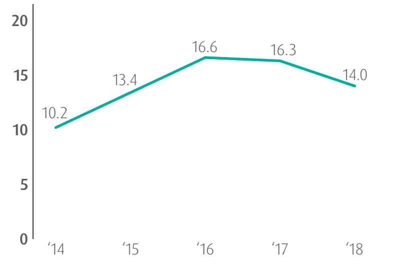
CAPITAL EXPENDITURE

Million Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%

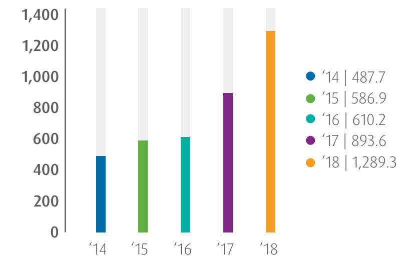


ENERGY & SURFACE TECHNOLOGIES*

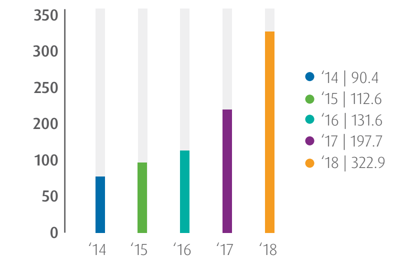
(in millions of Euros unless stated otherwise)	2014	2015	2016	2017	2018
Total turnover	1,191.6	1,475.1	1,469.0	2,392.4	3,650.2
Total revenues (excluding metal)	487.7	586.9	610.2	893.6	1,289.3
Recurring EBITDA	90.4	112.6	131.6	197.7	322.9
Recurring EBIT	54.1	70.2	81.7	140.7	256.6
of which associates	4.7	(3.5)	1.0	10.5	0.9
Total EBIT	53.4	37.3	74.2	109.7	251.3
Recurring EBIT margin (in %)	10.1	12.6	13.2	14.6	19.8
R&D expenditure	19.9	20.3	20.2	30.4	38.8
Capital expenditure	46.6	42.5	144.3	225.5	316.1
Capital employed, end of period	618.6	633.4	752.0	1,205.8	1,769.1
Capital employed, average	535.8	640.0	695.3	977.9	1,469.4
Return on Capital Employed (ROCE) (in %)	10.1	11.0	11.7	14.4	17.5
Workforce, end of period (fully consolidated)	2,181	2,258	2,357	2,716	3,447
Workforce, end of period (associates)	930	936	847	917	782

* Adjusted turnover figure for 2018 compared to the preliminary statements included in the February 8 2019 press release, as explained in the note on p. 90.

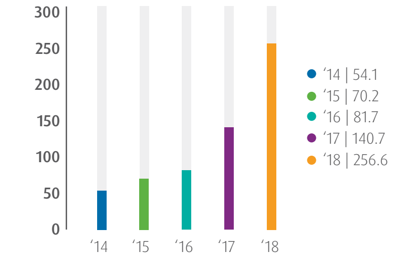
REVENUES (EXCLUDING METAL)
Million Euros



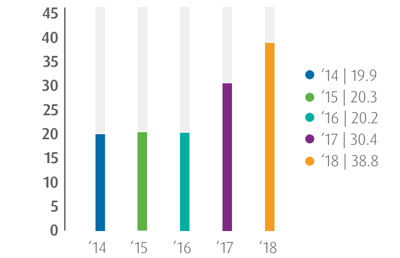
RECURRING EBITDA
Million Euros



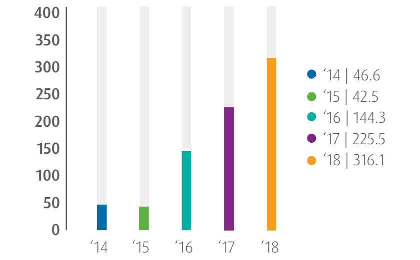
RECURRING EBIT
Million Euros



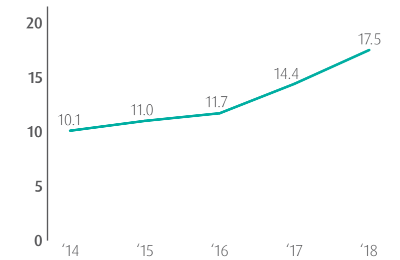
R&D EXPENDITURE
Million Euros



CAPITAL EXPENDITURE
Million Euros



RETURN ON CAPITAL EMPLOYED (ROCE)
%

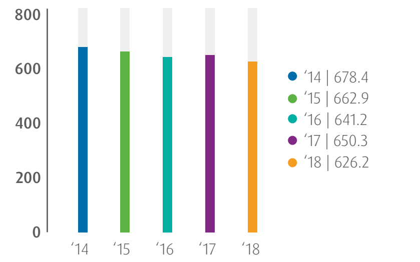


RECYCLING

(in millions of Euros unless stated otherwise)	2014	2015	2016	2017	2018
Total turnover	5,326.2	6,252.1	6,886.4	7,326.7	7,625.4
Total revenues (excluding metal)	678.4	662.9	641.2	650.3	626.2
Recurring EBITDA	208.7	204.3	187.2	188.9	194.7
Recurring EBIT	148.6	141.5	124.9	127.9	134.8
Total EBIT	141.2	132.5	115.5	121.3	125.8
Recurring EBIT margin (in %)	21.9	21.3	19.5	19.7	21.5
R&D expenditure	24.3	21.2	23.0	18.6	15.2
Capital expenditure	63.8	83.0	72.3	79.5	68.4
Capital employed, end of period	411.7	465.9	498.1	474.5	546.4
Capital employed, average	472.6	460.2	474.5	494.9	483.1
Return on Capital Employed (ROCE) (in %)	31.4	30.7	26.3	25.8	27.9
Workforce, end of period (fully consolidated)	3,302	3,211	3,170	3,092	2,832
Workforce, end of period (associates)	–	–	–	–	–

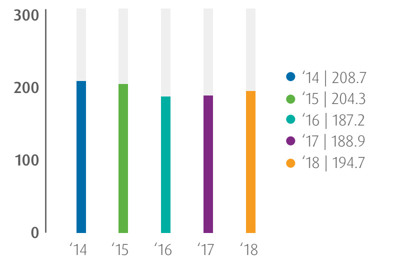
REVENUES (EXCLUDING METAL)

Million Euros



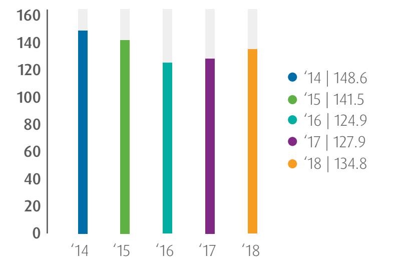
RECURRING EBITDA

Million Euros



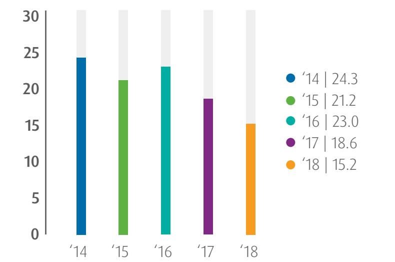
RECURRING EBIT

Million Euros



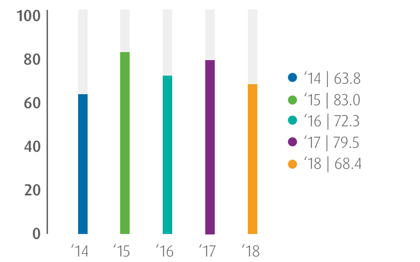
R&D EXPENDITURE

Million Euros



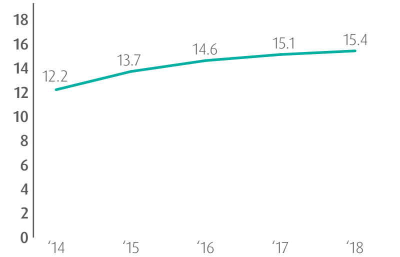
CAPITAL EXPENDITURE

Million Euros



RETURN ON CAPITAL EMPLOYED (ROCE)

%



CONSOLIDATED FINANCIAL STATEMENTS

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

CONSOLIDATED INCOME STATEMENT

Thousands of Euros	NOTES	2017	2018
Turnover	F9	11,947,264	13,716,737
Other operating income	F9	71,965	101,559
Operating income		**12,019,229**	**13,818,296**
Raw materials and consumables	F9	(10,324,428)	(11,855,284)
Payroll and related benefits	F10	(700,706)	(731,054)
Depreciation and impairments	F9	(203,703)	(227,162)
Other operating expenses	F9	(470,015)	(516,593)
Operating expenses		**(11,698,853)**	**(13,330,094)**
Income (loss) from other financial assets	F12	(8,286)	5,044
RESULT FROM OPERATING ACTIVITIES		**312,090**	**493,246**
Financial income	F11	4,354	5,805
Financial expenses	F11	(34,813)	(47,847)
Foreign exchange gains and losses	F11	(6,864)	(26,840)
Share in result of companies accounted for using the equity method	F17	29,555	6,720
Profit (loss) before income tax		**304,322**	**431,083**
Income taxes	F13	(75,178)	(103,240)
Profit (loss) from continuing operations		**229,143**	**327,843**
Profit (loss) from discontinued operations*		(2,893)	–
PROFIT (LOSS) OF THE PERIOD		**226,251**	**327,843**
of which minority share		14,308	10,860
of which Group share		211,943	316,984
Euro			**(EUR)**
Basic earnings per share from continuing operations	F39	0.98	1.33
Total basic earnings per share	F39	0.97	1.33
Diluted earnings per share from continuing operations	F39	0.97	1.31
Total diluted earnings per share	F39	0.96	1.31
Dividend per share		0.70	0.75

* Attributable to equityholders of these companies. The details of the discontinued results of 2017 can be found in the 2017 Consolidated Financial Statements.

Umicore's 2018 consolidated financial statements include certain adjustments compared to the preliminary statements included in the 2018 full year results press release published on 8 February 2019. None of the adjustments have any impact on Umicore's key performance indicators (revenues (excluding metal), earnings, related margins or cash flows) nor on any of the 2018 business reviews as published on 8 February 2019. These adjustments reflect a correction of certain intra company elimination bookings made as part of the completion of Umicore's 2018 full year closing process.
Compared to the preliminary statements as included in the 2018 full year press release published on 8 February 2019, the adjustments are as follows:

- In relation to the 2018 consolidated income statement: intra company eliminations leading to a decrease of both the cost of raw materials and consumables and turnover by € 1,070 million respectively as compared to the preliminary statements. Consequently, operating expenses and operating income are decreased by the same amount.
- In relation to the 2018 consolidated balance sheet: intra company eliminations leading to a decrease of both trade and other receivables and trade and other payables by € 352 million respectively as compared to the preliminary statements. Consequently, current assets and current liabilities, and total assets and total liabilities are decreased by the same amount.

The notes on pages 100 to 157 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME

Thousands of Euros	NOTES	2017	2018
Profit (loss) of the period from continuing operations		**229,143**	**327,843**
Items in other comprehensive income that will not be reclassified to P&L			
Changes due to remeasurements of post employment benefit obligations		6,464	(7,611)
Changes in deferred taxes directly recognised in other comprehensive income		(4,167)	583
Items in other comprehensive income that may be subsequently reclassified to P&L			
Changes in financial assets at FV through OCI reserves		3,738	(2,699)
Changes in cash flow hedge reserves		15,278	(30,180)
Changes in deferred taxes directly recognised in other comprehensive income		(2,286)	10,169
Changes in currency translation differences		(83,661)	(4,129)
Other comprehensive income from continuing operations	F23	**(64,635)**	**(33,868)**
Total comprehensive income from discontinued operations		(3,421)	–
Total comprehensive income for the period		**161,087**	**293,975**
of which Group share		148,903	283,454
of which minority share		12,184	10,521

The deferred tax impact on the consolidated statement of comprehensive income is due to the cash flow hedge reserves for € 10.2 million and to employee benefit reserves for € 0.6 million.

The notes on pages 100 to 157 are an integral part of these consolidated financial statements.

CONSOLIDATED BALANCE SHEET*

Thousands of Euros	NOTES	31/12/2017	31/12/2018
Non-current assets		**1,945,675**	**2,246,215**
Intangible assets	F14, F15	328,808	337,305
Property, plant and equipment	F16	1,301,411	1,601,892
Investments accounted for using the equity method	F17	153,008	151,372
Available-for-sale financial assets	F18	22,331	–
Financial assets at fair value through Other Comprehensive Income	F18	–	8,028
Loans granted	F18	11,285	2,627
Trade and other receivables	F20	14,146	12,134
Deferred tax assets	F21	114,686	132,855
Current assets		**3,169,985**	**3,807,095**
Loans granted	F18	1,750	6,270
Inventories	F19	1,628,423	2,308,094
Trade and other receivables	F20	1,335,660	1,145,980
Income tax receivables		36,036	61,672
Cash and cash equivalents	F22	168,115	285,079
TOTAL ASSETS		**5,115,661**	**6,053,310**

Thousands of Euros	NOTES	31/12/2017	31/12/2018
Equity of the Group		**1,862,638**	**2,659,336**
Group shareholders' equity		**1,803,033**	**2,609,408**
Share capital and premiums		502,862	1,384,273
Retained earnings		1,584,442	1,610,882
Currency translation differences and other reserves	F23	(202,517)	(227,644)
Treasury shares		**(81,754)**	**(158,103)**
Minority interest		**59,603**	**49,927**
Non-current liabilities		**1,168,752**	**1,185,381**
Provisions for employee benefits	F27	342,813	333,791
Financial debt	F24	694,104	708,846
Trade and other payables	F25	40,442	24,391
Deferred tax liabilities	F21	3,540	6,225
Provisions	F29, F30	87,852	112,128
Current liabilities		**2,084,272**	**2,208,593**
Financial debt	F24	313,868	436,760
Trade and other payables	F25	1,639,817	1,589,360
Income tax payable		62,830	74,500
Provisions	F29, F30	67,759	107,973
TOTAL EQUITY & LIABILITIES		**5,115,661**	**6,053,310**

* Adjusted figures for 2018 compared to the preliminary statements included in the 8 February 2019 press release, as explained in footnote on p. 96.

The notes on pages 100 to 157 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CHANGES IN EQUITY

Thousands of Euros	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 2017	**502,862**	**1,559,969**	**(144,200)**	**(89,616)**	**58,446**	**1,887,460**	**(39,416)**	**1,848,045**
Result of the period	–	214,836	–	–	14,308	229,143	(2,893)	226,251
Other comprehensive income for the period	–	–	(62,511)	–	(2,124)	(64,635)	(528)	(65,163)
Total comprehensive income for the period	**–**	**214,836**	**(62,511)**	**–**	**12,183**	**164,507**	**(3,421)**	**161,087**
Changes in share-based payment reserves	–	–	6,418	–	–	6,418	–	6,418
Dividends	–	(147,796)	–	–	(5,640)	(153,436)	–	(153,436)
Transfers	–	4,512	(6,402)	1,890	–	–	–	–
Changes in treasury shares	–	–	–	5,972	–	5,972	–	5,972
Changes in scope	–	(47,079)	4,178	–	(5,386)	(48,287)	42,837	(5,450)
Balance at the end of 2017	**502,862**	**1,584,442**	**(202,517)**	**(81,754)**	**59,603**	**1,862,636**	**(0)**	**1,862,636**
Change in accounting policies	–	(2,369)	–	–	144	(2,225)	–	(2,225)
Restated balance at the beginning of 2018	**502,862**	**1,582,073**	**(202,517)**	**(81,754)**	**59,747**	**1,860,411**	**(0)**	**1,860,411**
Result of the period	**–**	**316,984**	**–**	**–**	**10,860**	**327,844**	**–**	**327,844**
Other comprehensive income for the period	–	–	(33,529)	–	(339)	(33,868)	–	(33,868)
Total comprehensive income for the period	**–**	**316,984**	**(33,529)**	**–**	**10,521**	**293,976**	**–**	**293,976**
Changes in share-based payment reserves	–	–	11,150	–	–	11,150	–	11,150
Capital increase	881,410	–	–	–	10,874	892,284	–	892,284
Dividends	–	(175,337)	–	–	(20,110)	(195,447)	–	(195,447)
Transfers	–	(20)	(2,981)	3,001	–	–	–	–
Changes in treasury shares	–	–	–	(79,350)	–	(79,350)	–	(79,350)
Changes in scope	–	(112,811)	233	–	(11,104)	(123,682)	–	(123,682)
Balance at the end of 2018	**1,384,273**	**1,610,882**	**(227,644)**	**(158,103)**	**49,927**	**2,659,343**	**(0)**	**2,659,336**

The legal reserve of € 55.0 million which is included in the retained earnings is not available for distribution.

The share capital of the Group as at 31 December 2018 was composed of 246,400,000 shares with no par value.

The capital increase is the consequence of the increase of share capital during the first semester 2018 as a result of an equity placement through an accelerated bookbuild for a total gross amount of € 891.5 million (€ 881 million net of transaction costs).

The change in scope for € 123.7 million is related to the increase of Umicore's interest in its Chinese cathode material production entity from 70% to 90%.

The notes on pages 100 to 157 are an integral part of these consolidated financial statements.

CONSOLIDATED STATEMENT OF CASH FLOW

Thousands of Euros	NOTES	2017	2018
Profit (loss) from continuing operations		229,144	327,844
Adjustments for profit of equity companies		(29,554)	(6,720)
Adjustment for non-cash transactions	F34	190,714	348,280
Adjustments for items to disclose separately or under investing and financing cash flows	F34	98,274	130,369
Change in working capital requirement	F34	(275,509)	(708,017)
Cash flow generated from operations		**213,070**	**91,756**
Dividend received		15,333	8,392
Tax paid during the period		(74,449)	(127,446)
Government grants received		(642)	–
NET OPERATING CASH FLOW	F34	**153,313**	**(27,299)**
Acquisition of property, plant and equipment	F16	(351,056)	(465,989)
Acquisition of intangible assets	F14	(25,621)	(31,758)
Acquisition of new subsidiaries, net of cash acquired	F8	(211,508)	(24,188)
Acquisition in additional shareholdings in subsidiaries		–	(123,384)
Acquisition of financial assets	F18	(119)	(2,480)
New loans extended	F18	(9,889)	(2,524)
Sub-total acquisitions		**(598,194)**	**(650,324)**
Disposal of property, plant and equipment		5,414	6,182
Disposal of intangible assets		1,438	12,071
Disposal of subsidiaries and associates, net of cash disposed		74,189	35,701
Disposal of financial fixed assets		443	17,398
Repayment of loans	F18	20,033	3,634
Internal transfers		–	(1,620)
Sub-total disposals		**101,516**	**73,366**
NET CASH FLOW GENERATED BY (USED IN) INVESTING ACTIVITIES	F34	**(496,678)**	**(576,958)**
Capital increase		–	881,364
Capital increase (decrease) minority		416	10,794
Own shares		5,972	(79,350)
Interest received		4,027	5,936
Interest paid		(18,398)	(37,615)
New loans and repayments		562,072	120,310
Dividends paid to Umicore shareholders		(150,682)	(175,347)
Dividends paid to minority shareholders		(5,640)	(20,110)
NET CASH FLOW GENERATED BY (USED IN) FINANCING ACTIVITIES	F34	**397,768**	**705,982**
Effect of exchange rate fluctuations		13,997	(508)
TOTAL NET CASH FLOW OF THE PERIOD		**68,400**	**101,217**
Net cash and cash equivalents at the beginning of the period for continuing operations	F22	**71,275**	**155,898**
Impact of final financing carved out entities		**16,223**	**–**
Net cash and cash equivalents at the end of the period for continuing operations	F22	**155,898**	**257,114**
of which cash and cash equivalents		168,115	285,079
of which bank overdrafts		(12,217)	(27,965)

The notes on pages 100 to 157 are an integral part of these 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 1-63 and 90-158, for the year ended 31 December 2018 were authorised for issue by the Board of Directors on 8 March 2019. 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 EUR, 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 re-measured 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 areas of Catalysis, Energy & Surface Technologies, and Recycling.

The Catalysis segment provides automotive catalysts for gasoline and diesel light and heavy-duty diesel applications, including on-road and non-on road vehicles. The business group also offers stationary catalysis for industrial emissions control and produces precious metals-based compounds and catalysts for use in the pharmaceutical and fine chemicals industries. The Energy & Surface Technologies segment is focused on products that are found in applications used in the production and storage of clean energy and in a range of applications for surface technologies that bring specific properties and functionalities to end products. All the activities offer a closed loop service for the customers. The Recycling segment treats complex waste streams containing precious and other specialty metals. The operations can recover 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.

Corporate covers corporate activities, shared operational functions and the Group's Research, Development & Innovation unit. Umicore's minority share in Element Six Abrasives and Ieqsa 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 one subsidiary in the Umicore Group having a functional currency belonging to a hyperinflationary economy in Argentina. However, in view of significance to the Group, this is not material for IAS 29 to be applied.

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 EUR 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 capitalization 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 the following types are recorded at historical cost, less accumulated amortization and impairment losses:

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

In case of an earn out component, a remeasurement is foreseen, adapting the carrying amount of the asset and the amortization accordingly.

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 FINANCIAL ASSETS AT FAIR VALUE THROUGH OCI, LOANS AND NON-CURRENT RECEIVABLES

All movements in financial assets at fair value through OCI, loans and receivables are accounted for at trade date.

Financial assets at fair value through OCI are carried at fair value. Unrealised gains and losses from changes in the fair value of such assets are recognised in equity as financial assets at fair value through OCI reserves (Other Comprehensive Income). When the assets are sold or impaired, the accumulated fair value adjustments are also included in the OCI. 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 realizable value. Cost comprises direct purchase or manufacturing costs and an appropriate allocation of overheads.

Inventories are classified as:

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

Base products eligible for 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 realizable 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, ie 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.

Trade and other receivables are subject to a new impairment methodology, referred to as the Expected Credit Loss (ECL) model, measuring the expected credit losses based on shared credit risk characteristics. Umicore has established an allowance matrix based on different customer and sector ratings, ageing balances, macro-economic and regional factors and historical loss patterns.

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 amortization, 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 result 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 remeasurements as a result of changes in the actuarial assumptions 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 remeasurements as a result of changes in the actuarial assumptions 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 programs, 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, ie 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 jurisdictions 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 REVENUES RECOGNITION

2.20.1 REVENUE RECOGNITION FROM CONTRACTS WITH CUSTOMERS

Despite the complexity of several processes within each business unit, the performance obligations are rather straight forward, those being:

- Catalysis: the delivery of the goods in accordance with contract specifications. These specifications have been predefined and validated through samples. This latter is not considered as a significant stream for further analysis under IFRS 15.
- Recycling: the return of the refined metals back to the client in accordance with the contract either in their pure metal content or as part of a (semi)finished product and the sale of metal (including boni) towards customers.

- Energy and Surface Technologies: the delivery of the products according to specification agreed in the sales order received.

Umicore has carefully considered the satisfaction of the performance obligation and concludes that for sales within Catalysis the revenue is recognised at a point of time when the control transfers to the customer. Despite the products being customised, the considerations for over time have not been met given that the customer does not control the production process nor has the Group the entitlement to get paid prior to delivery of the goods. The control is therefore transferred based upon the usual delivery terms (incoterms) and the customer accepting the goods upon delivery.

For sales within Recycling, the revenue is recognised at a point in time when the control of the refined products or metal is back in the hands of the customers (refinery) or in the hands of the customers (sale of metal, including boni), embarked by the delivery.

For sales within Energy and Surface Technologies the revenue is recognised at a point in time when the control is transferred to the customer, this moment being driven by the delivery of the products according to the incoterms.

Some of the contracts do contain commercial discounts and rebates, however frequency is relatively low, and magnitude is not significant. If applicable, these are recognised in the same period the sale is established.

There are no additional warranty agreements sold to clients on top of legal requirements, therefore these are not considered as a separate performance obligation.

Consequently, the transaction price identified within the agreement is allocated in full to the performance obligation.

There are no significant contract balances where either the Group has performed the performance obligation for which no billing occurred yet, or alternatively has received advance payments for which the performance obligation has not been satisfied.

The revenues from contracts with customers are further detailed in note F9.

The assessment in view of impairment losses is captured under the expected credit loss model as detailed in note F20.

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.

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 IFRS 9. The bottom layer approach for the fair value hedge on groups of closed portfolios of foreign exchange risk and commodity risk exposures is applied. Under this approach, bottom layers representing the nominal amount of an exposure that has historically been present on a constant and continuous basis are defined. A bottom layer is part of a group of both on balance and off balance foreign exchange and commodity positions, that is, either trade payables, inventories and purchase commitments or trade receivables and sales commitments exposed to the variability of foreign currencies or commodity prices.

For commodity risk exposures, IFRS 9 based bottom layer based fair value hedge accounting is applied to the extent there are market based derivatives available for that commodity. In the absence of such market based derivatives and so obtaining fair value hedge accounting at inception as defined under IFRS 9, the hedged items are kept at cost and are submitted to the valuation rules applicable to similar non-hedged items, ie 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.

When there is a consistent practice of trading of commodities 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 (ie 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 IFRS 9, 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.

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 IFRS 9 (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.

2.22 NON-RECURRING RESULTS

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.

2.23 IMPACT OF CHANGES IN ACCOUNTING POLICIES ON THE OPENING OF FINANCIAL STATEMENTS

2.23.1 IMPACT OF IFRS 9

IFRS 9 replaces the provisions of IAS 39 on the accounting and classification of financial assets and liabilities, financial instruments and hedging. Umicore adopted IFRS 9 as from 1 January 2018, resulting in a number of changes in accounting policies and adjustments in the financial statements. Comparative figures have not been restated.

The total impact on the Group's retained earnings as at 1 January 2018 amounts to € 2.4 million:

- Closing retained earnings 31 December 2017 under IAS 39: € 1,584.4 million
- Increase in allowance for trade and other receivables under the Expected Credit Loss (ECL) model: € -8.4 million (net impact after taxes) (refer to the above accounting policies)
- Application of Fair Value Hedge accounting: € +6.0 million (net impact after taxes) (refer to the above accounting policies)

Opening retained earnings 1 January 2018 under IFRS 9: € 1,582.1 million.

The additional ECL based loss allowances taken in result during 2018 amount to € 3.0 million before taxes.

2.23.2 IMPACT OF IFRS 15

As of 1 January 2018, IFRS 15 "Revenue from Contracts with Customers" replaces IAS 18 "Revenue", IAS 11 "Construction Contracts" and a number of revenue related interpretations. The new standard establishes a five-step model to account for revenues arising from contracts with customers. Umicore has assessed each of the revenue streams of every business unit from taking the new five-step model into account and concluded that IFRS 15 does not have any material impact on the revenue recognition of the Group. Consequently, the Group did not have to change its accounting policies or make any retrospective adjustment.

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 EUR or other currencies which are not pegged to the USD will have an impact on our results. A large portion of such structural currency exposure derives from US dollar denominated metal prices linked to the recycling and refining operations.

An increasing portion of the structural risk exposures stems from non-metal related revenues denominated in USD such as product premia and refining charges. This increase is particularly related to the accelerating growth in battery materials activities in Asia.

Next to the sensitivity USD vs EUR, there is also a structural and increasing sensitivity to certain other currency pairs such as the USD and EUR vs the Korean won (KRW), the Chinese yuan (CNY), the Canadian dollar (CAD) and the South African rand (ZAR).

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 EUR is above its historical average and at a level where attractive margins can be secured.

In relation to the structural risk, the Group assesses the hedge effectiveness through a critical terms match between the hedged item (future probable cash flows) and the hedging instrument amongst others amount and maturity. The Group applies a prudent approach in the application of structural hedging, never up to 100%, avoiding thereby ineffectiveness arising from difference in maturity between hedged item and hedging instrument or changes in exposure amounts.

At the end of 2018, 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, USD/CNY, EUR/CNY, EUR/ZAR and USD/CAD.

3.1.2 TRANSACTIONAL RISK

The company is also subject to transactional risks in respect of currencies, ie 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.

In relation to the transactional risk, the Group assesses the hedge effectiveness through a critical terms match between the hedged item (balance sheet items and commitments) and the hedging instrument amongst others amount and maturity. The Group hedges transactional risks to the maximum extent up to 100%. Any ineffectiveness can arise from difference in maturity between hedged item and hedging instrument or changes in exposure amounts, but this will never be material.

3.1.3 TRANSLATIONAL RISK

Umicore is an international company and has foreign operations which do not have the EUR 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 EUR, predominantly the KRW, CNY, USD, BRL and ZAR. 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 metal 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) 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 2018, the outstanding hedge contracts relate to some precious metals (ie gold, platinum and palladium) and some base metals (ie nickel, copper and lead).

In relation to the structural risk, the Group assesses the hedge effectiveness through a critical terms match between the hedged item (future probable cash flows) and the hedging instrument amongst others amount and maturity. The Group applies a prudent approach in the application of structural hedging, never up to 100%, thereby avoiding ineffectiveness arising from difference in maturity between hedged item and hedging instrument or changes in exposure amounts.

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 (ie, when the metal is "priced in") and the moment the products are sold (ie 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.

In relation to the transactional risk, the Group assesses the hedge effectiveness through a critical terms match between the hedged item (balance sheet items and commitments) and the hedging instrument amongst others amount and maturity. The Group hedges transactional risks to the maximum extent up to 100%. Any ineffectiveness can arise from the difference in maturity between hedged item and hedging instrument or changes in exposure amounts, but this will never be material.

The accelerating growth in battery materials is rapidly increasing the exposure to specific related metals such as cobalt or nickel. Increasing volumes, the vulnerability to the associated price volatility and, in the case of certain metals such as cobalt, the absence of a liquid paper forward market result in increased metal risks. For cobalt, Umicore's transactional hedging policy aims to match to a maximum extent the pricing in and pricing out of the contracted metal. Such physical back-to-back hedging allows managing transactional risks related to cobalt in a volatile market.

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 2018, the Group's gross financial debt stood at € 1,146 million, including € 650 million at fixed rate. The outstanding interest rate swaps totalled € 64 million at the end of the period and included a € 40 million contract that will expire in 2023. The 5-year interest rate swap entered into in 2013 for an amount of € 150 million expired in January 2018.

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 insured activities against insolvency, political and commercial risks with an individual deductible per invoice of 5% and foresees in an indemnification cap set at regional or country levels. A second policy covers a more selective group of trade receivables and foresees in an annual deductible of € 5 million and a maximum indemnity of € 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 contracts 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 committed medium-term syndicated bank facilities, two committed long-term private placements and a commercial paper programme.

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. Based on these tax risks described, management performed a detailed assessment for uncertain tax positions which resulted in provisions recorded for these uncertainties.

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 Management section (pages 41-50) 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 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
- Recognizing 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 2018, the carrying amount of the goodwill for the consolidated entity was € 142.5 million (€ 142.7 million in 2017).

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 2018, the carrying amount of rehabilitation provisions was € 60.8 million (€ 66.1 million in 2017).

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 2018, a liability with respect to employee benefit obligations of € 333.8 million was recognised (€ 342.8 million in 2017).

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.

4.5 PROVISIONS FOR OTHER LIABILITIES AND CHARGES

As mentioned under notes 2.21.1 and 3.2.2., Umicore's policy is to hedge to the maximum extent possible its transactional metal price risk, applying IFRS 9 based fair value hedge accounting to the extent there are market-based derivatives available. In the absence of such market-based derivatives, the hedged items, a.o. physical metal commitments, are kept at cost and are subject to the IAS 37 principles for onerous contracts. The onerous contract provision decision is based on an assessment of the level of commitment expected from a third party to honor its contractual obligations towards Umicore (in the event the metal price at the close would be substantially higher (lower) than the contracted metal price in the case of Umicore purchases (sales)). In 2018, the market volatility in the cobalt price in particular triggered such risk assessments. If instead of IAS 37 principles, IFRS 9 based fair value hedge accounting would have applied, such provisions would be recognized as mark-to-markets.

In view of the fast growth of Umicore battery materials for transport applications, the group's exposure to the automotive industry is increasing. This industry has a practice of applying warranty and recall settlements related to potential product quality events (irrespective of whether any legal obligation exists). In view thereof, Umicore introduced, in 2018, a dedicated provisioning model.

As at 31 December 2018, the carrying amount of the provisions for other liabilities and charges amount to € 119,9 million (€ 49,4 million in 2017)

F5 GROUP COMPANIES

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

		% INTEREST IN 2017	% INTEREST IN 2018
For continuing operations			
Argentina	Umicore Argentina S.A.	100.00	100.00
Australia	Umicore Marketing Services Australia Pty 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 Specialty Materials Brugge (BE 0405.150.984)	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
	Umicore Catalisadores Ltda.	100.00	100.00
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	90.00
	Umicore Jubo Thin Film Products (Beijing) Co., Ltd.	100.00	100.00
	Umicore Shokubai (China) Co Ltd	60.00	60.00
	Umicore Catalyst (China) Co., Ltd.	100.00	100.00
Denmark	Umicore Denmark ApS	100.00	100.00
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
	Umicore Specialty Powders France S.A.S.	100.00	100.00
	Todini France S.A.S.	100.00	100.00
Germany	Umicore AG & Co. KG (*)	100.00	100.00
	Allgemeine Gold- und Silberscheideanstalt AG	91.21	91.21
	Umicore Galvanotechnik GmbH	91.21	91.21
	Todini Deutschland GmbH	100.00	100.00
	Umicore Shokubai Germany GmbH	60.00	60.00
Italy	TODINI AND CO. S.P.A.	100.00	100.00

		% INTEREST IN 2017	% INTEREST IN 2018
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
	Ordeg Co.,Ltd.	100.00	100.00
Liechtenstein	Umicore Thin Film Products AG	100.00	100.00
Luxemburg	Umicore International	100.00	100.00
	Umicore Autocat Luxembourg	100.00	100.00
Mexico	Todini Atlántica S.A. de C.V.	70.00	70.00
Netherlands	Schöne Edelmetaal BV	91.21	91.21
Philippines	Umicore Specialty Chemicals Subic Inc.	78.20	78.20
Poland	Umicore Autocat Poland sp. z o.o.	100.00	100.00
	Todini Europe sp. z o.o.	70.00	70.00
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 Film Products Taiwan Co Ltd	100.00	100.00
Thailand	Umicore Precious Metals Thailand Ltd.	91.21	91.21
	Umicore Autocat (Thailand) Co., Ltd.	100.00	100.00
	Umicore Shokubai (Thailand) Co., Ltd.	60.00	60.00
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
	Umicore Catalyst USA, LLC	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 (€), 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	
		2017	2018	2017	2018
American dollar	USD	1.199	1.145	1.130	1.181
UK Pound sterling	GBP	0.887	0.895	0.877	0.885
Canadian dollar	CAD	1.504	1.561	1.465	1.529
Swiss franc	CHF	1.170	1.127	1.112	1.155
Japanese yen	JPY	135.010	125.850	126.711	130.396
Brazilian real	BRL	3.967	4.437	3.606	4.316
South African rand	ZAR	14.805	16.459	15.049	15.619
Chinese yuan	CNY	7.804	7.875	7.629	7.808
Thai baht	THB	39.121	37.052	38.296	38.164
Korean won (100)	KRW	12.796	12.779	12.767	12.991

F7 SEGMENT INFORMATION

BUSINESS GROUP INFORMATION 2017

Thousands of Euros	NOTE	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE & UNALLOCATED	ELIMINATIONS	TOTAL CONTINUED	DISCONTINUED OPERATIONS	TOTAL
Total segment turnover		**3,090,560**	**2,392,360**	**7,326,724**	**43,910**	**(906,290)**	**11,947,264**	**330,356**	**12,277,620**
External turnover		3,068,320	2,333,680	6,501,354	43,910	–	11,947,264	**330,356**	**12,277,620**
Inter-segment turnover		22,240	58,680	825,370	–	(906,290)	–	**–**	**–**
Total segment revenues (excluding metals)		**1,253,100**	**893,600**	**650,300**	**–**	**(6,420)**	**2,790,580**	**125,100**	**2,915,680**
External revenues		1,251,820	893,250	645,510	–	–	2,790,580	125,100	**2,915,680**
Inter-segment revenues		1,280	350	4,790	–	(6,420)	–	–	**–**
Operating result	**F9**	**160,346**	**99,231**	**121,298**	**(68,784)**	**–**	**312,091**	**783**	**312,874**
Recurring operating result		165,132	130,217	127,899	(54,151)	–	369,098	11,537	**380,634**
Non-recurring operating result		10	(14,804)	(2,718)	(14,927)	–	(32,440)	(13,042)	**(45,482)**
IAS 39 effect		(4,796)	(16,182)	(3,883)	294	–	(24,567)	2,289	**(22,278)**
Equity method companies	**F9**	**893**	**10,481**	**–**	**18,181**	**–**	**29,555**	**859**	**30,413**
Recurring		383	10,481	–	17,896	–	28,761	859	**29,619**
Non-recurring		(376)	–	–	(392)	–	(768)	**–**	**(768)**
IAS 39 effect		885	–	–	676	–	1,562	**–**	**1,562**
EBIT	**F9**	**161,239**	**109,713**	**121,298**	**(50,604)**	**–**	**341,646**	**1,642**	**343,287**
Recurring EBIT		165,515	140,699	127,899	(36,255)	–	397,858	12,395	**410,254**
Non-recurring EBIT		(366)	(14,804)	(2,718)	(15,319)	–	(33,208)	(13,042)	**(46,250)**
IAS 39 effect on EBIT		(3,911)	(16,182)	(3,883)	970	–	(23,005)	2,289	**(20,717)**
Depreciation and amortisation	**F9**	**58,884**	**57,617**	**61,835**	**12,157**	**–**	**190,494**	**31**	**190,524**
Recurring		58,884	57,042	60,955	12,157	–	189,038	31	**189,069**
EBITDA	**F9**	**220,122**	**167,330**	**183,134**	**(38,447)**	**–**	**532,139**	**1,672**	**533,811**
Recurring EBITDA		224,399	197,741	188,855	(24,098)	–	586,897	12,426	**599,323**
Consolidated total assets		**1,878,919**	**2,661,962**	**1,074,621**	**603,519**	**(1,103,360)**	**5,115,661**	**–**	**5,115,661**
Segment assets		1,878,919	2,626,474	1,074,621	485,999	(1,103,360)	4,962,653	–	**4,962,653**
Investments in associates		–	35,488	–	117,520	–	153,008	–	**153,008**
Consolidated total liabilities		**772,775**	**1,442,307**	**618,204**	**1,523,095**	**(1,103,360)**	**3,253,021**	**–**	**3,253,021**
Capital Employed at 31/12 of previous year	F31	911,191	752,037	498,139	136,968	–	2,298,336	99,074	**2,397,409**
Capital Employed at 30/06	F31	998,299	976,951	503,565	148,061	–	2,626,877	92,497	**2,719,374**
Capital Employed at 31/12	F31	1,149,585	1,205,844	474,522	173,593	–	3,003,545	–	**3,003,545**
Average Capital Employed in first half year	F31	954,745	864,494	500,852	142,515	–	2,462,606	95,786	**2,558,392**
Average Capital Employed in second half year	F31	1,073,942	1,091,397	489,044	160,827	–	2,815,211	46,249	**2,861,459**
Average Capital Employed in the year	**F31**	**1,014,344**	**977,946**	**494,948**	**151,671**	**–**	**2,638,908**	**71,017**	**2,709,926**
ROCE	F31	16.32%	14.39%	25.84%	(23.90%)	0.00%	15.08%	17.45%	**15.14%**
Capital expenditure	**F34**	**45,038**	**225,529**	**79,526**	**11,852**	**–**	**361,944**	**3,305**	**365,250**
Total R&D expenditure	**F9**	**119,824**	**30,351**	**18,618**	**4,766**	**–**	**173,558**	**1,599**	**175,157**
R&D recognised in operating expenses	F9	107,764	27,485	18,618	4,766	–	158,632	1,599	**160,232**
R&D capitalised as intangible assets	F34	12,060	2,865	–	–	–	14,926	–	**14,926**

BUSINESS GROUP INFORMATION 2018*

Thousands of Euros	NOTE	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE & UNALLOCATED	ELIMINATIONS	TOTAL CONTINUED	TOTAL
Total segment turnover		**3,310,960**	**3,650,170**	**7,625,440**	**46,067**	**(915,900)**	**13,716,737**	**13,716,737**
External turnover		3,272,660	3,592,840	6,805,170	46,067	–	13,716,737	**13,716,737**
Inter-segment turnover		38,300	57,330	820,270	–	(915,900)	–	**–**
Total segment revenues (excluding metals)		**1,360,400**	**1,289,300**	**626,200**	**–**	**(4,830)**	**3,271,070**	**3,271,070**
External revenues		1,359,220	1,288,870	622,980	–	–	3,271,070	**3,271,070**
Inter-segment revenues		1,180	430	3,220	–	(4,830)	–	**–**
Operating result	**F9**	**162,329**	**250,423**	**125,802**	**(45,307)**	**–**	**493,247**	**493,247**
Recurring operating result		168,157	255,781	134,807	(50,539)	–	508,206	**508,206**
Non-recurring operating result		(5,828)	(5,357)	(9,006)	5,232	–	(14,959)	**(14,959)**
Equity method companies	**F9**	**–**	**855**	**–**	**5,865**	**–**	**6,720**	**6,720**
Recurring		–	855	–	4,503	–	5,358	**5,358**
Non-recurring		–	–	–	1,362	–	1,362	**1,362**
EBIT	**F9**	**162,329**	**251,279**	**125,802**	**(39,442)**	**–**	**499,967**	**499,967**
Recurring EBIT		168,157	256,636	134,807	(46,036)	–	513,564	**513,564**
Non-recurring EBIT		(5,828)	(5,357)	(9,006)	6,594	–	(13,597)	**(13,597)**
Depreciation and amortisation	**F9**	**69,088**	**66,274**	**59,873**	**11,343**	**–**	**206,577**	**206,577**
Recurring		69,088	66,274	59,873	11,343	–	206,577	**206,577**
EBITDA	**F9**	**231,417**	**317,552**	**185,674**	**(28,099)**	**–**	**706,544**	**706,544**
Recurring EBITDA		237,245	322,910	194,680	(34,694)	–	720,141	**720,141**
Consolidated total assets		**2,031,404**	**3,741,418**	**1,132,969**	**478,013**	**(1,330,495)**	**6,053,310**	**6,053,310**
Segment assets		2,031,404	3,706,334	1,132,969	361,725	(1,330,495)	5,901,938	**5,901,938**
Investments in associates		–	35,084	–	116,288	–	151,372	**151,372**
Consolidated total liabilities		**814,036**	**1,948,071**	**593,408**	**1,368,954**	**(1,330,495)**	**3,393,974**	**3,393,974**
Capital Employed at 31/12 of previous year	F31	1,149,585	1,205,844	474,522	173,593	–	3,003,545	**3,003,545**
Capital Employed at 30/06	F31	1,193,144	1,451,330	455,680	185,221	–	3,285,375	**3,285,374**
Capital Employed at 31/12	F31	1,264,885	1,769,135	546,396	221,997	–	3,802,413	**3,802,414**
Average Capital Employed in first half year	F31	1,171,365	1,328,587	465,101	179,407	–	3,144,460	**3,144,459**
Average Capital Employed in second half year	F31	1,229,015	1,610,233	501,038	203,609	–	3,543,894	**3,543,894**
Average Capital Employed in the year	**F31**	**1,200,190**	**1,469,410**	**483,069**	**191,508**	**–**	**3,344,177**	**3,344,177**
ROCE	F31	14.01%	17.47%	27.91%	(24.04%)	0.00%	15.36%	**15.36%**
Capital expenditure	**F34**	**78,797**	**316,063**	**68,431**	**14,298**	**–**	**477,589**	**477,589**
Total R&D expenditure	**F9**	**135,523**	**38,845**	**15,196**	**6,875**	**–**	**196,440**	**196,440**
R&D recognised in operating expenses	F9	120,514	33,608	15,196	6,875	–	176,193	**176,193**
R&D capitalised as intangible assets	F34	15,010	5,237	–	–	–	20,247	**20,247**

* Adjusted figures for 2018 compared to the preliminary statements included in the 8 February 2019 press release, as explained in footnote on p. 96.

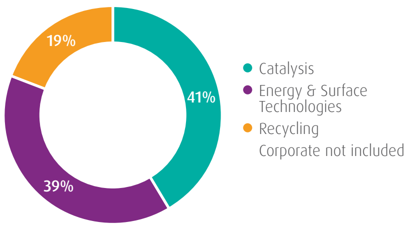
GEOGRAPHICAL INFORMATION 2017

Thousands of Euros	NOTE	EUROPE	OF WHICH BELGIUM	ASIA-PACIFIC	NORTH AMERICA	SOUTH AMERICA	AFRICA	TOTAL
Total segment turnover		6,926,079	130,937	3,093,227	1,437,303	346,073	144,581	**11,947,264**
Total non current assets		1,014,335	499,561	591,072	133,497	49,114	8,325	**1,796,344**
Capital expenditure	F34	142,691	111,839	198,951	13,673	4,597	2,032	**361,944**

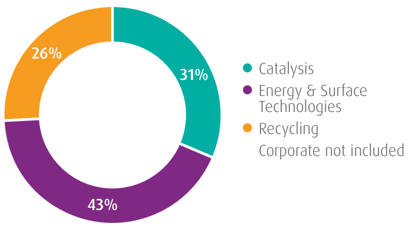
GEOGRAPHICAL INFORMATION 2018

Thousands of Euros	NOTE	EUROPE	OF WHICH BELGIUM	ASIA-PACIFIC	NORTH AMERICA	SOUTH AMERICA	AFRICA	TOTAL
Total segment turnover		6,443,219	117,143	4,140,094	2,528,858	441,024	163,541	**13,716,737**
Total non-current assets		1,036,033	506,347	863,947	151,709	42,894	6,949	**2,101,532**
Capital expenditure	F34	131,551	103,707	319,374	21,298	3,914	1,452	**477,589**

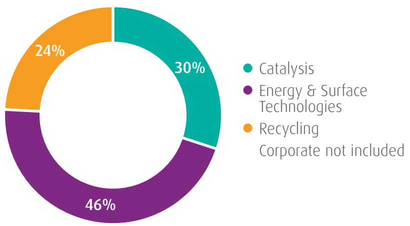
REVENUES (EXCLUDING METAL) PER BUSINESS GROUP



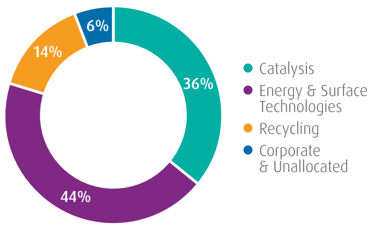
RECURRING EBITDA PER BUSINESS GROUP



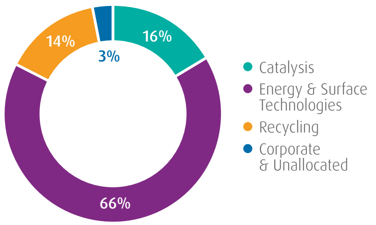
RECURRING EBIT PER BUSINESS GROUP



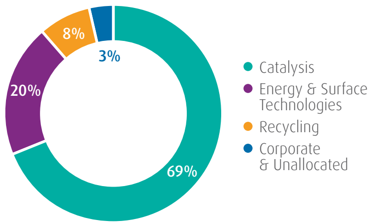
CAPITAL EMPLOYED, AVERAGE PER BUSINESS GROUP



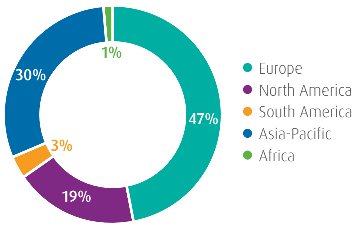
CAPITAL EXPENDITURE PER BUSINESS GROUP



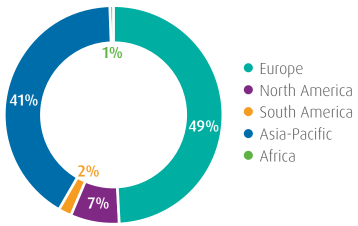
R&D EXPENDITURE PER BUSINESS GROUP



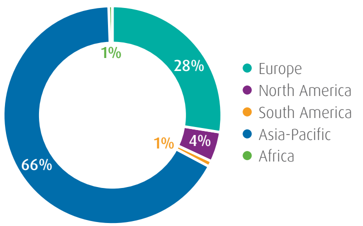
TURNOVER BY REGION



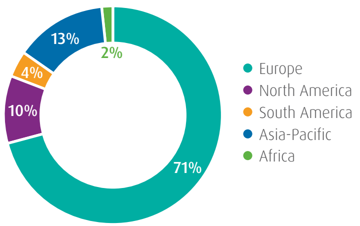
NON-CURRENT ASSETS BY REGION



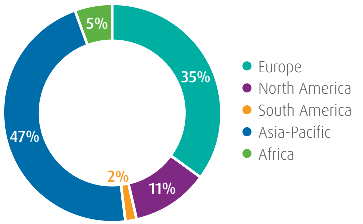
CAPITAL EXPENDITURE BY REGION



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 percent 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. Catalysis provides automotive catalysts for gasoline and diesel light and heavy-duty diesel applications, including on-road and non-on road vehicles. The business group also offers stationary catalysis for industrial emissions control and produces precious metals-based compounds and catalysts for use in the pharmaceutical and fine chemicals industries.

ENERGY & SURFACE TECHNOLOGIES

The segment comprises the Cobalt & Specialty Materials, Electro-Optic Materials, Electroplating and Rechargeable Battery Materials. Energy & Surface Technologies' products are found in applications used in the production and storage of clean energy and in a range of applications for surface technologies that bring specific properties and functionalities to end products. All the activities offer a closed loop service for the customers. 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, Jewelry & Industrial Metals and Precious Metals Management. Recycling treats complex waste streams containing precious and other specialty metals. The recycling operations can recover 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.

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. Umicore's share in Ieqsa which was until June 2017 presented under Discontinued operations has been transferred to Corporate as from 1 July 2017.

The Building Products and Zinc Chemicals business units were reported as discontinued until their effective divestment, respectively in 2017 (end of September) and in 2016.

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 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 June 2017, Umicore announced that it had reached an agreement to acquire the heavy-duty diesel and stationary catalyst businesses of Haldor Topsoe. The closing of the transaction was completed at the end of November 2017 and a preliminary opening balance sheet was prepared as of 1 December but was still be subject to adjustments on a number of restatements over the coming 11 months. Following the final opening balance sheet as per the end of November 2018, the net value of the assets bought represented a total amount of € 132.1 million (€ 129.2 million in 2017) and the total purchase price has been adjusted to 134.3 million (€ 133.0 million in 2017). This results in a goodwill of € 2.2 million (preliminary € 3.8 million in 2017). The main lines of the balance sheet that have been updated since 2017 are “property, plant and equipment” (see note F16), “inventory”, “accounts receivable” and “provisions for other liabilities and charges” (see note F30). Those are reflected under the lines "acquisition through business combinations" of the corresponding impacted notes.

In January 2018, Umicore acquired Materia's metathesis catalyst IP and business portfolio for a price of $ 27 million. Through the acquisition, Umicore broadened its range of catalyst technologies, expands its homogeneous catalysts offer and gain access to an extended customer base. The combined metathesis portfolios will provide Umicore's customers full access to proprietary, patent-protected cutting-edge technology. This activity is integrated in Umicore's Precious Metals Chemistry business unit. The net value of the assets bought (mainly IP and customer portfolio as reflected in note F14) is in line with the price paid and therefore no goodwill has been recognised. The acquired net assets are reflected under the lines "acquisition through business combination" of the impacted notes.

F9 RESULT FROM OPERATING ACTIVITIES

Thousands of Euros	2017	2018
Sales	11,822,362	13,602,160
Services	124,902	114,576
Turnover (1)	**11,947,264**	**13,716,736**
Other operating income (2)	**71,965**	**101,559**
OPERATING INCOME OF CONTINUING OPERATIONS	**12,019,229**	**13,818,295**
Raw materials and consumables used (3)	**(10,324,429)**	**(11,855,284)**
Payroll and related benefits	**(700,706)**	**(731,054)**
Depreciation of fixed assets	(190,494)	(206,577)
Impairment loss on fixed assets	(3,417)	(6,780)
Inventory and bad debt provisions	(9,792)	(13,805)
Depreciation and impairment results (4)	**(203,703)**	**(227,162)**
Services and outsourced refining and production costs	(404,818)	(412,970)
Royalties, licence fees, consulting and commissions	(36,330)	(33,808)
Other operating expenses	(3,354)	(6,664)
Increase and decrease in provisions	(41,544)	(78,546)
Use of provisions	19,992	17,131
Capital losses on disposal of assets	(3,961)	(1,736)
Other operating expenses (5)	**(470,015)**	**(516,593)**
OPERATING EXPENSES OF CONTINUING OPERATIONS	**(11,698,854)**	**(13,330,093)**
Operating income of discontinued operations	334,291	–
Operating expenses of discontinued operations	(319,358)	–

Turnover refers to turnover from customers as per IFRS 15. The further disaggregation is detailed in note F7. As described in the accounting policy 2.20, the revenue from contracts with customers are recognised at a point in time.

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 (€ 44.9 million in 2018 and € 27.7 million in 2017), operating grants (€ 8.9 million in 2018 and € 8.5 million in 2017), royalties and licence fees (€ 9.1 million in 2018 and € 9.7 million in 2017), income linked to emission rights (€ 2.8 million in 2018 and € 2.1 million in 2017), insurance recovery (€ 2.0 million in 2018 and €1.6 million in 2017), various interest and penalties for late payments (€ 6.9 million in 2018) and gains on disposal of assets (€ 2.8 million in 2018).
3) Raw materials and consumables used include water, gas and electricity for € 95.8 million in 2018 (€ 83.3 million in 2017) for continuing operations.
4) Impairments of fixed assets have been taken and transferred in non-recurring results. 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 € 30.2 million (€ 19.7 million in 2017) for continuing operations.

R&D EXPENDITURE

Thousands of Euros	NOTE	2017	2018
R&D recognised in Other operating expenses		158,632	176,193
R&D capitalised as intangible assets	F14	14,926	20,247
Total R&D expenditure for continuing operations		**173,558**	**196,440**
Total R&D expenditure for discontinued operations		1,599	–

Total R&D expenditure for continuing operations was € 196.4 million in the fully consolidated companies. The part of the R&D expenditures that is directly recognised in the other operating expenses amounts to € 176.2 million.

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

		2017				2018		
Thousands of Euros	NOTE	TOTAL	RECURRING	NON-RECURRING	IAS 39 EFFECT	TOTAL	RECURRING	NON-RECURRING
Turnover		**12,277,619**	12,277,312	307	–	**13,716,737**	13,716,737	–
Other operating income		**75,900**	60,262	16,655	(1,017)	**101,559**	93,759	7,800
Operating income		**12,353,519**	**12,337,574**	**16,962**	**(1,017)**	**13,818,296**	**13,810,496**	**7,800**
Raw materials and consumables used		**(10,550,782)**	(10,543,983)	(8,735)	**1,936**	**(11,855,284)**	(11,851,572)	(3,712)
Payroll and related benefits		**(754,832)**	(751,169)	(3,663)	–	**(731,054)**	(730,844)	(210)
Depreciation and impairment results		**(203,651)**	(195,624)	(6,294)	(1,733)	**(227,162)**	(216,195)	(10,966)
of which depreciation and amortisation		**(190,524)**	(189,069)	(1,455)	–	**(206,577)**	(206,577)	–
Other operating expenses		**(508,946)**	(467,419)	(20,063)	(21,464)	**(516,593)**	(503,826)	(12,767)
Operating expenses		**(12,018,211)**	**(11,958,195)**	**(38,755)**	(21,261)	**(13,330,094)**	**(13,302,438)**	**(27,655)**
Income from other financial investments		**(22,435)**	1,254	(23,689)	**–**	**5,044**	147	4,896
Result from operating activities		**312,873**	**380,634**	**(45,482)**	(22,278)	**493,246**	**508,205**	**(14,959)**
Net contribution from equity method companies		**30,413**	29,619	(768)	**1,562**	**6,720**	5,358	1,362
EBIT		**343,287**	**410,254**	**(46,250)**	(20,717)	**499,967**	**513,564**	**(13,597)**
EBITDA		**533,811**	**599,323**	**(44,795)**	**(20,717)**	**706,544**	**720,141**	**(13,597)**
Finance cost	F11	**(38,344)**	(41,865)	–	3,519	**(68,883)**	(68,883)	–
Income taxes	F13	**(78,690)**	(87,185)	4,525	3,971	**(103,240)**	(107,238)	3,998
Net result		**226,253**	**281,202**	**(41,725)**	**(13,227)**	**327,843**	**337,442**	**(9,599)**
of which minority shares		**14,308**	14,431	119	(243)	**10,860**	11,012	(152)
of which Group shares		**211,943**	266,771	(41,844)	(12,984)	**316,984**	326,430	(9,447)

Non-recurring items had a negative impact of € 13.6 million on EBIT. Restructuring charges accounted for € 14 million and were related to the plan to close down industrial activities in Guarulhos (Brazil) and transfer them to the existing site in Americana (Brazil). Impairments on permanently tied-up metal inventories accounted for a € 6 million charge and are largely linked to a lower cobalt price at the end of the period. These charges were partly offset by non-recurring income including the gain on the sale of the European operations of Technical Materials. The negative impact of the non-recurring items on the net result (Group share) amounts to € 9.4 million.

The cobalt market price substantially decreased since the 31 December 2018 closing date. The prevailing cobalt market price is currently lower than the average cost of the permanently tied-up cobalt inventories, implying a risk of future impairment charges.

Umicore has adopted IFRS 9 “Financial Instruments” as from 1 January 2018 which replaces the provisions of IAS 39 on accounting and classification of financial assets and liabilities, financial instruments and hedging. As a consequence, Umicore no longer applies IAS 39 and no longer reports an IAS 39 effect.

F10 PAYROLL AND RELATED BENEFITS

Thousands of Euros	2017	2018
Wages, salaries and direct social advantages	(515,680)	(538,855)
Other charges for personnel	(30,801)	(34,211)
Temporary staff	(13,132)	(13,058)
Share-based payments	(6,129)	(11,150)
Employee salaries	**(565,742)**	**(597,274)**
Employers' social security	**(99,131)**	**(101,028)**
Defined benefit contributions	(12,042)	(15,602)
Contribution to defined contribution plan	(18,699)	(15,781)
Employer's voluntary contributions (other)	(2,553)	(3,956)
Pensions paid directly to beneficiaries	(4,342)	(3,598)
Provisions for employee benefits (-increase / + use and reversals)	1,803	6,185
Pensions and other benefits	**(35,833)**	**(32,752)**
PAYROLL AND RELATED BENEFITS OF CONTINUING OPERATIONS	**(700,706)**	**(731,054)**
Payroll and related benefits of discontinued operations	(54,126)	–

AVERAGE HEADCOUNT IN CONSOLIDATED COMPANIES

	2017	2018
Executives and managerial staff	1,819	1,816
Non-managers	8,026	8,276
Total including discontinued operations	**9,845**	**10,092**
Total for continuing operations	**9,845**	**10,092**

SHARE-BASED PAYMENTS

Thousands of Euros	NOTE	2017	2018
Number of stock options granted	F28	**1,170,000**	**1,182,625**
Valuation model		Present Economic Value	
Assumed volatility (% pa)		25.00	25.00
Risk-free interest rate (% pa)		(0.004)	0.120
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)		3.87	6.89
Total fair value of options granted		**4,529**	**8,148**
47,400 shares granted at 25.50 EUR		1,209	–
7,400 shares granted at 25.74 EUR		190	–
10,312 shares granted at 31.27 EUR		322	–
6,800 shares granted at 24.73 EUR		168	–
54,800 shares granted at 40.90 EUR		–	2,241
10,002 shares granted at 49.84 EUR		–	498
5,700 shares granted at 45.87 EUR		–	261
Total fair value of shares granted		**1,890**	**3,001**
SHARE-BASED PAYMENTS		**6,419**	**11,150**
Share-based payments to discontinued operations		(289)	0
TOTAL SHARE-BASED PAYMENTS CONTINUING OPERATIONS		**6,129**	**11,150**

The Group recognised a share-based payment expense of € 11.1 million 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 2018, shares have been granted to top management resulting in an extra charge of € 3.0 million for continuing operations.

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

Thousands of Euros	2017	2018
Interest income	4,057	5,842
Interest expenses	(23,540)	(39,059)
Discounting of non-current provisions	(9,585)	(3,394)
Foreign exchange gains and losses	(6,864)	(26,840)
Other financial income	298	–
Other financial expenses	(1,687)	(5,432)
Total of continuing operations	**(37,323)**	**(68,883)**
Total of discontinued operations	(1,023)	–

The net interest charge in 2018 totalled € 33.2 million, in line with the increase of the indebtedness.

The discounting of non-current provisions relates mainly to employee benefits provisions and to environmental provisions. 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 2018 were booked in Germany and to a lesser extent to Belgium and Brazil. 2018 contains for Belgium as well as a positive discounting impact of € 1.2 million related to the re-evaluation of the earn-out related to the acquisition in 2016 of three NMC battery material patent families from 3M.

Foreign exchange results include realised exchange results and the unrealised translation adjustments on monetary items using the closing rate of the period. The accelerating growth in Asia results in higher forex costs including the cost of forward points in hedge instruments.

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

Thousands of Euros	2017	2018
Capital gains and losses on disposal of financial investments	(1,301)	4,925
Dividend income	1,380	124
Interest income from financial assets	(3)	(6)
Impairment results on financial investments	(8,361)	–
Total for continuing operations	**(8,286)**	**5,044**
Total for discontinued operations	(14,149)	–

The capital gains realised on disposal of financial investments are mainly linked to the sale of the European Technical Materials business to Saxonia Edelmetalle GmbH.

F13 INCOME TAXES

Thousands of Euros	2017	2018
INCOME TAX EXPENSE		
Recognised in the Income Statement		
Current income tax	(76,714)	(112,599)
Deferred income tax	1,535	9,359
Total tax expense for continuing operations	**(75,178)**	**(103,240)**
Total tax expense for discontinued operations	**(3,512)**	**–**
RELATIONSHIP BETWEEN TAX EXPENSE (INCOME) AND ACCOUNTING PROFIT		
Result from operating activities	312,090	493,246
Financial result	(37,323)	(68,883)
Profit (loss) before income tax of consolidated companies for continuing operations	**274,767**	**424,363**
Weighted average theoretical tax rate (%)	(27.47)	(24.13)
Income tax calculated at the weighted average theoretical tax rate for continuing operations	**(75,470)**	**(102,385)**
Tax effect of:		
Expenses not deductible for tax purposes	(7,277)	(2,009)
Tax-exempted revenues	7,711	551
Dividends from consolidated companies & Associates	(3,071)	(1,798)
Gains & losses taxed at a reduced rate	4	–
Tax incentives deductible from the taxable base	10,210	17,383
Tax computed on other basis	(2,846)	(799)
Utilisation of previously unrecognised tax losses	9,009	8,321
Write-down (or reverse of previous write-down) of DTA	(533)	(14,579)
Change in applicable tax rate	(14,360)	1,732
Tax holidays	4,654	13,675
Other tax credits (excluding R&D tax credits)	62	4,575
Non-recoverable foreign withholding taxes	(4,807)	(10,325)
Previous years' adjustments	2,617	(13,589)
Other	(1,082)	(3,993)
Tax expense at the effective tax rate for the year	**(75,179)**	**(103,240)**

The weighted average theoretical tax rate evolved from 27.5% in 2017 to 24.1% in 2018 for the continuing operations.

Excluding the impact of non-recurring items and the IAS 39 effect (until 2017), the recurring effective tax rate for 2018 was 24.4%. This compares to the 25.8% in 2017, reflecting amongst others the changes in the geographical earnings mix.

F14 INTANGIBLE ASSETS OTHER THAN GOODWILL

Thousands of Euros	DEVELOPMENT EXPENSES CAPITALISED	CONCESSIONS, PATENTS, LICENCES, ETC.	SOFTWARE	CO_2 EMISSION RIGHTS	OTHER INTANGIBLE ASSETS	TOTAL
At the beginning of previous year						
Gross value	106,741	80,073	134,489	8,879	31,505	**361,685**
Accumulated amortisation	(62,120)	(16,896)	(99,955)	–	(9,967)	**(188,938)**
Net book value at the beginning of previous year	**44,621**	**63,177**	**34,534**	**8,879**	**21,538**	**172,748**
acquisition through business combinations	–	35,513	394	–	–	**35,907**
additions	14,926	4,578	1,069	231	4,817	**25,621**
disposals	–	–	(247)	(1,695)	(266)	**(2,207)**
amortisation charged (included in “Depreciation and impairments”)	(11,811)	(10,955)	(9,513)	–	(3,701)	**(35,981)**
impairment losses recognised (included in “Depreciation and impairments”)	(1,644)	–	(522)	–	–	**(2,166)**
emission rights allowances	–	–	–	(33)	–	**(33)**
translation differences	(959)	(320)	(652)	–	(822)	**(2,755)**
other movements	(2,246)	(7,275)	4,688	–	(180)	**(5,013)**
At the end of previous year	**42,886**	**84,718**	**29,751**	**7,382**	**21,386**	**186,122**
Gross value	117,039	113,120	136,625	7,382	34,466	**408,632**
Accumulated amortisation	(74,152)	(28,402)	(106,874)	–	(13,081)	**(222,509)**
Net book value at the end of previous year	**42,887**	**84,718**	**29,751**	**7,382**	**21,385**	**186,122**
acquisition through business combinations	–	2,989	–	–	21,408	**24,397**
additions	20,247	5,007	1,997	2,929	1,577	**31,758**
disposals	–	(12,324)	–	–	–	**(12,324)**
amortisation charged (included in “Depreciation and impairments”)	(10,801)	(10,709)	(9,029)	–	(6,262)	**(36,802)**
impairment losses recognised (included in “Depreciation and impairments”)	(376)	–	(371)	–	–	**(747)**
emission rights allowances	–	–	–	795	–	**795**
translation differences	637	(1)	(32)	–	464	**1,069**
other movements	(5,241)	–	3,611	–	2,252	**621**
At the end of the year	**47,353**	**69,680**	**25,930**	**11,106**	**40,745**	**194,814**
Gross value	131,273	107,319	140,054	11,106	60,584	**450,336**
Accumulated amortisation	(83,920)	(37,639)	(114,124)	–	(19,839)	**(255,522)**
Net book value for continuing operations	**47,353**	**69,680**	**25,930**	**11,106**	**40,745**	**194,814**

“Additions” are mainly explained by capitalised expenses in new information systems and internally generated developments. € 22.6 million are linked to own productions, of which € 19.8 million are development expenses.

The acquisitions through business combination are related mainly to the acquisition of Materia’s catalyst IP and business portfolio. The line “disposals” includes the re-evaluation of the earnout related to the acquisition in 2016 of three NMC battery material patent families from 3M.

The line ‘other movements’ mainly includes the sale of the European operations of Technical Material and 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

Thousands of Euros	31/12/2017	31/12/2018
At the end of the previous year		
Gross value	150,820	158,536
Accumulated impairment losses	(18,228)	(15,851)
Net book value at the end of previous year	**132,592**	**142,685**
acquisition through business combinations	14,535	–
adjustment from subsequent identification of fair value of assets and liabilities	–	(1,701)
translation differences	(4,442)	1,507
At the end of the year	**142,685**	**142,491**
Gross value	158,536	158,457
Accumulated impairment losses	(15,851)	(15,966)
Net book value for continuing operations	**142,685**	**142,491**

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 to the changes of purchase price and the opening balance sheets of the acquired Haldor Topsoe entities (see note F8) and to exchange differences.

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

Thousands of Euros	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	TOTAL
31/12/2017	51,658	72,745	18,282	**142,685**
31/12/2018	50,012	74,232	18,247	**142,491**

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 5 years. On macroeconomic 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 2018 modelling used an average tax rate of 25.5% (in 2017, average tax rate of 28.5% was used) and a weighted average cost of capital post-tax of 8.5% (same as in 2017). Terminal values were determined on the basis of a perpetual growth rate of on average 2% (same as in 2017). Inflation rates were based on guidance coming from national and international institutes like the NBB or ECB.

F16 PROPERTY, PLANT AND EQUIPMENT

Thousands of Euros	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	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)	–	**(1,746,770)**
Net book value at the beginning of previous year	**356,333**	**499,100**	**55,319**	**2,052**	**157,599**	**1,070,403**
acquisition through business combinations	57,981	29,214	711	64	1,226	**89,196**
additions	5,747	25,715	9,234	650	309,710	**351,056**
disposals	(2,182)	(4,881)	(677)	(3)	(201)	**(7,944)**
depreciations (included in "Depreciation and impairments")	(29,892)	(108,446)	(15,880)	(161)	–	**(154,379)**
net impairment losses recognised (included in "Depreciation and impairments")	(26)	(1,427)	(327)	–	–	**(1,779)**
translation differences	(9,715)	(14,941)	(1,538)	(119)	(4,477)	**(30,790)**
other movements	29,002	111,585	9,521	(1,475)	(162,984)	**(14,351)**
At the end of previous year	**407,247**	**535,919**	**56,363**	**1,007**	**300,874**	**1,301,411**
Gross value	859,433	1,817,170	212,731	15,305	300,874	**3,205,515**
Accumulated depreciation	(452,186)	(1,281,251)	(156,368)	(14,298)	–	**(1,904,103)**
Net book value at the end of previous year	**407,247**	**535,919**	**56,363**	**1,007**	**300,874**	**1,301,411**
acquisition through business combinations	16,282	8,840	20	548	149	**25,838**
additions	4,418	21,958	10,313	142	429,158	**465,989**
disposals	(1,276)	(2,684)	(300)	(13)	(604)	**(4,877)**
depreciations (included in "Depreciation and impairments")	(32,772)	(120,434)	(16,082)	(163)	–	**(169,452)**
net impairment losses recognised (included in "Depreciation and impairments")	(1,513)	(4,192)	(273)	(1)	–	**(5,980)**
translation differences	1,465	(1,196)	(158)	22	(1,060)	**(928)**
other movements	91,501	220,937	17,755	(577)	(339,726)	**(10,111)**
At the end of the financial year	**485,351**	**659,148**	**67,638**	**964**	**388,791**	**1,601,891**
Gross value	977,173	2,090,305	226,527	14,678	388,791	**3,697,474**
Accumulated depreciation	(491,822)	(1,431,157)	(158,888)	(13,715)	–	**(2,095,582)**
Net book value for continuing operations	**485,351**	**659,148**	**67,638**	**964**	**388,791**	**1,601,892**
of which leasing	2,901	23	–	–	–	**2,924**
Gross value	3,300	43	31	–	–	**3,374**
Accumulated amortisation	(399)	(20)	(31)	–	–	**(450)**
Net book value for continuing operations	**2,901**	**23**	**–**	**–**	**–**	**2,924**

The non-maintenance related additions to property, plant and equipment relate mainly to the Energy & Surface Technologies business group. Those capex spending in 2019 are expected to be higher than in 2018, driven by the greenfield expansions underway in Rechargeable Battery Materials, the capacity expansion in Catalysis and the investments to be carried out during the extended shutdown in Hoboken.

The acquisitions through business combination are related to changes in the opening balance sheet of the acquired Haldor Topsoe entities (see note F8).

The line 'other movements' mainly includes the sale of the European operations of Technical Materials and 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 2017	PERCENTAGE 2018
For continuing operations				
ASSOCIATES				
IEQSA	Peru	PEN	40.00	40.00
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

The elements recognized 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 2.5% 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 supermaterials 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. 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 Umicore 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.

Thousands of Euros	NET BOOK VALUE	GOODWILL	TOTAL
At the end of previous year	**107,194**	**45,814**	**153,008**
profit for the year	6,720	-	**6,720**
dividends	(8,366)	-	**(8,366)**
change in other reserves	(1,504)	-	**(1,504)**
translation differences	(85)	(21)	**(106)**
other movements	1,620	-	**1,620**
At the end of the year for continuing operations	105,580	45,793	**151,372**

Umicore's share in the aggregated balance sheet and profit and loss items of the associates and joint ventures would have been as follows:

Thousands of Euros	31/12/2017	31/12/2018
Assets	239,481	249,274
Liabilities	113,883	125,299
Turnover	325,655	279,920
Net result	29,555	6,720

In the above table, they are no more assets and liabilities related to joint ventures.

F18 FINANCIAL ASSETS AT FAIR VALUE THROUGH OCI AND LOANS GRANTED

Thousands of Euros	FINANCIAL ASSETS AT FV THROUGH OCI	LOANS GRANTED
NON-CURRENT FINANCIAL ASSETS		
At the beginning of previous year	**26,414**	**1,201**
acquisition through business combinations	3	432
change in scope	–	340
increase	119	9,785
decrease	(570)	(93)
impairment losses (included in "Income from other financial instruments")	(7,229)	–
translation differences	(18)	(373)
fair value recognised in equity	3,738	–
other movements	(122)	(8)
At the end of previous year	**22,331**	**11,285**
acquisition through business combinations	233	0
increase	2,481	1,738
decrease	(17,461)	(126)
translation differences	(7)	(7)
fair value recognised in equity	(2,699)	–
other movements	3,150	(10,263)
At the end of the financial year for continuing operations	**8,028**	**2,627**
CURRENT FINANCIAL ASSETS		
At the end of the preceding financial year	**–**	**1,750**
increase	–	816
decrease	–	(3,538)
translation differences	–	9
other	–	7,233
At the end of the financial year for continuing operations	**–**	**6,270**

The movements of the financial assets at fair value through OCI are mainly linked to the Nyrstar shares, all of which were sold in the course of 2018.

The movements in the current loans granted are mainly related to repayment of loans granted in the context of the sale of Umicore Vital Thin Film Technologies in China, and to repayment of loans granted to equity companies. The movements in non current loans are mainly related to a convertible loan in Luxembourg.

The other movements are mainly related to transfer between current and non-current assets and to the convertible loan in Luxembourg partly converted in shares.

F19 INVENTORIES

Thousands of Euros	31/12/2017	31/12/2018
ANALYSIS OF INVENTORIES		
Base product eligible for metal hedging – gross value	1,401,385	2,088,873
Base product without metal hedging – gross value	216,769	199,410
Consumables – gross value	63,263	79,025
Write-downs	(70,289)	(69,771)
Advances paid	15,024	7,983
Contracts in progress	2,272	2,573
Total inventories for continuing operations	**1,628,423**	**2,308,094**
Total of discontinued operations	92,531	–

Inventories have increased by € 679.7 million compared with December 2017. This increase is mainly due to higher activities and higher metal prices.

Impairments of permanently tied-up metal inventories had an impact of € 6.0 million. Permanently tied-up metal inventories are classified under Base products eligible for metal hedging – gross value, and are not hedged against the metal price risk (refer to note 3.2.3).

The expense recognised in Raw Materials and Consumables in the income statement amounts to € 697.5 million.

Based on metal prices and currency exchange rates prevailing at the closing date, the value of metal inventory would have been € 1,009 million higher than the book value. However, 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

Thousands of Euros	NOTE	31/12/2017	31/12/2018
NON-CURRENT			
Cash guarantees and deposits		12,068	9,912
Other receivables maturing > 1 year		1,048	1,049
Assets employee benefits		1,029	1,172
Total for continuing operations		**14,145**	**12,133**
CURRENT			
Trade receivables (at cost)		1,075,389	893,621
Trade receivables (write-down)		(7,509)	(22,576)
Other receivables (at cost)		145,519	221,162
Other receivables (write-down)		(4,513)	(246)
Interest receivable		273	177
Fair value receivable financial instruments held for cash flow hedging	F33	46,628	17,184
Fair value receivable – financial instruments related to FV hedging	F33	11,169	18,844
Deferred charges and accrued income		68,705	17,813
Total for continuing operations		**1,335,660**	**1,145,979**

			OVERDUE BETWEEN			
Thousands of Euros	TOTAL	NOT DUE	0-30 DAYS	30-60 DAYS	60-90 DAYS	> 90 DAYS
AGEING BALANCE ANALYSIS AT THE BEGINNING OF THE YEAR						
Trade receivables (w/o doubtful and securitised receivables) – at cost	**1,053,414**	818,341	177,391	47,036	4,680	5,967
Other receivables – at cost	**145,519**	139,350	1,785	(105)	237	4,251
Loss allowance	**10,782**	4,656	818	747	1,477	3,084
Expected loss rate	**0.90%**	0.49%	0.46%	1.59%	30.04%	30.18%
AGEING BALANCE ANALYSIS AT THE END OF YEAR						
Trade receivables (w/o doubtful and securitised receivables) – at cost	**859,577**	615,298	166,279	55,650	14,320	8,029
Other receivables – at cost	**221,162**	216,234	51	3,147	67	1,663
Loss allowance	**13,948**	8,076	1,195	685	0	3,992
Expected loss rate	**1.29%**	0.97%	0.72%	1.17%	0.00%	41.19%

The Group applies the IFRS 9 simplified approach to measure expected credit losses which uses a lifetime expected loss allowance for all trade receivables. To measure the expected credit losses, trade receivables have been grouped based on shared credit risk characteristics and the days past due. The expected loss rates are based on the payment profiles of sales over a period of 60 months before 31 December 2018 or 1 January 2018 respectively and the corresponding historical credit losses experienced within this period. The historical loss rates are adjusted to reflect current and forward-looking information on macro-economic factors affecting the ability of the customers to settle the receivables. The Group has identified macro-economic factors, Probability of Default (PD) and Loss given Default (LGD) to be the most relevant factors, and accordingly adjusts the historical loss rates based on expected changes in these factors.

CREDIT RISK – TRADE RECEIVABLES

Thousands of Euros	TRADE RECEIVABLES (WRITE-DOWN)	OTHER RECEIVABLES (WRITE-DOWN)	TOTAL
AT THE BEGINNING OF PREVIOUS YEAR	(9,279)	(6,894)	**(16,169)**
Impairment losses recognised in P&L	(5,140)	(608)	**(5,748)**
Reversal of impairment losses	5,951	2,981	**8,932**
Impairment written off against asset carrying amount	242	–	**242**
Other movements	290	–	**286**
Translation differences	427	7	**433**
At the end of previous year	**(7,509)**	**(4,514)**	**(12,023)**
AT THE BEGINNING OF THE FINANCIAL YEAR	(7,509)	(4,514)	**(12,023)**
Change in accounting policies	(10,782)	–	**(10,782)**
Acquisition through business combination	(814)	–	**(814)**
Change in scope	(141)	–	**(141)**
Impairment losses recognised in P&L	(4,515)	–	**(4,515)**
Reversal of impairment losses	168	1,324	**1,492**
Impairment written off against asset carrying amount	71	2,939	**3,010**
Other movements	909	–	**909**
Translation differences	35	5	**40**
At the end of the financial year for continuing operations	**(22,577)**	**(247)**	**(22,823)**

In principle, Umicore uses credit insurance as a means to mitigate the credit risk related to trade receivables. In 2018, two credit policies with two different insurers were in place. At closing, € 652 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 indemnification cap set at regional or country level. The other policy covered € 144 million of trade receivables with a global annual deductible of € 5 million and a maximum indemnity per year of € 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

Thousands of Euros	31/12/2017	31/12/2018
Tax assets and liabilities		
Income tax receivables	36,036	61,672
Deferred tax assets	114,686	132,855
Income tax payable	(62,830)	(74,500)
Net deferred taxes for discontinued operations	(3,540)	(6,225)

	ASSETS		LIABILITIES		NET	
Thousands of Euros	2017	2018	2017	2018	2017	2018
At the end of preceding financial year	**117,605**	**114,686**	**(6,924)**	**(3,540)**	**110,681**	**111,146**
Change in accounting policies	–	1,313	–	(1,077)	–	236
Deferred tax recognised in the P&L	371	15,722	1,164	(6,363)	1,535	9,359
Deferred tax recognised in equity	(10,009)	12,057	3,173	(1,201)	(6,836)	10,856
Acquisitions through business combination	7,821	(348)	852	(832)	8,673	(1,181)
Change in scope	28	(3,605)	–	108	28	(3,496)
Translation adjustments	(3,147)	(633)	158	(122)	(2,989)	(755)
Transfer	1,965	(5,896)	(1,964)	6,802	1	905
Other movements	52	(440)	–	–	52	(440)
At the end of financial year for continuing operations	**114,686**	**132,855**	**(3,541)**	**(6,225)**	**111,146**	**126,630**

	ASSETS		LIABILITIES		NET	
Thousands of Euros	2017	2018	2017	2018	2017	2018
DEFERRED TAX IN RESPECT OF EACH TYPE OF TEMPORARY DIFFERENCE						
Intangible assets	8,857	15,541	(16,139)	(16,425)	(7,282)	(884)
Goodwill on fully consolidated companies	184	–	(394)	(605)	(210)	(605)
Property, plant and equipment	8,032	7,793	(19,386)	(16,926)	(11,354)	(9,133)
Long-term receivables	365	747	(129)	(135)	236	612
Inventories	36,452	47,629	(18,999)	(18,983)	17,453	28,646
Trade and other receivables	10,932	9,820	(15,549)	(10,163)	(4,617)	(343)
Group shareholders’ equity	–	–	(3,557)	(4,234)	(3,557)	(4,234)
Long-Term Financial Debt and other payable	9,435	5,446	(1,364)	(1,446)	8,071	4,000
Provisions Employee Benefits	68,226	60,121	(1,582)	(2,624)	66,644	57,497
Provisions for Environment	13,299	12,169	(535)	(461)	12,764	11,708
Provisions for other liabilities and charges	3,836	12,062	(3,242)	(3,195)	594	8,867
Current Financial Debt	37	1,039	–	(29)	37	1,010
Current Provisions for Environment	3,073	2,990	–	–	3,073	2,990
Current Provisions for Other Liabilities & Charges	8,340	12,247	(8)	(8)	8,332	12,239
Trade and other payables	23,709	24,040	(8,769)	(9,906)	14,940	14,134
Total deferred tax due to temporary differences	**194,777**	**211,644**	**(89,653)**	**(85,140)**	**105,124**	**126,504**
Tax losses to carry forward	**53,464**	**40,323**	**–**	**–**	**53,464**	**40,323**
Investments deductions	1,541	1,889	–	–	1,541	1,889
Notional interest carried forward	719	–	–	–	719	–
Other	5,959	2,957	–	–	5,959	2,957
Deferred tax assets not recognised	(55,662)	(45,043)	–	–	(55,662)	(45,043)
Total tax assets/liabilities	**200,798**	**211,770**	**(89,653)**	**(85,140)**	**111,146**	**126,630**
Compensation of assets and liabilities within same entity	(86,112)	(78,915)	86,112	78,915	–	–
Net amount	**114,686**	**132,855**	**(3,540)**	**(6,225)**	**111,146**	**126,630**

Thousands of Euros	2017 BASE	2018 BASE	2017 TAX	2018 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	191,477	163,421	55,662	45,043

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" (positive by € 7.3 million), "Intangibles" (positive by € 2.5 million) and "Provisions for employee benefits" (positive by € 0.7 million).

Deferred tax assets are only recognised to the extent that their utilisation is probable, ie 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 € 45.0 million mainly arise from tax losses (€ 39.2 million), deductions for investments (€ 1.9 million), and temporary differences on property plant and equipment (€ 1.0 million), on inventories (€ 1.5 million) and on trade payables (€ 1.9 million).

In accordance with IAS 12, a deferred tax liability on untaxed reserves of the Belgian companies, amounting potentially to € 37.5 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

Thousands of Euros	31/12/2017	31/12/2018
CASH AND CASH EQUIVALENTS		
Short-term investments: bank term deposits	16,948	13,687
Short-term investments: term deposits (other)	41	-
Cash-in-hands and bank current accounts	151,126	271,392
Total cash and cash equivalents	**168,115**	**285,079**
Bank overdrafts	12,218	27,965
Net cash as in Cash Flow Statement for continuing operations	**155,897**	**257,114**

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:

Thousands of Euros	FINANCIAL ASSETS AT FV THROUGH OCI RESERVES	CASH FLOW HEDGE RESERVES – COMMODITIES	CASH FLOW HEDGE RESERVES – CURRENCIES	CASH FLOW HEDGE RESERVES – IRS	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	**111**	**13,609**	**1,334**	**(715)**	**58,035**	**(231,993)**	**23,250**	**(7,830)**	**(144,199)**
Remeasurements recognised in other comprehensive income	3,738	2,796	19,781	89	(9,308)	2,369	6,418	–	**25,884**
Remeasurements derecognised out of other comprehensive income	–	(5,950)	(1,217)	–	2,749	14	–	–	**(4,404)**
Transfer from/to retained earnings	–	–	–	–	–	–	(6,402)	–	**(6,402)**
Change in scope	–	–	–	–	(3,711)	5,769	166	1,954	**4,178**
Exchange differences	–	–	(221)	–	97	3,918	–	(81,366)	**(77,572)**
Balance at the end of previous year	**3,849**	**10,456**	**19,675**	**(625)**	**47,862**	**(219,923)**	**23,432**	**(87,242)**	**(202,517)**
Balance at the beginning of the year	**3,849**	**10,456**	**19,675**	**(625)**	**47,862**	**(219,923)**	**23,432**	**(87,242)**	**(202,517)**
Remeasurements recognised in other comprehensive income	(2,699)	(18,395)	4,650	39	7,876	(6,390)	11,150	–	**(3,769)**
Remeasurements derecognised out of other comprehensive income	–	4,441	(20,736)	–	2,930	–	–	–	**(13,365)**
Transfer from/to retained earnings	–	–	–	–	–	–	(2,981)	–	**(2,981)**
Change in scope	–	(426)	–	–	(38)	697	–	–	**233**
Exchange differences	–	–	(179)	–	32	(1,268)	–	(3,831)	**(5,245)**
Balance at the end of the year	**1,150**	**(3,925)**	**3,411**	**(586)**	**58,663**	**(226,884)**	**31,600**	**(91,073)**	**(227,644)**

Gains and losses recognised in the other comprehensive income (OCI) on financial assets at fair value through OCI relate mainly to the fair value adjustments of the period on the Nyrstar shares (refer to note F18 on Financial assets at fair value through OCI).

The net losses recognised in the OCI regarding cash flow hedges (€ 13.7 million) 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 gains derecognised from OCI (€ 16.3 million) are the fair values of the cash flow hedging instruments existing at the opening which expired during the year. A gain of € 19.5 million was recognised in the income statement, as a result of expired cash flow hedges.

New net remeasurements as a result of changes in the actuarial assumptions on the defined post-employment benefit plans have been recognised in OCI for € -6.4 million.

The 2018 shares and stock option plans have led to a share-based payment reserve increase of € 11.1 million (refer to note F10 on employee benefits). € 3.0 million, linked to exercised options and free shares plans, have been transferred to retained earnings

F24 FINANCIAL DEBT

Thousands of Euros	BANK LOANS	OTHER LOANS	TOTAL
NON-CURRENT			
At the beginning of previous year	**20,000**	**4,396**	**24,396**
Increase	690,000	–	**690,000**
Decrease	–	(286)	**(286)**
Transfers	(20,000)	(4)	**(20,004)**
At the end of previous year	**690,000**	**4,106**	**694,104**
Increase	55,133	–	**55,133**
Decrease	–	(258)	**(258)**
Translation differences	(129)	(2)	**(130)**
Transfers	(40,000)	(3)	**(40,003)**
At the end of the financial year for continuing operations	**705,005**	**3,842**	**708,846**
CURRENT PORTION OF LONG-TERM FINANCIAL DEBTS			
At the end of the preceding financial year	**20,000**	**147**	**20,147**
Increase/decrease	(20,000)	(91)	**(20,091)**
At the end of the financial year for continuing operations	**–**	**56**	**56**

Thousands of Euros	SHORT-TERM BANK LOANS	BANK OVERDRAFTS	SHORT-TERM LOAN: COMMERCIAL PAPER	TOTAL
CURRENT				
At the end of the preceding financial year	**205,004**	**12,218**	**76,498**	**293,720**
Increase/decrease (including CTDs)	162,719	15,747	(35,482)	142,984
At the end of the financial year for continuing operations	**367,723**	**27,965**	**41,016**	**436,704**

Net financial debt at 31 December 2018 stood at € 860.6 million, up from € 839.9 million at the start of the year. The proceeds from the capital increase realised in February 2018 for an amount of € 892 million were largely used for Umicore's capital expenditures and net working capital spending.

The bank loans mainly consist of:

- two long-term private debt placements denominated in euros for a total of € 690 million (fair value € 696 million);
- short-term borrowings of € 368 million, reflecting the working capital needs and part of the daily management of the treasury operations;
- commercial paper short-term issuances for € 41 million;
- bank overdrafts of € 28 million assimilated to the utilisation of overnight bank credit facilities.

On 31 December 2018, there were no outstanding advances under the € 300 million Syndicated Bank Credit Facility maturing in October 2022 and no outstanding advances under the € 352 million Syndicated Bank Credit Facility maturing in April 2023.

The aforementioned Syndicated Bank Credit Facilities and the two long-term private debt placements require the Company to comply with certain financial covenants. Umicore has not faced any breach of those covenants in 2018 or in previous years.

The long-term debts mainly include debts in euros.

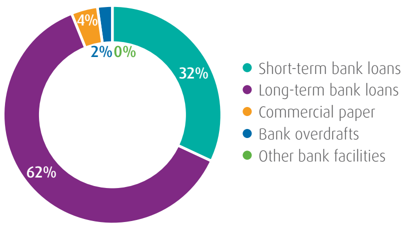
The line "new loans and repayment of loans" in the consolidated statement of cash flow does not include the movements on bank overdrafts and the currency translation differences.

The net gearing ratio end of 2018 of 24.4% (31.1% in 2017) is well within the Group's targeted capital structure limits.

Thousands of Euros	EUROS	OTHER	TOTAL
Analysis of long-term debts by currencies (including current portion)			
Bank loans	690,000	15,005	**705,005**
Other loans	3,897	–	**3,897**
Non-current financial debts (including current portion)	**693,897**	**15,005**	**708,902**

Thousands of Euros	2017	2018
Non-current financial debt	694,104	708,846
Current portion of non-current financial debt	20,147	56
Current financial debt	293,720	436,704
Cash and cash equivalents	(168,115)	(285,079)
Net financial debt	**839,856**	**860,527**

GROSS OUTSTANDING DEBT



Millions of Euros	2017	2018
Net financial debt including discontinued operations	839.9	**860.5**
Equity	1,862.6	**2,659.3**
Total	2,702.5	**3,519.9**
Gearing ratio (%)	31.1	**24.4**

F25 TRADE DEBT AND OTHER PAYABLES

Thousands of Euros	NOTE	31/12/2017	31/12/2018
NON-CURRENT			
Long-term trade payables		26,205	9,653
Other long-term debts		3,681	3,768
Investment grants and deferred income from grants		10,555	10,971
Total for continuing operations		**40,442**	**24,392**
CURRENT			
Trade payables		1,209,684	1,102,383
Advances received on contracts in progress		31,947	46,383
Tax payable (other than income tax)		27,742	37,005
Payroll and related charges		122,250	122,762
Other amounts payable		44,244	80,845
Dividends payable		11,696	11,655
Accrued interest payable		5,355	6,497
Fair value payable financial instrument held for cash flow hedging	F33	17,122	16,844
Fair value payable – financial instruments related to FV hedging	F33	12,035	11,844
Accrued charges and deferred income		157,740	153,140
Total for continuing operations		**1,639,815**	**1,589,360**

THE TAX PAYABLES (OTHER THAN INCOME TAX) MAINLY INCLUDE VAT PAYABLES. F26 LIQUIDITY OF THE FINANCIAL LIABILITIES

PREVIOUS FINANCIAL YEAR

	EARLIEST CONTRACTUAL MATURITY					
Thousands of Euros	< 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	> 5 YEARS	TOTAL
FINANCIAL DEBT	**116,741**	**64,273**	**132,853**	**684,104**	**–**	**1,007,972**
Current	**116,741**	**64,273**	**132,853**	**–**	**–**	**313,868**
Short-term bank loans	115,545	64,249	25,210	–	–	**205,004**
Bank overdrafts	1,184	–	11,034	–	–	**12,218**
Short-term loan: commercial paper	–	–	76,498	–	–	**76,498**
Current portion of long-term bank loans	–	–	20,000	–	–	**20,000**
Current portion of other long-term loans	12	25	111	–	–	**147**
Non-current	**–**	**–**	**–**	**694,104**	**–**	**694,104**
Bank loans	–	–	–	690,000	–	**690,000**
Other loans	–	–	–	4,104	–	**4,104**
TRADE AND OTHER PAYABLES	**1,078,419**	**393,214**	**162,297**	**12,405**	**33,921**	**1,680,256**
Current	**1,078,419**	**393,214**	**162,297**	**5,884**	**–**	**1,639,814**
Trade payables	848,563	309,995	51,128	–	–	**1,209,684**
Advances received on contracts in progress	10,889	7,866	13,192	–	–	**31,947**
Tax payable (other than income tax)	20,343	6,805	593	–	–	**27,742**
Payroll and related charges	36,308	35,221	50,721	–	–	**122,250**
Other amounts payable	16,591	7,297	20,356	–	–	**44,244**
Dividends payable	11,696	–	–	–	–	**11,696**
Accrued interest payable, third parties	4,255	1,087	14	–	–	**5,355**
Fair value payable financial instrument held for cash flow hedging	641	2,353	8,244	5,884	–	**17,122**
Fair value payable – financial instruments related to FV hedging	3,156	7,439	1,440	–	–	**12,035**
Accrued charges and deferred income	125,978	15,151	16,610	–	–	**157,740**
Non-current	**–**	**–**	**–**	**6,521**	**33,921**	**40,442**
Long-term trade payables	–	–	–	1,311	24,894	**26,205**
Other long-term debts	–	–	–	–	3,681	**3,681**
Investment grants and deferred income from grants	–	–	–	5,210	5,345	**10,555**

FINANCIAL YEAR

	EARLIEST CONTRACTUAL MATURITY					
Thousands of Euros	< 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	> 5 YEARS	TOTAL
FINANCIAL DEBT	**288,938**	**46,566**	**101,256**	**708,828**	**18**	**1,145,607**
Current	**288,938**	**46,566**	**101,256**	**–**	**–**	**436,760**
Short-term bank loans	265,390	46,541	55,791	–	–	**367,723**
Bank overdrafts	23,535	–	4,430	–	–	**27,965**
Short-term loan: commercial paper	–	–	41,016	–	–	**41,016**
Current portion of other long-term loans	13	25	18	–	–	**56**
Non-current	**–**	**–**	**–**	**708,828**	**18**	**708,846**
Bank loans	–	–	–	705,005	–	**705,005**
Other loans	–	–	–	3,823	18	**3,841**
TRADE AND OTHER PAYABLES	**1,028,453**	**384,302**	**168,779**	**13,008**	**19,211**	**1,613,754**
Current	**1,028,453**	**384,302**	**168,779**	**7,828**	**–**	**1,589,362**
Trade payables	767,995	295,217	39,172	–	–	**1,102,383**
Advances received on contracts in progress	10,885	19,292	16,206	–	–	**46,383**
Tax payable (other than income tax)	24,756	4,151	8,098	–	–	**37,005**
Payroll and related charges	35,653	30,823	56,286	–	–	**122,762**
Other amounts payable	52,150	9,869	18,826	–	–	**80,845**
Dividends payable	11,655	–	–	–	–	**11,655**
Accrued interest payable, third parties	5,095	1,166	235	–	–	**6,497**
Fair value payable financial instrument held for cash flow hedging	434	1,951	6,631	7,828	–	**16,844**
Fair value payable – financial instruments related to FV hedging	4,695	4,698	2,452	–	–	**11,844**
Accrued charges and deferred income	115,133	17,134	20,873	–	–	**153,140**
Non-current	**–**	**–**	**–**	**5,180**	**19,211**	**24,392**
Long-term trade payables	**–**	**–**	**–**	**–**	**9,653**	**9,653**
Other long-term debts	–	–	–	–	3,768	**3,768**
Investment grants and deferred income from grants	–	–	–	5,180	5,791	**10,971**

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 and German operations.

Thousands of Euros	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	**295,861**	**3,840**	**26,177**	**16,934**	**342,812**
Increase (included in "Payroll and related benefits")	22,242	260	5,914	888	**29,304**
Reversal (included in "Payroll and related benefits")	21	-	-	(1,619)	**(1,598)**
Use (included in "Payroll and related benefits")	(25,342)	(70)	(8,026)	(453)	**(33,891)**
Interest and discount rate impacts (included in "Finance cost – Net")	5,017	26	114	198	**5,354**
Translation differences	141	(223)	57	10	**(15)**
Transfers	(1,119)	22	3,241	(145)	**2,000**
Recognised in other comprehensive income	6,226	-	-	-	**6,225**
Other movements	(13,924)	(66)	(153)	(2,258)	(16,401)
At the end of the financial year for continuing operations	**289,124**	**3,788**	**27,324**	**13,554**	**333,790**

Thousands of Euros	31/12/2017	MOVEMENTS 2018	31/12/2018
Belgium	53,638	9,326	62,964
Germany	266,551	(21,003)	245,548
Subtotal	**320,189**	**(11,677)**	**308,512**
Other entities	22,623	2,655	25,278
Total for continuing operations	**342,812**	**(9,022)**	**333,790**

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 OCI" 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. The line "other movements" relates mainly to the sale of the European operations of Technical Materials.

The following disclosure requirements under IAS 19 amended were derived from the reports obtained from external actuaries.

Umicore defined benefit pension schemes for the 2 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 € 237.7 million and assets for € 174.7 million. They foresee 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% per annum (6.0% per annum for salary conversions before 2014). All retirement plans represent a defined benefit obligation of € 252.5 million and assets for € 6.9 million.

Funding

As mentioned 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.

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 plans' 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 ie 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 IAS19 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 risks are related to Belgium only:

- Because of the Belgian legislation applicable to second 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 € 105.6 million as at the end of December 2018 and related plan assets to € 97.5 million.

Thousands of Euros	2017	2018
CHANGE IN BENEFIT OBLIGATION		
Benefit obligation at beginning of the year	**521,153**	**552,021**
Current service cost	29,236	28,920
Interest cost	9,612	9,359
Plan Participants' Contributions	843	861
Remeasurements – changes in demographic assumptions	(2,233)	4,678
Remeasurements – changes in financial assumptions	2,964	(7,727)
Remeasurements – experience adjustments	4,611	5,967
Benefits paid from plan/Company	(22,994)	(28,913)
Expenses paid	(2,080)	(2,101)
Plan combinations	13,277	(14,915)
Exchange rate changes	(2,368)	902
Benefit obligation at end of the year	**552,021**	**549,052**

Thousands of Euros	2017	2018
CHANGE IN PLAN ASSETS		
Fair value of plan assets at the beginning of the year	**183,246**	**209,774**
Expected return on plan assets	3,403	3,668
Remeasurements on plan assets	5,286	(4,410)
Employer contributions	32,265	34,671
Member contributions	843	861
Benefits paid from plan/Company	(22,994)	(28,913)
Expenses paid	(2,145)	(2,151)
Net transfer in/(out) (including the effect of any business combinations/divestitures)	11,836	1,630
Exchange rate changes	(1,966)	971
Fair value of plan assets at the end of the year	**209,774**	**216,101**

Pension plans mainly in Belgium, Korean, Liechtenstein, Germany 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.

Thousands of Euros	2017	2018
AMOUNT RECOGNISED IN THE BALANCE SHEET		
Defined benefit obligations	552,021	549,052
Fair value of plan assets	209,774	216,101
Funded Status	**342,247**	**332,951**
Effect of asset ceiling/onerous liability	–	–
Net liability (asset)	**342,247**	**332,951**
COMPONENTS OF PENSION COSTS		
Amounts recognised in profit and loss statement		
Current service cost	29,236	28,920
Interest cost	9,612	9,359
Interest income on plan assets	(3,403)	(3,668)
Remeasurement of Other Long-Term Benefits	1,176	1,099
Administrative expenses and taxes	36	50
Total pension cost recognised in P&L account	**36,657**	**35,760**
Total of discontinued operations	2,662	0

Thousands of Euros	2017	2018
Amounts recognised in other comprehensive income		
Cumulative remeasurements at opening	**195,689**	**194,314**
Change in scope	–	(697)
Remeasurements of the year	(1,212)	6,225
Minorities	151	57
Recycled into P&L	(81)	–
Exchange differences	(233)	50
Total recognised in the OCI at subsidiaries	**194,314**	**199,949**
Remeasurements at associates and joint ventures	25,606	26,932
Total recognised in the OCI	**219,921**	**226,882**
Remeasurements (recognised in other comprehensive income)		
Effect of changes in demographic assumptions	(2,147)	4,358
Effect of changes in financial assumptions	2,758	(7,579)
Effect of experience adjustments	3,465	5,121
(Return) on plan assets (excluding interest income)	(5,167)	4,329
Total remeasurements included in Other Comprehensive Income	**(1,091)**	**6,229**
Total of discontinued operations	830	–

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.

	2017	2018
PRINCIPAL ACTUARIAL ASSUMPTIONS		
Weighted average assumptions to determine benefit obligations at year end		
Discount rate (%)	1.73	1.85
Rate of compensation increase (%)	2.81	2.85
Rate of price inflation (%)	1.79	1.78
Rate of pension increase (%)	1.38	1.36
Weighted average assumptions used to determine net cost		
Discount rate (%)	1.66	1.73
Rate of compensation increase (%)	2.76	2.81
Rate of price inflation (%)	1.78	1.79
Rate of pension increase (%)	1.48	1.38

Thousands of Euros	2018 FAIR VALUE OF ALL PLAN ASSETS	2018 FAIR VALUE OF PLAN ASSETS WITH QUOTED MARKET PRICE
Plan assets		
Cash and cash equivalents	14,452	14,447
Equity instruments	35,773	35,763
Debt instruments	83,849	83,595
Real estate	7,091	5,506
Assets held by insurance company	72,299	60,736
Other	2,636	972
Total plan assets	**216,100**	**201,019**

Assumptions are recommended by the local actuaries in line with the IAS19 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.

Thousands of Euros	2018 VALUATION TREND +0.25%	2018 VALUATION TREND -0.25%
Sensitivity to trend rate assumptions on discount rate		
Present value of defined benefit obligation	519,074	554,981
Weighted average duration of benefit obligation (in years)	12.86	13.92
Sensitivity to trend rate assumptions on inflation rate		
Present value of defined benefit obligation	538,190	515,733
Sensitivity to trend rate assumptions on salary increase rate		
Present value of defined benefit obligation	541,935	529,357

Thousands of Euros	2017	2018
BALANCE SHEET RECONCILIATION		
Balance sheet liability (asset) as of previous year	**337,907**	**342,247**
Pension expense recognised in P&L in the financial year	36,657	35,760
Amounts recognised in SoCI	(1,091)	6,229
Employer contributions via funds in the financial year	(20,712)	(23,174)
Employer contributions paid directly in the financial year	(11,553)	(11,497)
Amounts recognised due to plan combinations	1,441	(16,545)
Exchange rate adjustment – (gain)/loss	(402)	(69)
Balance sheet liability (asset) as of end of the year	**342,247**	**332,951**

AT 31 DECEMBER

Thousands of Euros	2014	2015	2016	2017	2018
Present value of defined benefit obligation	527,028	469,027	521,153	552,021	549,052
Fair value of plan assets	195,326	156,670	183,246	209,774	216,101
Deficit (surplus) in the plan	**331,702**	**312,357**	**337,907**	**342,247**	**332,951**
Experience adjustments on plan assets	(10,444)	(3,320)	(16,036)	(5,286)	4,410
Experience adjustments on plan liabilities	(4,543)	5,399	14,861	4,611	5,967

Thousands of Euros	2018
EXPECTED CASH FLOWS FOR FOLLOWING YEAR	
Expected employer contributions	33,344
Expected total benefit payments	
Year 1	22,001
Year 2	23,409
Year 3	28,387
Year 4	24,973
Year 5	25,644
Next 5 years	123,196

F28 STOCK OPTION PLANS GRANTED BY THE COMPANY

PLAN	EXPIRY DATE	EXERCISE	EXERCISE PRICE IN EUROS (THE EXERCISE PRICE MAY BE HIGHER IN CERTAIN COUNTRIES)	NUMBER OF OPTIONS STILL TO BE EXERCISED
ISOP 2012	12/02/2019	all working days of Euronext Brussels	17.66	63,574
			18.84	–
			18.00	10,000
				73,574
ISOP 2013	12/02/2020	all working days of Euronext Brussels	18.19	309,905
			19.34	25,000
				334,905
ISOP 2014	10/02/2021	all working days of Euronext Brussels	16.14	451,750
			15.80	25,375
			16.49	15,000
				492,125
ISOP 2015	09/02/2022	all working days of Euronext Brussels	17.29	828,625
			18.90	27,000
			19.50	30,250
				885,875
ISOP 2016	04/02/2023	all working days of Euronext Brussels	16.63	1,217,750
				1,217,750
ISOP 2017	13/02/2024	all working days of Euronext Brussels	25.50	1,122,250
			27.04	47,750
				1,170,000
ISOP 2018	08/02/2025	all working days of Euronext Brussels	40.90	1,182,625
				1,182,625
Total				**5,356,854**

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.

	2017		2018	
	NUMBER OF SHARE OPTIONS	WEIGHTED AVERAGE EXERCISE PRICE	NUMBER OF SHARE OPTIONS	WEIGHTED AVERAGE EXERCISE PRICE
DETAILS OF THE SHARE OPTIONS OUTSTANDING DURING THE YEAR				
Outstanding at the beginning of the year	**5,645,750**	**16.94**	**5,218,199**	**18.98**
Granted during the year	1,170,000	25.56	1,182,625	40.90
Exercised during the year	1,597,551	17.39	1,037,470	17.31
Expired during the year	–	–	6,500	–
Outstanding at the end of the year	**5,218,199**	**18.98**	**5,356,854**	**24.14**
Exercisable at the end of the year	5,218,199	18.98	5,356,854	24.14

The options outstanding at the end of the year have a weighted average contractual life until March 2023.

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

Thousands of Euros	PROVISIONS FOR SOIL CLEAN-UP & SITE REHABILITATION	OTHER ENVIRONMENTAL PROVISIONS	TOTAL
At the end of previous year	**66,086**	**3,107**	**69,193**
Change in scope	(150)	–	**(150)**
Increase	62	2,544	**2,606**
Reversal	(1,810)	(548)	**(2,359)**
Use (included in "Other operating expenses")	(2,180)	(1,607)	**(3,787)**
Discounting (included in "Finance cost – Net")	(785)	–	**(785)**
Translation differences	(467)	(15)	**(482)**
At the end of the financial year for continuing operations	**60,755**	**3,481**	**64,236**
Of which – Non-current	49,960	1,077	**51,037**
– Current	10,795	2,404	**13,199**

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 € 5.0 million, with additional provisions which are lower than the uses and reversals of existing provisions.

Most of the uses of provisions for soil and groundwater remediation for the period are linked to the realization during the period of site remediation programs in Brazil, in the USA and in Belgium.

No major movements occurred in 2018 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 10 years.

F30 PROVISIONS FOR OTHER LIABILITIES AND CHARGES

Thousands of Euros	PROVISIONS FOR REORGANISATION & RESTRUCTURING	PROVISIONS FOR OTHER LIABILITIES AND CHARGES	TOTAL
At the end of the previous year	**37,051**	**49,369**	**86,416**
Change in accounting policies	–	(4,973)	**(4,973)**
Change in scope	(128)	(409)	**(537)**
Acquisition through business combinations	–	11,507	**11,507**
Increase	8,536	75,249	**83,785**
Reversal	(1,470)	(3,458)	**(4,928)**
Use (included in "Other operating expenses")	(5,875)	(8,109)	**(13,985)**
Translation differences	(247)	267	**20**
Transfers	(1,938)	673	**(1,265)**
Financial charges	–	(146)	**(146)**
Other movements	–	(35)	**(35)**
At the end of the financial year for continuing operations	**35,928**	**119,936**	**155,859**
Of which – Non-current	19,737	41,353	**61,090**
– Current	16,190	78,583	**94,773**

Provisions for reorganization 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 € 69.4 million.

The acquisitions through business combinations are related to the acquisition from Halder Topsoe (Brazil and Denmark).

Additional provisions for reorganization and restructuring have been taken in Brazil, related to the discontinuation of certain activities. The use of provisions for reorganization and restructuring were mainly taken in Brazil, USA and Germany. Some reversals of prior years' provisions were taken in Germany and France.

The impact of changes in accounting policies is related to the shift from IAS 39 to IFRS 9 on hedge accounting and the treatment of hedging instruments and hedged items.

The increase of provisions for other liabilities and charges is mainly related to the introduction of IFRS 9 for fair value hedging where under the revised standard for some commodities no fair value hedge accounting can be obtained. Consequently, IAS 37 principles for onerous contracts are applied in these circumstances (see Note F4.5). Other increases relate to increased warranty and litigation risks in Belgium, Korea and China (see Note F4.5).

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

Thousands of Euros	NOTE	31/12/2017	30/06/2018	31/12/2018
Intangible assets	F14, F15	328,808	342,213	337,305
Property, plant and equipment	F16	1,301,411	1,420,698	1,601,892
Investments accounted for under the equity method	F17	153,008	160,702	151,372
Financial assets at FV through OCI	F18	22,331	4,870	8,028
Inventories	F19	1,628,423	1,886,298	2,308,094
Non-current receivable (excluding assets employee benefits)	F20	13,118	10,590	10,962
Adjusted current accounts receivable		1,282,173	1,492,030	1,123,503
Income tax receivable		36,036	35,856	61,672
Assets included in capital employed		**4,765,307**	**5,353,256**	**5,602,829**
Non-current trade and other payables	F25	40,442	41,997	24,391
Adjusted current accounts payable		1,622,720	1,859,413	1,572,515
Translation reserves	F23	(87,244)	(98,010)	(91,075)
Non-current provisions	F29, F30	87,853	129,889	112,128
Current provisions	F29, F30	67,759	75,691	107,973
Income tax payable		62,830	59,575	74,500
Liabilities included in capital employed		**1,794,359**	**2,068,556**	**1,800,432**
Capital employed		**2,970,947**	**3,284,700**	**3,802,397**
IAS 39 and eliminations		32,596	674	16
Capital employed as published		**3,003,544**	**3,285,374**	**3,802,413**
Average Capital Employed in half year preceding closing date		2,861,459		3,543,894
Average Capital Employed in year preceding closing date		**2,709,925**		**3,344,176**
Recurring EBIT in year preceding closing date	F9	410,254		513,564
ROCE in year preceding closing date		**15.14%**		**15.36%**

Current account receivable and payable included in "Capital Employed" do not 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

Thousands of Euros	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	FINANCIAL ASSETS AT FV THROUGH OCI
ASSETS						
Financial assets at FV through OCI		**22,331**	**–**	**–**	**–**	**22,331**
Financial assets at FV through sales – Shares	1	22,331	–	–	–	22,331
Loans granted		**13,035**	**–**	**–**	**13,035**	**–**
Loans to associates and non-consolidated affiliates		13,035	–	–	13,035	–
Trade and other receivables		**1,349,805**	**11,169**	**46,628**	**1,292,009**	**–**
Non-current						
Cash guarantees and deposits		12,068	–	–	12,068	–
Other receivables maturing in more than 1 year		1,048	–	–	1,048	–
Assets employee benefits		1,029	–	–	1,029	–
Current						
Trade receivables (at cost)		1,075,389	–	–	1,075,389	–
Trade receivables (write-down)		(7,509)	–	–	(7,509)	–
Other receivables (at cost)		145,519	–	–	145,519	–
Other receivables (write-down)		(4,513)	–	–	(4,513)	–
Interest receivable	2	273	–	–	273	–
Fair value of financial instruments held for cash flow hedging	2	46,628	–	46,628	–	–
Fair value receivable – financial instruments related to FV hedging		11,169	11,169	–	–	–
Deferred charges and accrued income		68,705	–	–	68,705	–
Cash and cash equivalents		**168,115**	**–**	**–**	**168,115**	**–**
Short-term investments: bank term deposits		16,948	–	–	16,948	–
Short-term investments: term deposits (other)		41	–	–	41	–
Cash-in-hand and bank current accounts		151,126	–	–	151,126	–
TOTAL OF FINANCIAL INSTRUMENTS (ASSETS)		**1,553,286**	**11,169**	**46,628**	**1,473,159**	**22,331**

AS AT THE END OF PREVIOUS YEAR

Thousands of Euros	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	FINANCIAL ASSETS AT FV THROUGH OCI
LIABILITIES						
Financial debt		**1,004,013**	**–**	**–**	**1,007,974**	**–**
Non-current						
Bank loans		686,000	–	–	690,000	–
Other loans		4,106	–	–	4,106	–
Current						
Short-term bank loans		225,044	–	–	225,004	–
Bank overdrafts		12,218	–	–	12,218	–
Short-term loan: commercial paper		76,498	–	–	76,498	–
Other loans		148	–	–	148	–
Trade and other payables		**1,680,256**	**12,035**	**17,122**	**1,651,099**	**–**
Non-current						
Long-term trade payables		26,205	–	–	26,205	–
Other long-term debts		3,681	–	–	3,681	–
Investments grants and deferred income from grants		10,555	–	–	10,555	–
Current						
Trade payables		1,209,684	–	–	1,209,684	–
Advances received on contracts in progress		31,947	–	–	31,947	–
Tax – other than income tax – payable		27,742	–	–	27,742	–
Payroll and related charges		122,250	–	–	122,250	–
Other amounts payable		44,244	–	–	44,244	–
Dividends payable		11,696	–	–	11,696	–
Accrued interest payable		5,355	–	–	5,355	–
Fair value financial instrument held for cash flow hedging	2	17,122	–	17,122	–	–
Fair value payable – financial instruments related to FV hedging	2	12,035	12,035	–	–	–
Accrued charges and deferred income		157,740	–	–	157,740	–
TOTAL OF FINANCIAL INSTRUMENTS (LIABILITIES)		**2,684,269**	**12,035**	**17,122**	**2,659,073**	**–**

AS AT THE END OF THE FINANCIAL YEAR

Thousands of Euros	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	FINANCIAL ASSETS AT FV THROUGH OCI
ASSETS						
Financial assets at FV through OCI		**8,028**	**–**	**–**	**–**	**8,028**
Financial assets at FV through OCI – Shares	1	8,028	–	–	–	8,028
Loans granted		**8,897**	**–**	**–**	**8,897**	**–**
Loans to associates and non-consolidated affiliates		8,897	–	–	8,897	–
Trade and other receivables		**1,158,112**	**18,844**	**17,184**	**1,122,084**	**–**
Non-current						
Cash guarantees and deposits		9,912	–	–	9,912	–
Other receivables maturing in more than 1 year		1,049	–	–	1,049	–
Assets employee benefits		1,172	–	–	1,172	–
Current						
Trade receivables (at cost)		893,621	–	–	893,621	–
Trade receivables (write-down)		(22,576)	–	–	(22,576)	–
Other receivables (at cost)		221,162	–	–	221,162	–
Other receivables (write-down)		(246)	–	–	(246)	–
Interest receivable	2	177	–	–	177	–
Fair value of financial instruments held for cash flow hedging	2	17,184	–	17,184	–	–
Fair value receivable – financial instruments related to FV hedging		18,844	18,844	–	–	–
Deferred charges and accrued income		17,813	–	–	17,813	–
Cash and cash equivalents		**285,079**	**–**	**–**	**285,079**	**–**
Short-term investments: bank term deposits		13,687	–	–	13,687	–
Cash-in-hand and bank current accounts		271,392	–	–	271,392	–
TOTAL OF FINANCIAL INSTRUMENTS (ASSETS)		**1,460,116**	**18,844**	**17,184**	**1,416,060**	**8,028**

AS AT THE END OF THE FINANCIAL YEAR

Thousands of Euros	LEVEL	FAIR VALUE	CARRYING AMOUNT HELD FOR TRADING – NO HEDGE ACCOUNTING	CASH FLOW HEDGE ACCOUNTING	LOANS, RECEIVABLES AND PAYABLES	FINANCIAL ASSETS AT FV THROUGH OCI
LIABILITIES						
Financial debt		**1,151,608**	**–**	**–**	**1,145,607**	**–**
Non-current						
Bank loans		711,005	–	–	705,005	–
Other loans		3,842	–	–	3,842	–
Current						
Short-term bank loans		367,723	–	–	367,723	–
Bank overdrafts		27,965	–	–	27,965	–
Short-term loan: commercial paper		41,016	–	–	41,016	–
Other loans		56	–	–	56	–
Trade and other payables		**1,613,750**	**11,844**	**16,844**	**1,585,062**	**–**
Non-current						
Long-term trade payables		9,653	–	–	9,653	–
Other long-term debts		3,768	–	–	3,768	–
Investments grants and deferred income from grants		10,971	–	–	10,971	–
Current						
Trade payables		1,102,383	–	–	1,102,383	–
Advances received on contracts in progress		46,383	–	–	46,383	–
Tax – other than income tax – payable		37,005	–	–	37,005	–
Payroll and related charges		122,762	–	–	122,762	–
Other amounts payable		80,845	–	–	80,845	–
Dividends payable		11,655	–	–	11,655	–
Accrued interest payable		6,497	–	–	6,497	–
Fair value financial instrument held for cash flow hedging	2	16,844	–	16,844	–	–
Fair value payable – financial instruments related to FV hedging	2	11,844	11,844	–	–	–
Accrued charges and deferred income		153,140	–	–	153,140	–
Total of financial instruments (Liabilities)		**2,765,358**	**11,844**	**16,844**	**2,730,669**	**–**

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 financial assets at fair value through OCI 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 € 2.8 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 € 1.9 million higher/lower if the energy prices would strengthen/weaken by 10%. The fair value on financial instruments related to cash flow hedging purchases would have been € 8.4 million higher/lower if the metal prices would strengthen/weaken by 10%.

The fair value on other commodity sales financial instruments would have been € 20.6 million lower/higher and the fair value on other commodity purchases financial instruments would have been € 20.7 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 € 3.2 million lower if the EUR would strengthen against USD by 10% and would have been € 4.0 million higher if the EUR would weaken against USD by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been € 2.5 million lower if the EUR would strengthen against ZAR by 10% and would have been € 3.0 million higher if the EUR would weaken against ZAR by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been € 10.5 million lower if the USD would strengthen against KRW by 10% and would have been € 12.5 million higher if the USD would weaken against KRW by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been € 3.2 million lower if the EUR would strengthen against CNY by 10% and would have been € 3.9 million higher if EUR would weaken against CNY by 10%.

The fair value of forward currency contracts related to cash flow hedging would have been € 3.2 million lower if the USD would strengthen against CNY by 10% and would have been € 3.4 million higher if USD would weaken against CNY by 10%.

The fair value of other forward currency contracts sold would have been € 57.6 million higher if the EUR would strengthen against USD by 10% and would have € 70.4 million lower if the EUR would weaken against USD by 10%.

The fair value of other forward currency contracts bought would have been € 18.8 million lower if the EUR would strengthen against USD by 10% and would have been € 22.9 million higher if the EUR would weaken against USD by 10%.

The fair value of net position of current assets and liabilities exposed to USD would have been € 22.3 million lower if the EUR would strengthen against USD by 10% and would have been € 27.2 million higher if the EUR 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	
Thousands of Euros	31/12/2017	31/12/2018	31/12/2017	31/12/2018
Forward commodities sales	59,314	22,498	(10,571)	(5,779)
Forward commodities purchases	(135,996)	(101,452)	21,027	1,854
Forward currency contracts sales	431,038	486,796	21,013	1,060
Forward currency contracts purchases	(103,090)	(89,545)	(1,337)	3,790
Forward IRS contracts	23,006	64,290	(625)	(586)
Total fair value impact subsidiaries			**29,505**	**340**
Recognised under trade and other receivables			46,628	17,184
Recognised under trade and other payables			(17,122)	(16,844)
Fair value impact associates and joint ventures				(1,440)
Total			**29,505**	**(1,100)**

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, platinum nickel, lead and copper. The forward commodity purchase contracts are set up to hedge primarily the electricity, gas and fuel oil price risks and the commodity nickel.

The forward currency contracts are set up to hedge USD towards EUR, KRW, CNY, BRL and CAD 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 IFRS 9 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 2017 and 2018.

The fair values of the hedging instruments are not significant. The forward commodities sales contracts are set up to hedge primarily the following commodities: gold, silver, palladium, platinum, nickel, lead and copper. The forward commodity purchase contracts are set up to hedge the electricity, gas and fuel oil price risks and the commodity nickel. The forward currency contracts are set up to hedge USD towards EUR, KRW, CNY, BRL and CAD and EUR towards ZAR.

33.2 FINANCIAL INSTRUMENTS RELATED TO FAIR VALUE HEDGING

	NOTIONAL OR CONTRACTUAL AMOUNT		FAIR VALUE	
Thousands of Euros	31/12/2017	31/12/2018	31/12/2017	31/12/2018
Forward commodities sales	140,686	194,909	(7,030)	3,101
Forward commodities purchases	(131,626)	(234,618)	3,714	4,861
Forward currency contracts sales	629,862	1,350,314	6,364	(3,741)
Forward currency contracts purchases	(254,281)	(669,549)	(3,915)	2,779
Total fair value impact subsidiaries			**(867)**	**7,000**
Recognised under trade and other receivables			11,169	18,844
Recognised under trade and other payables			(12,035)	(11,844)
Total			**(867)**	**7,000**

The fair values of the hedging instruments are not significant as the closing rates do not materially differ from the strike rates. The forward commodities sales contracts are set up to hedge primarily the following commodities: gold, silver, palladium, platinum, rhodium, nickel, lead and copper. The forward commodity purchase contracts are set up to hedge primarily gold and copper. The forward currency contracts are set up to hedge USD towards EUR, KRW, CNY, BRL and CAD and EUR towards CNY, ZAR, CAD, CHF, JPY, THB, DKK and NOK.

The principles and documentation related to the Group’s transactional hedging are included in note F3 “Financial risk management”. The Group’s fair value hedging of currencies and commodities comply with IFRS 9 fair value hedge accounting rules (see also note F2.21.1). In the absence of hedge accounting documentation as defined under IFRS 9, 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

Thousands of Euros	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)	–	98	295	–	**393**
Total forward purchases (CFH)	534	1,073	7,313	12,107	**21,027**
Total forward purchases (FV Hedging)	578	2,751	401	–	**3,730**
FX Risk					
Forward currency contracts sales (CFH)	1,807	3,630	19,181	590	**25,208**
Forward currency contracts sales (FV Hedging)	4,890	1,506	1,019	–	**7,415**
Forward currency contracts purchases (FV Hedging)	23	–	–	–	**23**
FINANCIAL INSTRUMENTS LIABILITIES (FAIR VALUE)					
Interest Rate Risk					
Interest rate swaps	–	–	–	(626)	**(626)**
Commodity risk					
Total forward sales (CFH)	(359)	(1,839)	(6,028)	(2,738)	**(10,964)**
Total forward sales (FV Hedging)	(1,883)	(4,386)	(761)	–	**(7,030)**
Total forward purchases (FV Hedging)	(88)	71	–	–	**(16)**
FX Risk					
Forward currency contracts sales (CFH)	(276)	(508)	(2,079)	(1,332)	**(4,195)**
Forward currency contracts purchases (CFH)	(6)	(6)	(137)	(1,187)	**(1,337)**
Forward currency contracts sales (FV Hedging)	(362)	(678)	(11)	–	**(1,051)**
Forward currency contracts purchases (FV Hedging)	(823)	(2,446)	(669)	–	**(3,939)**

AS AT THE END OF THE FINANCIAL YEAR

Thousands of Euros	EARLIEST CONTRACTUAL MATURITY (UNDISCOUNTED) – NOTIONAL AMOUNTS < 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	TOTAL	EARLIEST CONTRACTUAL MATURITY (UNDISCOUNTED) – FAIR VALUE < 1 MONTH	1 TO 3 MONTHS	3 MONTHS – 1 YEAR	1 TO 5 YEARS	TOTAL
FINANCIAL INSTRUMENTS ASSETS										
Commodity risk										
Total forward sales (CFH)	373	384	2,177	–	**2,934**	21	42	162	–	**225**
Total forward purchases (CFH)	–	–	11,907	–	**11,907**	–	–	7,244	–	**7,244**
Total forward sales (FV Hedging)	29,812	53,330	32,724	–	**115,866**	2,867	4,066	1,035	–	**7,968**
Total forward purchases (FV Hedging)	7,939	188,556	175	–	**196,670**	417	5,202	5	–	**5,624**
FX Risk										
Forward currency contracts sales (CFH)	20,905	42,216	187,937	–	**251,058**	404	867	4,654	–	**5,925**
Forward currency contracts purchases (CFH)	276	610	5,460	83,199	**89,545**	15	33	264	3,478	**3,790**
Forward currency contracts sales (FV Hedging)	643,282	64,923	60,945	2,162	**771,312**	1,540	(104)	142	–	**1,578**
Forward currency contracts purchases (FV Hedging)	427,440	158,318	39,515	–	**625,273**	1,960	1,524	190	–	**3,674**
FINANCIAL INSTRUMENTS LIABILITIES										
Interest Rate Risk										
Interest rate swaps	24,290	–	–	40,000	**64,290**	(277)	–	–	(309)	**(586)**
Commodity risk										
Total forward sales (CFH)	–	3,660	15,904	–	**19,564**	–	(1,546)	(4,457)	–	**(6,003)**
Total forward purchases (CFH)	276	610	5,460	83,199	**89,545**	2	5	60	(5,458)	**(5,391)**
Total forward sales (FV Hedging)	7,252	53,095	18,697	–	**79,044**	(312)	(4,147)	(408)	–	**(4,867)**
Total forward purchases (FV Hedging)	20,319	10,188	7,441	–	**37,948**	(415)	(188)	(160)	–	**(763)**
FX Risk										
Forward currency contracts sales (CFH)	9,505	19,010	85,933	121,290	**235,738**	(159)	(410)	(2,234)	(2,061)	**(4,864)**
Forward currency contracts sales (FV Hedging)	397,094	78,235	103,674	–	**579,003**	(3,494)	11	(1,837)	–	**(5,320)**
Forward currency contracts purchases (FV Hedging)	25,086	15,541	3,649	–	**44,276**	(475)	(374)	(47)	–	**(896)**

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.

Thousands of Euros	2017	2018
Adjustments for non-cash transactions		
Depreciations	190,494	206,577
Adjustment IAS 39	21,048	–
Negative goodwill taken in result	(10,900)	–
(Reversal) Impairment charges	11,779	6,780
Mark to market of inventories and commitments	(37,465)	53,081
Exchange difference on long-term loans	(3,602)	(395)
Inventories and bad debt provisions	8,488	13,805
Depreciation on government grants	(671)	(1,236)
Share-based payments	6,129	11,150
Change in provisions	5,417	58,518
Total	**190,714**	**348,280**
ADJUSTMENTS FOR ITEMS TO DISCLOSE SEPARATELY OR UNDER INVESTING AND FINANCING CASH FLOWS		
Tax charge of the period	74,670	103,240
Interest (income) charges	19,483	33,217
(Gain) loss on disposal of fixed assets	5,504	(5,963)
Dividend income	(1,380)	(124)
Total	**98,274**	**130,369**
CHANGE IN WORKING CAPITAL REQUIREMENT ANALYSIS		
Inventories	(439,601)	(679,671)
Trade and other receivables	(497,337)	166,200
Trade and other payables	482,394	(54,837)
As in the consolidated balance sheet	**(454,544)**	**(568,308)**
Non-cash items (*)	47,791	(133,286)
Items disclosed elsewhere (**)	(4,489)	12,451
Impact of business combination	195,485	(6,885)
Currency translation differences	(59,754)	(11,991)
As in the consolidated cash flow statement	**(275,509)**	**(708,017)**

(*) 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.

Thousands of Euros	NET CASH AND CASH EQUIVALENT	LOANS (W/O BANK OVERDRAFTS)	NET FINANCIAL DEBT
At the end of previous year	**155,897**	**995,754**	**839,857**
Cash flow of the period	101,217	121,887	20,670
At the end of the financial year	**257,114**	**1,117,641**	**860,527**

34.2 NET CASH FLOW GENERATED BY OPERATING ACTIVITIES

Operating cash flow after tax from continuing operations is € -27.3 million. The change in working capital requirements for continuing operations is € -708.0 million in 2018, in line with higher activity levels and metal prices.

34.3 NET CASH FLOW USED IN INVESTING ACTIVITIES

Net cash used in investing activities for continuing operations increased by € 80.3 million in 2018. Capital expenditure for continuing operations reached € 477.6 million if capitalized R&D costs are excluded as per Umicore's definition of capital expenditures (refer to Glossary). The capital expenditure spending in 2019 is expected to be higher than in 2018, driven by the greenfield expansions underway in Rechargeable Battery Materials, the capacity expansions in Catalysis to cater for additional demand and the investments to be carried out during the extended shutdown in Hoboken.

The acquisition in additional shareholdings in subsidiaries for € 123.5 million is related to the increase of Umicore's interest in its Chinese cathode material production entity from 70% to 90%. Acquisitions of new subsidiaries accounted for a cash out of € 24.2 million and mainly include the acquisition of Materia's metathesis catalyst IP and business portfolio (see note F8). The disposal of subsidiaries for € 35.7 million mainly include the sale of the European Technical Materials business to Saxonia Edelmetalle GmbH.

34.4 NET CASH FLOW USED IN FINANCING ACTIVITIES

The cash generated in financing activities is mainly the consequence of the increase of share capital during the first semester 2018 as a result of an equity placement through an accelerated bookbuild for a total gross amount of € 891.5 million (€ 881 million net of transaction costs), capital increase from minorities (€ 10.8 million) and the net increase of the indebtedness (€ 120.3 million). The cash used in financing activities is mainly related to the purchase and use of own shares to cover the exercise of options (€ 79.3 million), and the payment of dividends (€ 195.4 million) and of interest (€ 31.7 million).

Thousands of Euros	2017	2018
Acquisition of tangible assets	351,249	466,078
Acquisition of intangible assets	25,621	31,758
Acquisitions of assets	**376,870**	**497,836**
Capitalised R&D	14,926	20,247
Capital expenditure for continuing operations	**361,944**	**477,589**
Acquisitions of assets for discontinued operations	3,305	–
Capital expenditure, including discontinued	**365,250**	**477,589**

F35 RIGHTS AND COMMITMENTS

Thousands of Euros	2017	2018
Guarantees constituted by third parties on behalf of the Group	57,329	85,289
Guarantees constituted by the Group on behalf of third parties	937	551
Guarantees received	109,735	127,423
Goods and titles held by third parties in their own names but at the Group's risk	383,582	474,563
Commitments to acquire and sell fixed assets	3,754	3,130
Commercial commitments for commodities purchased (to be received)	574,203	582,971
Commercial commitments for commodities sold (to be delivered)	1,082,347	1,112,482
Goods and titles of third parties held by the Group	1,902,691	2,650,255
Miscellaneous rights and commitments	2,522	1,684
Total	**4,117,100**	**5,038,348**

35.1 GUARANTEES CONSTITUTED BY THIRD PARTIES ON BEHALF OF THE GROUP

These 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

These are guarantees or irrevocable undertakings given by the Group in favor 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

These 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

These 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

These 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

These 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. It also includes in a lesser extent some non-metal operating leases.

The Group leases metals (particularly gold, silver, platinum and palladium) 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 2018, there was a net lease-in position of € 1,121 million vs. € 715 million at end of 2017. This increase is mainly caused by higher volumes and higher metal prices.

F36 CONTINGENCIES

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

Thousands of Euros	2017	2018
TRANSACTIONS WITH JOINT VENTURES AND ASSOCIATES		
Operating income	208,385	263,197
Operating expenses	(223,437)	(290,356)
Financial income	213	180
Dividends received	(12,331)	(8,366)

Thousands of Euros	2017	2018
OUTSTANDING BALANCES WITH JOINT VENTURES AND ASSOCIATES		
Current trade and other receivables	43,090	48,939
Current trade and other payables	67,394	78,493
Loan asset short-term	1,538	–

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.

Thousands of Euros	2017	2018
BOARD OF DIRECTORS		
Salaries and other compensation	**910,256**	**1,036,151**
Fixed portion	289,433	296,088
Variable portion (based on attended meetings)	275,000	239,000
Value of the share grant	322,456	498,500
Benefit in kind company car chairman	2,767	2,563
Umicore contribution to the Swiss social security	20,600	–

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.

Thousands of Euros	2017	2018
EXECUTIVE COMMITTEE		
Salaries and other benefits	**9,466,215**	**10,996,814**
Short-term employee benefits	4,312,306	3,766,440
Post-employment benefits	1,202,590	1,167,807
Other long-term benefits	983,562	1,260,250
Share-based payments	2,967,757	4,802,317

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 2018 for services rendered in 2017. The Remuneration Report shows the value of the shares granted in 2019 or services rendered in the reporting year ie 2018.

The figures related to the undeferred part of the variable cash remuneration linked to the individual performance for the reference year 2018, 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 2018 are included in the other long-term benefits. The amounts to be paid in 2021 will depend on long-term performance measures and the exact amounts paid will be included in the Remuneration Report of 2020.

F38 EVENTS AFTER THE REPORTING PERIOD

Following the Board of Directors meeting of 7 February 2019, Umicore announced that a gross dividend of € 0.75 per share would be proposed to the Annual Shareholders Meeting (of which € 0.35 per share was already paid out as interim dividend in August 2018).

F39 EARNINGS PER SHARE

Euros	2017	2018
Excluding discontinued operations		
EPS – basic	0.98	1.33
EPS – diluted	0.97	1.31
Including discontinued operations		
EPS – basic	0.97	1.33
EPS – diluted	0.96	1.31
Recurring EPS	**1.22**	**1.36**

The following earnings figures have been used as the numerator in the calculation of basic and diluted earnings per share:

NUMERATOR ELEMENTS

Thousands of Euros	NOTE	2017	2018
Net consolidated profit, Group share	F9		
Without discontinued operations		214,836	316,984
With discontinued operations		211,943	316,984
Recurring net consolidated profit, Group share	F9	**266,771**	**326,430**

The following numbers of shares have been used as the denominator in the calculation of basic and diluted earnings per share:

DENOMINATOR ELEMENTS

	2017	2018
Total shares issued as at 31 December	**224,000,000**	**246,400,000**
of which treasury shares	4,505,567	5,356,583
of which shares outstanding	219,494,433	241,043,417
Weighted average number of outstanding shares	**219,079,587**	**239,202,537**
Potential dilution due to stock option plans	2,069,303	2,484,056
Adjusted weighted average number of outstanding shares	221,148,890	241,686,593

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 2018, no new shares were created as a result of the exercise of stock options with linked subscriptions rights. During the year Umicore used 1,037,470 of its treasury shares in the context of the exercise of stock and 70,502 for shares granted. In the course of 2018, Umicore bought back 1,958,988 own shares. On 31 December 2018, Umicore owned 5,356,583 of its own shares representing 2.17% of the total number of shares issued as at that date.

On 8 February 2018, Umicore placed 22,400,000 new shares with institutional and other investors through an accelerated bookbuild conducted under private placement exemptions. The new shares represented 10% of the number of outstanding shares prior to the transaction (224,000,000). On 12 February 2018, the new shares were admitted to trading on Euronext Brussels and as from that day, the total number of shares outstanding amount to 246,400,000. The net proceeds of the accelerated bookbuild (€ 881 million) will be used to fund Umicore's growth investments and will provide Umicore with more flexibility to pursue potential acquisitions and partnership.

F40 IFRS DEVELOPMENTS

The following **new standards and amendments** to standards have been issued, and are **mandatory** for the first time for the financial year beginning 1 January 2018 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 replaces the provisions of IAS 39 on the accounting and classification of financial assets and liabilities, financial instruments and hedging. Umicore adopted IFRS 9 as from 1 January 2018, resulting in a number of changes in accounting policies and adjustments in the financial statements (see F2 Accounting Policies).

- **IFRS 15** "Revenue from contracts with customers". As of 1 January 2018, IFRS 15 "Revenue from Contracts with Customers" replaces IAS 18 "Revenue", IAS 11 "Construction Contracts" and a number of revenue related interpretations. The new standard establishes a five-step model to account for revenue arising from contracts with customers. Umicore has assessed each of the revenue streams of every business unit from taking the new five-step model into accounts and concludes that IFRS 15 does not have any material impact of the revenue recognition of the Group. Consequently, the Group did not make any retrospective adjustments.

The following new standards, amendments and interpretation to standards have been issued, and are mandatory for the first time for the financial year beginning 1 January 2019. Those **have 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.

  A project has been launched during 2017 in which the preparation phase, consisting of capturing all contracts and necessary information for IFRS 16 has been kicked off. During 2018, Group management in close collaboration with local management, has further evaluated and assessed the impact applying the criteria under IFRS 16. 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 will stay out-of-scope of the leasing standard. Umicore has leases for cars, forklifts, some offices and other buildings. As per note F35 on rights and commitments, non-metal operating leases amount for € 45 million, out of which € 7 million represent low value or short-term leases which will be both recognised on a straight-line basis as expense in profit and loss. The expected impact on the right-of-use assets and lease liability in the balance sheet will be around € 37 million. The impact on the EBIT will not be material for Umicore.

- **IFRIC 23**, “Uncertainty over income tax treatments”. This interpretation clarifies the accounting for uncertainties in income taxes. The interpretation is to be applied to the determination of taxable profit (tax loss), tax bases, unused tax losses, unused tax credits and tax rates, when there is uncertainty over income tax treatments under IAS 12. Umicore does not expect that IFRIC 23 will have a material impact as compared to equity.

For all other new interpretations and standards not yet mandatory as from 1 January 2018, management has no indications that this will result in a material impact on the Group’s consolidated financial statements.

F41 AUDITORS’ REMUNERATION

The world-wide remuneration for the statutory auditor and its affiliated companies totalled € 2.3 million, including an amount of € 1.7 million for the statutory audit missions (€ 0.5 million for the audit of the mother company) and € 0.6 million for non-statutory audit services including audit-related and other attestation services (€ 0.3 million) and other non-audit related services (€ 0.3 million).

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
B-1000 Brussels (Belgium)

The statutory auditor did not express any reservations in respect of the annual accounts of Umicore.

The legal reserve of € 55.0 million which is included in the retained earnings is not available for distribution.

Thousands of Euros	31/12/2016	31/12/2017	31/12/2018
SUMMARISED BALANCE SHEET AT 31 DECEMBER			
1. ASSETS			
Fixed assets	**3,847,718**	**4,117,701**	**2,121,852**
I. Formation expenses	–	–	8,256
II. Intangible assets	117,183	110,018	114,447
III. Tangible assets	365,507	398,464	425,814
IV. Financial assets	3,365,028	3,609,219	1,573,335
Current assets	**752,880**	**950,746**	**1,696,083**
V. Amounts receivable after more than one year	373	373	362,679
VI. Stocks and contracts in progress	351,864	339,484	641,452
VII. Amounts receivable within one year	216,042	381,570	502,354
VIII. Investments	164,809	200,213	158,103
IX. Cash at bank and in hand	1,901	780	3,937
X. Deferred charges and accrued income	17,891	28,326	27,558
Total assets	**4,600,598**	**5,068,447**	**3,817,935**
2. LIABILITIES AND SHAREHOLDERS' EQUITY			
Capital and reserves	**1,222,013**	**1,210,824**	**2,148,647**
I. Capital	500,000	500,000	550,000
II. Share premium account	6,610	6,610	848,130
III. Revaluation surplus	91	91	91
IV. Reserves	289,770	281,908	363,257
V. Result carried forward	270,367	264,486	152,177
Vbis. Result for the period	148,537	149,816	227,001
VI. Investments grants	6,638	7,913	7,991
Provisions and deferred taxation			
VII.A. Provisions for liabilities and charges	111,775	117,426	125,326
Creditors	**3,266,810**	**3,740,197**	**1,543,962**
VIII. Amounts payable after more than one year	1,981,249	1,693,125	692,996
IX. Amounts payable within one year	1,193,761	1,973,777	758,953
X. Accrued charges and deferred income	91,800	73,295	92,013
Total liabilities and shareholders' equity	**4,600,598**	**5,068,447**	**3,817,935**

Thousands of Euros	31/12/2016	31/12/2017	31/12/2018
INCOME STATEMENT			
I. Operating income	2,415,676	2,960,635	3,628,486
II. Operating charges	(2,412,640)	(2,900,861)	(3,532,944)
III. Operating result	**3,036**	**59,774**	**95,542**
IV. Financial income	258,002	161,063	193,305
V. Financial charges	(113,178)	(69,747)	(59,393)
VI. Result on ordinary activities before taxes	**147,860**	**151,090**	**229,454**
X. Income taxes	677	(1,274)	(2,453)
XI. Result for the period	**148,537**	**149,816**	**227,001**
XII. Result for the period available	**148,537**	**149,816**	**227,001**

Thousands of Euros	2016	2017	2018
APPROPRIATION ACCOUNT			
A. Profit (loss) to be appropriated	**520,620**	**568,719**	**641,302**
1. Profit (loss) for the financial year	148,537	149,816	227,001
2. Profit (loss) carried forward	372,083	418,903	414,301
C. Appropriation to equity	**40,296**	**7,862**	**(81,349)**
3. To the reserve for own shares	40,296	7,862	(76,349)
4. Allocation to legal reserves			(5,000)
D. Profit (loss) to be carried forward[1]	**418,903**	**414,301**	**379,178**
2. Profit (loss) to be carried forward	418,903	414,301	379,178
F. Profit to be distributed[1]	**(142,013)**	**(162,280)**	**(180,775)**
1. Dividends			
Ordinary shares	**(142,013)**	**(162,280)**	**(180,775)**

(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 2019; the gross dividend of EUR 0.75 will not change.

	THOUSANDS OF EUROS	NUMBER OF SHARES
STATEMENT OF CAPITAL		
A. Share capital		
1. Issued capital		
At the end of the preceding financial year	500,000	224,000,000
At the end of the financial year	550,000	246,400,000
2. Structure of the capital		
2.1. Categories of shares		
Ordinary shares	550,000	246,400,000
2.2. Registered shares or bearer shares		
Registered		46,912,818
Bearer		199,487,182
E. Authorised unissued capital	**55,000**	

	% CAPITAL	NUMBER OF SHARES	NOTIFICATION DATE
G. SHAREHOLDER BASE[1]			
Family Trust Desmarais, Albert Frère and Groupe Bruxelles Lambert S.A.	17.50	43,110,052	07/12/2018
BlackRock Investment Management	4.32	10,641,933	27/02/2018
Norges Bank	3.11	7,663,845	08/08/2018
Others	72.90	179,627,587	31/12/2018
Own shares held by Umicore	2.17	5,356,583	31/12/2018
	100.00	246,400,000	
of which free float	100.00	246,400,000	

(1) At 31 December 2018, 5,356,854 options on Umicore shares are still to be exercised. This amount includes 5,356,854 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 2018, 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.

8 March 2019,

Marc Grynberg
Chief Executive Officer

CONTENTS

ENVIRONMENTAL KEY FIGURES*

	UNIT	NOTES	2014	2015	2016	2017	2018
Metal emissions to water (load)	kg	E2	5,639	4,459	3,738	1,437	**1,861**
Metal emissions to water (impact units)		E2	543,332	328,013	339,001	125,688	**144,657**
Metal emissions to air (load)	kg	E2	13,309	14,544	1,761	1,829	**1,564**
Metal emissions to air (impact units)		E2	128,465	135,660	86,098	84,463	**88,044**
SO_x emissions	tonne	E2	1,189	1,197	892	661	**657**
NO_x emissions	tonne	E2	425	452	365	320	**304**
CO_2e emissions (scope1+2) – Market-based**	tonne	E3	664,568	710,143	662,059	633,704	**765,756**
CO_2e emissions (scope1+2) – Location-based**	tonne	E3	–	–	735,065	663,307	**783,843**
Energy consumption	terajoules	E4	7,304	7,742	6,737	6,532	**7,447**
Water use	thousand m^3	E5	4,645	4,904	4,851	4,755	**5,885**
Total waste produced	tonne	E7	76,810	72,663	77,625	72,804	**78,777**
Hazardous waste	tonne	E7	54,824	51,525	59,437	55,442	**58,758**
of which recycled	%	E7	7.5	7.8	3.8	4.3	**5.3**
Non-hazardous waste	tonne	E7	21,986	21,138	18,188	17,373	**20,018**
of which recycled	%	E7	60.4	56.3	57.8	58.2	**62.2**
Compliance excess rate	%	E9	0.9	0.8	0.9	0.1	**0.1**
Environmental complaints	N°	E9	31	25	19	34	**29**
Sites ISO 14001 certified	%	E9	97	92	88	92	**91**

* Data for 2015 and 2014 includes the divested business unit Zinc Chemicals, while data from 2016 onwards does not. Data for 2016 and previous years includes the divested business unit Building Products, while data for 2017 and 2018 does not.

** CO_2e emissions data for 2015 and 2014 is an aggregation of market-based and location-based scope 2 emissions. A direct comparison to 2016-2018 data is not possible. If such comparison were to be made, the most meaningful approximation is to use the market-based 2016-2018 figure (see section E3 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. The following sites are no longer reported compared to 2017: Amsterdam (The Netherlands; Jewelry and Industrial Metals), Providence (USA) and Vicenza (Italy) (both Technical Materials). Due to the acquisition of the HDD and stationary catalyst businesses from Haldor Topsøe, the acquisition of Eurotungstene from Eramet and the acquisition of full ownership of the joint venture Ordeg the following sites were added to the reporting scope: Bayport (USA; Automotive Catalysts), Frederikssund (Denmark; Automotive Catalysts), Grenoble (France; Cobalt and Specialty Materials), Joinville (Brazil; Automotive Catalysts), Lyngby (Denmark; Automotive Catalysts), Onsan, Songdo (both Korea; Automotive Catalysts) and Tianjin (China; Automotive Catalysts). This brings the total number of consolidated industrial sites that report environmental data to 54, up from 49 in 2017. (Note that the former activities of the business unit Technical Materials at the Hanau site (Germany) were divested and no longer reported in 2018.)

Within the scope of Umicore's reporting framework, most of the sites report their environmental data at the end of the third quarter together with a forecast for the fourth quarter. In January, the forecasted values are checked by the sites for significant deviations and, if needed, corrected. The 6 sites with the largest environmental impact for 2018 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 Korea; Energy & Surface Technologies). They report their full year figures. A sensitivity analysis undertaken for the 2018 data on energy consumption data indicates that the potential deviation of the Group environmental performance would be less than 2% 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 2017 annual report has been restated in the 2018 report. Unless mentioned otherwise, environmental key performance indicators (KPIs) for 2015 and 2014 include the business unit Zinc Chemicals that was divested during 2016, while 2016-2018 KPIs do not include Zinc Chemicals. Likewise, environmental KPIs for 2016 and previous years include the business unit Building Products that was divested during 2017, while 2017 and 2018 KPIs do not include Building Products.

See more details on Umicore's management approach, p.72.

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, marked a great step towards sustainable operations. We consider the emission levels achieved in 2015 our 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 considering 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 considered 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 vapor/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 2018 was restricted to the identified material sites (10 or fewer). All other sites were requested to only submit data in case of significant upward deviations from the 2015 baseline for the site. Sites that joined Umicore in 2018 were evaluated with regard to their past emissions to water and air, and in case their emissions were on a par with the top 95% emitters of Umicore in 2015, these new sites were also required to submit data and included in the absolute emission figures.

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 (ie 2018) with those of the reference year 2015 and using the same scope of activities as 2015 for the material sites.

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 (ie 2018) by the 2015 emission intensity (see example below). The baseline 2015 is then calculated by adding up 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 2018, 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 2018 is then: activity level of 2018 (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 2018 represents a reduction of 10% compared to what it would have been under 2015 operating conditions.

The 2015 baseline is recalculated yearly (2016-2018 and the following years). It is defined as the metal emissions that would have been expected with the activity volumes of the reporting year (ie 2018), 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.

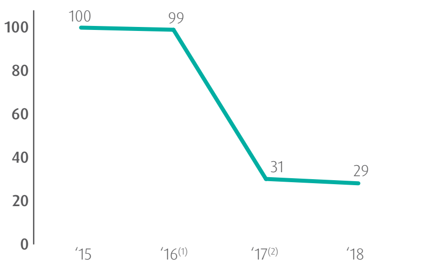
The calculation of metal emissions to water and air covers fully consolidated operations and activities that are part of the Group during the reporting year (2016-2018 and the following years) and that were also part of the Group in 2015. Performance is reported only for the total of the material sites for each KPI.

SO_X and NO_X emissions are expressed in absolute numbers in tonnes/year.

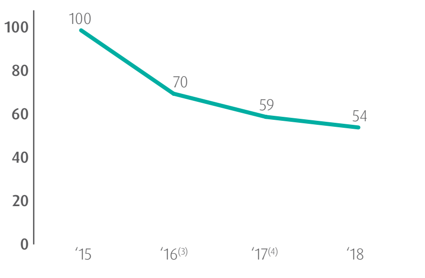
GROUP DATA – EMISSION SCOPE METAL EMISSIONS TO AIR AND WATER

	UNIT	BASELINE 2015 IN RELATION TO 2018	2016	2017	2018
Metal emissions to water	impact units	453,075	339,001	125,688	**131,723**
Metal emissions to air	impact units	163,101	86,098	84,463	**87,664**

METAL EMISSION REDUCTION PERFORMANCE (TO WATER)



METAL EMISSION REDUCTION PERFORMANCE (TO AIR)



(1) Baseline 2015 in relation to 2016 was 343,649, leading to a reduction of 1% in 2016 in comparison with 2015.
(2) Baseline 2015 in relation to 2017 was 409,691, leading to a reduction of 69% in 2017 in comparison with 2015.
(3) Baseline 2015 in relation to 2016 was 123,831, leading to a reduction of 30% in 2016 in comparison with 2015.
(4) Baseline 2015 in relation to 2017 was 144,049, leading to a reduction of 41% in 2017 in comparison with 2015.

METAL EMISSIONS TO WATER

The metal emissions to water in 2018 using the defined scope resulted in 131,723 impact units. Metal emissions to water in 2015 using the defined scope were 290,714 impact units. To assess progress on our commitment, this 2015 metal emissions level normalized for 2018 activity was 453,075 impact units. In 2018, we have therefore achieved a 71% reduction of metal emissions to water in terms of impact for the defined scope compared to 2015.

This evolution can be largely attributed to our Hoboken plant (Belgium, Recycling). The increased efficiency of the waste water treatment plant at the site due to investments in improvement projects over the last years is paying off further, and some efficiency improvements and scale-effects after further capacity increase of precursor production at our Cheonan UMAK site (Korea, Energy & Surface Technologies) have also contributed to the decrease of the emission intensity in terms of impact by metals emissions to water. This continuing positive trend was balanced to some degree by a year-on-year increase in metal emissions to water at our site in Subic (Philippines, Energy & Surface Technologies). Furthermore, while reducing significantly in metal emissions to water by load, our site in Olen (Belgium, Energy & Surface Technologies) experienced an increase in impact to water due to an increase in certain emitted metals with an elevated environmental impact factor, related to variations in input material composition and waste water treatment efficiency.

METAL EMISSIONS TO AIR

The metal emissions to air in 2018 using the defined scope were 87,664 impact units. Metal emissions to air in 2015 using the defined scope resulted in 117,918 impact units. To assess progress on our commitment, this 2015 metal emissions level normalized for 2018 activity was 163,101 impact units. In 2018, we have therefore achieved a 46% reduction of metal emissions to air in terms of impact for the defined scope.

The reductions are observed across many sites in scope to a varying degree, but in particular our efforts to reduce emissions to air at our site in Hoboken (Belgium, Recycling) bore fruit in 2018 and can be ascribed for the most part to further efforts that improved air filter efficiency and to improvements in overall process efficiency.

LEAD EMISSIONS AT HOBOKEN (BELGIUM, RECYCLING)

In 2015, infrastructure works at the roof of the lead refinery led to increased lead deposition in the surrounding residential area of Moretusburg. Consequently, the biological monitoring results showed an increased number of children with levels of lead in blood above the recommended reference level of 5 microgram/dl blood (Center for Disease Control and Prevention, USA). This biological monitoring campaign is conducted twice per year by the provincial authorities.

During 2018, the site continued its action plan, including the installation of an enhanced ventilation system in the lead refinery, which significantly contributed to lower lead in fine dust deposition values.

While the average lead levels among children in the neighborhood have decreased, continued action and follow-up will be needed to further reduce the number of children who show levels of lead in blood above the reference value. At the 2018 fall biological monitoring campaign, 23% of the children still have levels of lead in blood above the reference value of 5 µg/dl, compared to 32% in 2017.

OTHER EMISSIONS

	UNIT	2014	2015	2016	2017	2018
SO_X emissions	tonne	1,189	1,197	892	661	**657**
NO_X emissions	tonne	425	452	365	320	**304**

The SO_X emissions for the Group stayed relatively stable with a slight decrease from 661 t in 2017 to 657 t in 2018.

The NO_X emissions decreased from 320 t in 2017 to 304 t in 2018, a 5% reduction.

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 (eg 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 2 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 specific contracts that sites have in place with their energy suppliers, considering 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 2 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	2014	2015	2016	2017	2018
CO_2e emissions (scope1+2) – Market-based	tonne	664,568	710,143	662,059	633,704	**765,756**
CO_2e emissions (scope1+2) – Location-based	tonne	–	–	735,065	663,307	**783,843**

Total CO_2e market-based emissions in 2018 were 765,756 t. Total CO_2e location-based emissions were 783,843 t. The difference between these 2 figures, 18,087 t, is due to specific energy contracts with a favorable 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 market-based emissions in 2017 were 633,704 t, and total CO_2e location-based emissions in 2017 were 663,307 t.

The comparison of 2018 with 2017 market-based emissions shows an increase by 21%. This can mainly be attributed to added capacity and higher activity levels across several sites of the business unit Rechargeable Battery Materials and at the Hoboken site (Belgium, Recycling) as well as new acquisitions, mainly in the business unit Automotive Catalysts.

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	UMICORE GROUP(1)
CO_2e emissions (scope1+2) – Market-based	tonne	131,469	308,167	325,672	**765,756**
CO_2e emissions (scope1+2) – Location-based	tonne	148,541	315,114	319,802	**783,843**

(1) Umicore Group data includes the data for Corporate Headquarters in Brussels, Belgium.

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 is 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 28 sites that contributed more than 95% to the 2018 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 (ie 2018) with the energy consumption of the reference year 2015 and using the same scope of activities as 2015.

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 (ie 2018) by the 2015 energy intensity (see example below). The baseline 2015 is then calculated by adding up 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 2018 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 2018 is then: activity level of 2018 (220 t) x 2015 energy intensity (400 GJ/t) = 88,000 GJ.

Therefore the 80,000 GJ consumed in 2018 represents an improvement of 10% compared to what it would have been under 2015 operating conditions.

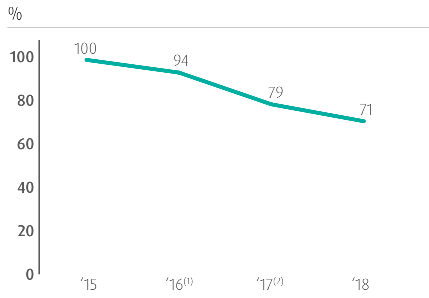
The baseline 2015 is recalculated yearly (2016-2018 and the following years). It is defined as the energy consumption that would have been expected with the activity volumes of the reporting year (ie 2018), but with the energy intensity of the reference year 2015. The performance for each year is expressed 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 (2016-2018 and the following years) and that were also part of the Group in 2015. Therefore, the sites of the former business units Zinc Chemicals and Building Products and a few other individual sites that are all not with Umicore any more are not in the reporting scope of this KPI. Likewise, several sites that joined Umicore in 2016-2018 are therefore also not in the reporting scope for this KPI. The energy consumption data also includes our corporate headquarters in Brussels (Belgium).

ENERGY EFFICIENCY OBJECTIVE

	UNIT	BASELINE 2015 IN RELATION TO 2018	2016	2017	2018
Energy consumption	terajoules	8,692	6,241	6,082	**6,183**

NORMALISED ENERGY CONSUMPTION



(1) Baseline 2015 in relation to 2016 was 6,664 TJ, leading to a reduction of 6% in 2016 in comparison with 2015.
(2) Baseline 2015 in relation to 2017 was 7,720 TJ, leading to a reduction of 21% in 2017 in comparison with 2015.

The energy consumption 2018 using the defined scope was 6,183 TJ. The energy consumption in 2015 using the defined scope was 5,487 TJ. To assess progress on our commitment, this 2015 energy consumption level normalized for 2018 activity was 8,692 TJ. This means that for equivalent production levels we consumed 29% less energy. In other words, the energy efficiency has improved by 29% in 2018 compared to the reference year 2015.

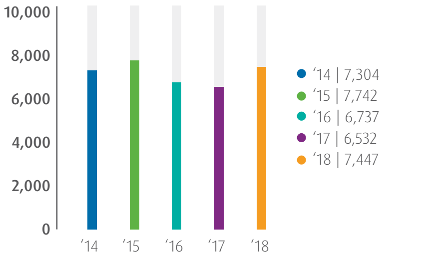
This improvement is mainly due to scale-effects in connection with the ongoing capacity increase at our Rechargeable Battery Materials sites in Korea and China. Further efficiency improvements and consolidations at other sites also contributed to the overall decrease in energy intensity.

Energy efficiency projects have been implemented at the most important sites in line with foregoing sustainable development objectives since 2006. In 2018, 28 sites represented more than 95% of the Group's energy consumption. At 12 of these sites, 42 energy efficiency projects have been reported as being implemented during 2018 and contributed significant energy savings.

ABSOLUTE ENERGY CONSUMPTION

ENERGY CONSUMPTION (ABSOLUTE)

terajoules



Total energy consumption increased from 6,532 TJ in 2017 to 7,447 TJ in 2018 a 14% increase year-on-year. This can mainly be attributed to added capacity and higher activity levels across several sites of the business unit Rechargeable Battery Materials, as well as new acquisitions mainly in the business unit Automotive Catalysts.

Indirect energy consumption by primary energy source (purchased electricity, steam and compressed air) for production sites and office buildings in 2018 was 3,405 TJ. Direct energy consumption by primary energy source (fuel, gas oil, natural gas, LPG, coal and cokes) was 4,042 TJ.

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	UMICORE GROUP (1)
Energy consumption	terajoules	1,328	3,272	2,839	**7,447**

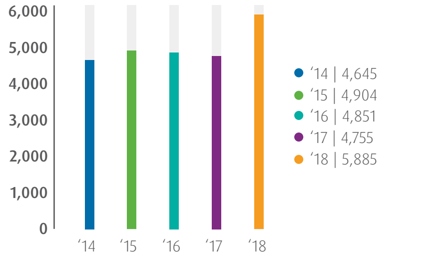
(1) Umicore Group data includes the data for Corporate Headquarters in Brussels, Belgium.

E5 WATER USE

GROUP DATA

WATER USE

thousand m³



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 from 4,755 thousand m^3 in 2017 to 5,885 thousand m^3 in 2018, an increase of 24%. The increase in water use is due to a combination of a new waste water treatment plant at a major site, new sites and new capacity being added and increase in production, mostly in Energy & Surface Technologies.

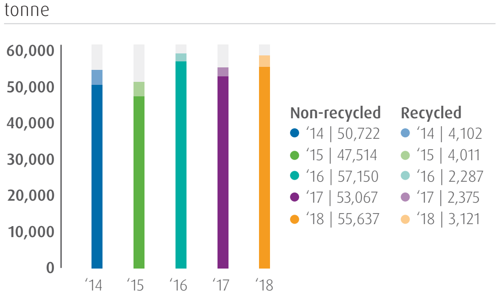
BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	UMICORE GROUP
Water use	thousand m^3	512	3,640	1,733	**5,885**

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 based on the local regulation for the region where the reporting entity is located.

In 2018, a total of 78,777 tonnes of waste were generated compared to 72,815 tonnes in 2017, an increase of 8%.

The total volume of hazardous waste increased from 55,442 tonnes in 2017 to 58,758 tonnes in 2018, an increase of 6%. The recycling rate of hazardous waste has remained at similar levels with 5% in 2018 compared to 4% in 2017.

The total volume of non-hazardous waste increased from 17,373 tonnes in 2017 to 20,018 tonnes in 2018, an increase of 15%.

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	UMICORE GROUP
Total waste produced	**tonne**	**8,182**	**28,591**	**42,004**	**78,777**
Hazardous waste	tonne	5,456	18,006	32,296	**58,758**
of which recycled	%	18.71	3.99	3.92	**5.31**
Non-hazardous waste	tonne	2,726	10,584	6,708	**20,018**
of which recycled	%	50.27	45.40	93.72	**62.25**

E7 HISTORICAL POLLUTION

The history of Umicore goes back more than 200 years. It all started with the merger of a number of mining and smelting companies, which gradually evolved into the materials technology and recycling company Umicore is today. In the mid-1990s, Umicore started a process of divesting its remaining mining rights as part of its strategic reorientation towards added-value materials and recycling.

Umicore's predecessor companies operated within the boundaries of national mining legislation and in compliance with the environmental standards valid at the time these mines were operational. The closure of the mines and the restitution of mining concessions to the relevant state authorities has consistently been carried out in collaboration with the competent authorities and local stakeholders. This process takes into consideration the specific circumstances of each site. Regarding the downstream industrial smelting and refining installations, remediation projects are developed in close consultation with other stakeholders to reduce any risks to an acceptable level as defined by the authorities.

Active participation in the management and remediation of risks that have resulted from historical operations is an integral part of the Umicore Way. Umicore's proactive program for assessing and remediating, where necessary, soil and groundwater contamination has made significant progress. The following section illustrates the main ongoing programs and the progress made during 2018.

BELGIUM

The mining sites in Belgium laid the foundation of our oldest predecessor company, Vieille Montagne. The mining concession of the same name was granted by Emperor Napoleon Bonaparte in 1805 and 5 more concessions were added over time, all located in eastern Wallonia. The mining activities in Belgium ceased in the 1950s and extensive rehabilitation work to secure the site was carried out at all concessions in close consultation with the competent authorities. One concession was officially transferred back to the Government, while the transfer of the others is currently being processed.

In addition, over a century of non-ferrous metals production in Hoboken, Olen, Balen and Overpelt impacted soil and groundwater on the industrial sites and on neighbouring lands. In November 1997, Umicore concluded a voluntary agreement with the Flemish Region of Belgium to deal with this historical contamination. On 23 April 2004, Umicore signed an addendum to the 1997 Covenant with the regional waste authorities (OVAM) and the Regional Minister of the Environment in the Flemish Region of Belgium, in which Umicore committed to spend € 62 million over 15 years for historical pollution remediation on four sites, two of which – Balen and Overpelt – now belong to Nyrstar, a business that was divested by Umicore in 2007. In addition, OVAM and Umicore joined forces to remediate historic pollution in the additional areas surrounding the industrial sites, defined as a 9km perimeter, over 10 years. Both parties contributed €15 million to a new fund for the remediation work. In 2014, OVAM and Umicore agreed to extend the program an additional 5 years. The agreement also contains an important clause through which Umicore and the authorities will tackle remediation of the Bocholt site, a former arsenic plant that was shut down and dismantled in the early 1970s. In 2018, preparatory works to better define the extent and the risk of the contamination have started. Awaiting remedial works, groundwater use restrictions have been put in place.

In Hoboken, what began as a lead and silver refining operation in 1887 grew to a large industrial plant extracting precious metals from waste. Over the years, Umicore has replaced heavily contaminated topsoil and remediated the historical contamination in the adjacent residential area. In 2017, an agreement was reached with the local authorities to extend the on-site storage facility, so that on-site topsoil remediation work can restart. A new groundwater remediation system is planned for 2019.

In Olen, the pollution in and around the site is the result of historical production activities mainly of copper and cobalt. As soon as the Covenant was signed, the remediation work on the Olen site began. An on-site groundwater remediation program started in 2007 is ongoing. In 2018, contaminated soil and buried waste were further excavated at various locations where infrastructure work was needed, such as the construction of the new warehouse.

Between 1922 and 1980, radium and uranium were also produced in Olen. The radium produced for cancer treatment purposes at this site was offered to Nobel laureate Marie Curie for her first experiments with radioactive material. The radium production plant was demolished during the 1970s and the radium production waste was confined to an aboveground storage facility, as was the norm at the time. Since no dedicated legislation for final disposal is in place, Umicore is carrying out safety and monitoring works to guarantee that no risks are emanating from those remnants for neither the workers on site, nor the surrounding population.

FRANCE

Umicore's predecessor companies operated mines in France from the mid-1800s. The last remaining mining activities were terminated in the late 1960s to early 1970s, and extensive rehabilitation works were carried out at the former mining sites, all located in the south of France, during the 1990s. All former mining concessions in France have been returned to the French government, the last being confirmed by ministerial decree in 2005.

Mining activity in Saint-Félix-de-Pallières began in the 19th century to exploit a subsoil rich in zinc and zinc-derived metals. The former mining concession was closed in 1971 and was secured in full compliance with the applicable legislation. The concession was waived in 2004 after the French authorities acknowledged that all the measures prescribed had been complied with. Despite ending its mining activity, Umicore never left the area and regularly monitors the state of a landfill containing flotation residues and which is still Umicore's property. To guarantee safe and stable conditions of the landfill on a long-term basis, Umicore will start extensive maintenance work. In recent years, more attention has been focused by certain stakeholder groups on the potential health effects linked to the former mining activities. Despite having complied with all the requirements of the administration at the time of the termination of the mining activities, Umicore offered to support the authorities in addressing the concerns of the local population on a voluntary basis.

In Viviez, the pollution in and around the site is the result of historical production activities of zinc products started in 1855. Umicore invested € 40 million in completing a large-scale decontamination program from 2011 to the end of 2016 and has transferred the obligations after decontamination to a third party. Although soil contamination has many sources, Umicore, together with other partners, joined a voluntary program in 2017 to address the soil contamination identified in the private gardens around the Viviez site. Data collection was performed in 2017 and 2018 and appropriate measures are being defined by a dedicated expert panel, under the control of the competent authorities.

USA

In 1980, one of Umicore's predecessor companies acquired an abandoned silver-gold mine at Platoro in the Rocky Mountains in Colorado. Subsequent exploration drillings were unsuccessful and any attempt to further exploit the mine were stopped.

Remedial work started in the 1990s, consisting of capping and landscaping waste rock piles and installing a water treatment plant to capture and treat the acid mine drainage that continuously flows out of the mine. The mining site is in a nature recreation area. Umicore continues to manage the site and treat drainage water to meet the stringent environmental requirements. Umicore built a new modern waste water treatment facility in 2018 to further decrease the metal concentration in the discharge and decrease the volume of solid waste produced.

From 1980 to 2010, Umicore operated a cobalt-producing facility in Maxton, North Carolina. After the closing and the demolition of the Maxton plant, soil and groundwater contamination was identified. Umicore entered a voluntary decontamination program with the authorities to fully address the issue by 2033. In 2017, a significant portion of the soil contamination was addressed by stabilizing the metals and thus preventing them from leaching into the groundwater. Following this action, the focus is now on the decontamination of the groundwater to prevent the contamination from spreading to the neighbouring area.

BRAZIL

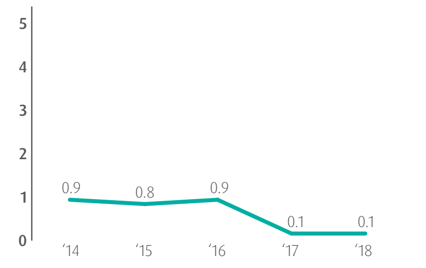
Umicore acquired industrial units in the cities of Americana (SP), Guarulhos (SP) and Manaus (AM) in Brazil in 2003. During an environmental assessment that was performed following the acquisition, groundwater pollution was detected at the Guarulhos site. This historical pollution dates from before Umicore's purchase of the operations. Umicore took immediate measures to stop the spreading of this contamination to the neighboring areas by installing a hydraulic barrier that has been in full operation since 2011. Targeted extraction systems were put in place on site to speed up the remediation. Umicore is continuing to consider more cost-effective remedial systems, such as in-situ applications.

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 multiplied by the number of parameters per measurement.

In 2018, some 48,000 environmental measurements were carried out at all of Umicore's industrial sites compared to some 55,000 the year before.

The number of measurements that did not meet the regulatory or permit requirements is very low at 0.14% for the Group, compared to 0.10% in 2017.

Of the 54 consolidated industrial sites, 49 have put in place an environmental management system certified against ISO 14001. The remaining 5 sites are acquisitions and new sites that joined Umicore reporting between 2014-18, and all 5 sites are planning the implementation of an environmental management system during 2019. All major sites with significant environmental impacts are certified against the ISO 14001 management system.

In total, 29 environmental complaints were received in 2018, most of which were related to noise and odor. 12 of the complaints are ongoing.

SOCIAL STATEMENTS

SOCIAL KEY FIGURES

	UNIT	NOTES	2014	2015	2016	2017	2018
Workforce (fully consolidated companies)	N°	S2	10,368	10,429	9,921	9,769	**10,420**
Temporary contracts	% of workforce	S2	3.62	3.91	3.45	3.86	**3.13**
Women amongst all employees	% of workforce	S2	21.68	21.72	21.6	21.92	**21.30**
Women amongst all managers	% of workforce	S2	21.25	22.18	22.11	22.37	**22.98**
Women amongst senior management	% of workforce	S2	8.33	9.49	9.09	6.77	**9.70**
Women in "business operations" management functions	%	S2	–	–	14.27	15.55	**15.08**
Non-European representation in senior management functions	%	S2	–	–	16.67	18.05	**17.91**
Average training hours per employee	hours/ employee	S3	45.59	45.06	41.49	45.33	**43.10**
Employees having a yearly appraisal	% of workforce	S3	95.82	95.97	96.03	98.29	**96.15**
Voluntary leavers – ratio	% of workforce	S3	3.42	3.35	4.10	5.03	**7.18**
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	S4	71.44	71.11	69.41	65.41	**64.49**
Exposure ratio "all biomarkers aggregated" (1)	%	S6	1.8	2.3	3.2	2.7	**2.8**
Number of occupational linked diseases	N°	S6	21	12	12	11	**12**
People with platinum sensitisation	N°	S6	4	0	1	1	**3**
Fatal accidents	N°	S7	2	0	1	0	**0**
Fatal accidents for sub-contractors	N°	S7	0	0	0	0	**1**
Lost Time Accidents (LTA)	N°	S7	37	47	59	51	**61**
Lost Time Accidents (LTA) for sub-contractors	N°	S7	11	9	15	22	**21**
LTA frequency rate	LTA/million hours worked	S7	2.16	2.66	3.34	3.01	**3.36**
LTA severity rate	lost days/ thousand hours worked	S7	0.94	0.12	0.56	0.09	**0.10**

(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, 89 consolidated sites are included in the HR related notes of the social reporting (S2 to S5).

This is 3 fewer than in 2017 due to the Thin Film Products Providence site closure and the divestment of Technical Materials in Europe, the Vicenza and Jordbro sites were sold. Furthermore, the divestment of Technical Materials in Europe also impacted the headcount at the Hanau site but it did not involve a site closure.

The sites report full year data for the social indicators. The indicators presented are based on data from fully consolidated companies unless indicated otherwise.

Workforce and other indicators for the divested sites of Technical Materials in Europe are not included.

The historical numbers (2017 and before) were not restated.

S2 WORKFORCE

GROUP DATA

	UNIT	2014	2015	2016	2017	2018
Workforce (fully consolidated companies)	N°	10,368	10,429	9,921	9,769	**10,420**
Workforce from associated companies	N°	3,706	3,301	3,196	3,360	**3,180**
Employees men	N°	8,120	8,164	7,778	7,628	**8,201**
Employees women	N°	2,248	2,265	2,143	2,141	**2,219**
Full-time equivalent	N°	–	–	9,716	9,574	**10,224**
Employees < 30 years	N°	–	–	1,620	1,697	**1,980**
Employees between 30 and 50 years	N°	–	–	5,605	5,504	**5,939**
Employees > 50 years	N°	–	–	2,696	2,568	**2,501**
Temporary contracts	% of workforce	3.62	3.91	3.45	3.86	**3.13**
Women amongst all employees	% of workforce	21.68	21.72	21.60	21.92	**21.30**
Women amongst all managers	% of workforce	21.25	22.18	22.11	22.37	**22.98**
Women amongst senior management	% of workforce	8.33	9.49	9.09	6.77	**9.70**
Women in "business operations" management functions	%	–	–	14.27	15.55	**15.08**
Non-European representation in senior management functions	%	–	–	16.67	18.05	**17.91**

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.

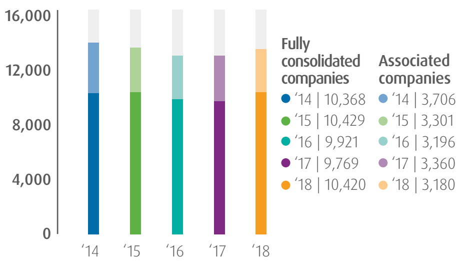
Temporary contract: Umicore employees with a temporary contract, included in the workforce of fully consolidated companies.

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.

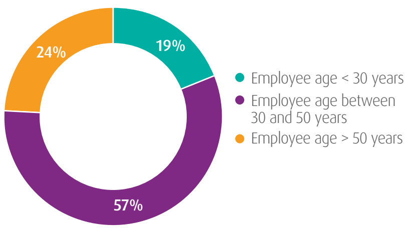
This applies to all hourly paid, monthly paid, managers and interns on Umicore's payroll at the end of the reported semester including part-time and temporary employees but excludes employees with a dormant contract (career interruption, maternity leave, parental leave, etc.), employees on long-term illness (country specific length of continuous absence) and early retirees.

TOTAL WORKFORCE

Nº

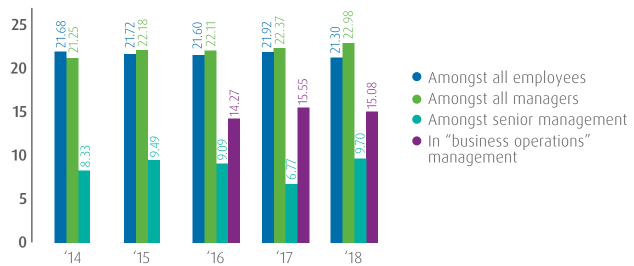


WORKFORCE – AGE SPLIT



WOMEN REPRESENTATION

%



TOTAL WORKFORCE

The total workforce increased by 471 employees to a total of 13,600. For the fully consolidated companies, the workforce increased by 651 people to 10,420, mainly due to growth in the following countries: China, South Korea, Belgium and Poland in the Business Groups Catalysis, Energy & Surface Technologies and Corporate.

Amongst the associated companies there was a decrease of 180 employees primarily due to the transfer of production equipment, related activities and personnel from Jiangmen JCU to Umicore and reductions in personnel at a few sites in Germany and South Africa in Element Six.

The FTE of 10,224 (consolidated) comes very close to the reported headcount of 10,420, 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 3.13% in 2018.

GENDER SPLIT

The percentage of women was 21.30% 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 5 years. Women are more represented in administrative and commercial functions, compared to functions in the industrial operations.

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 22.98% in 2018. The percentage of women in senior management increased to 9.70%, a good gain from 6.77% in 2017. We have set the ambition to reach 15% of women in senior management functions by 2020.

WOMEN IN "BUSINESS OPERATIONS" MANAGEMENT FUNCTIONS

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 2018, the percentage of women within this management group employed in business operations functions decreased slightly to 15.08% compared to 15.55% in 2017. While there was an increase of the number of women in these "business operations" functions, with the growth of the Company the spread of the male counterpart grew more in these functions.

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 2018, this percentage decreased to 17.91%, a slight decrease from 2017 at 18.05% but a remained gainful increase from 16.67% in 2016.

REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Total workforce	N°	6,776	855	1,156	3,805	1,008	**13,600**
Workforce (fully consolidated companies)	N°	5,723	838	678	2,922	259	**10,420**
Workforce from associated companies	N°	1,053	17	478	883	749	**3,180**
Employees men	N°	4,563	652	502	2,325	159	**8,201**
Employees women	N°	1,160	186	176	597	100	**2,219**
Full-time equivalent	N°	5,531.84	834.60	678.00	2,920.60	259.00	**10,224.04**
Temporary contracts	% of workforce	3.83	0.84	1.18	3.15	0.00	**3.13**

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE	UMICORE GROUP
Total workforce	N°	3,070	4,229	2,832	3,469	**13,600**
Workforce (fully consolidated companies)	N°	3,070	3,447	2,832	1,071	**10,420**
Workforce from associated companies	N°	0	782	0	2,398	**3,180**
Employees men	N°	2,433	2,777	2,362	629	**8,201**
Employees women	N°	637	670	470	442	**2,219**
Full-time equivalent	N°	3,057.32	3,427.85	2,779.03	959.84	**10,224.04**
Temporary contracts	% of workforce	5.11	2.67	2.33	1.03	**3.13**

GENERAL OVERVIEW OF SITES AND EMPLOYEES

	PRODUCTION SITES	R&D | TECHNICAL CENTRES	OTHER SITES	EMPLOYEES
Europe				
Austria	1			144
Belgium	3	1	1	3,102
Denmark	1	1		112
France	3		2	254
Germany	5 (1)	2	1	1,730 (306)
Ireland	(1)			(563)
Italy			2	32
Liechtenstein	1	1		80
Luxembourg			1	9
Netherlands			1	10
Poland	1		1	150
Portugal			1	6
Russia			1	7
Spain			1	4
Sweden	1		(1)	36 (4)
Switzerland			1	2
United Kingdom	1	(1)	3 (1)	45 (180)
Asia-Pacific				
Australia			1	8
China	5 (3)	1	5 (1)	1,351 (871)
India	1		1	80
Japan	2	3	2 (1)	172 (8)
Philippines	1			83
South Korea	3	2	2	1,024
Taiwan			2	22
Thailand	2		1	182
United Arab Emirates			(1)	(4)
North America				
Canada	3			238
Mexico			1	5
United States	8	2	3 (1)	595 (17)
South America				
Argentina	1			61
Brazil	4	1		617
Peru	(1)			(478)
Africa				
South Africa	1 (1)		1	259 (749)
Total	**48 (7)**	**14 (1)**	**35 (6)**	**10,420 (3,180)**

Figures in brackets denotes "of which associates and joint venture companies". Where a site has both production facilities and offices (eg Hanau, Germany), it is classified as a production site only. Some of our production sites and R&D/technical centers are located on the same site but are counted separately.

S3 PEOPLE ENGAGEMENT

GROUP DATA

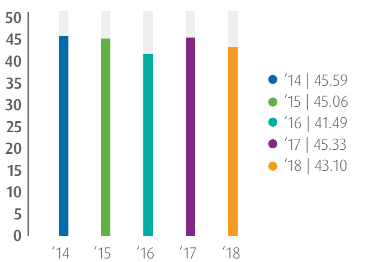
	UNIT	2014	2015	2016	2017	2018
Employees having a yearly appraisal	% of workforce	95.82	95.97	96.03	98.39	**96.15**
Average number of training hours per employee	hours/ employee	45.59	45.06	41.49	45.33	**43.10**
Average number of training hours per employee – Men	hours/ employee	48.09	45.32	42.38	46.53	**44.68**
Average number of training hours per employee – Women	hours/ employee	39.76	47.39	38.28	41.01	**37.29**
Average number of training hours per employee – Managers	hours/ employee	37.18	34.24	41.03	38.54	**37.59**
Average number of training hours per employee – Other employee categories	hours/ employee	46.29	46.09	41.52	46.44	**42.94**
Voluntary leavers ratio	% of workforce	3.42	3.35	4.10	5.03	**7.18**
Voluntary leavers men	N°	273	280	309	404	**619**
Voluntary leavers women	N°	80	69	97	70	**110**

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.

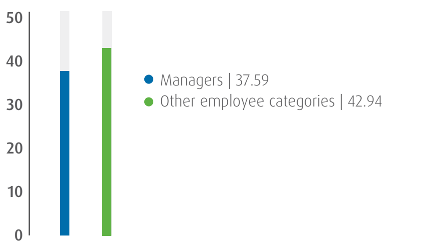
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE

Hours/employee



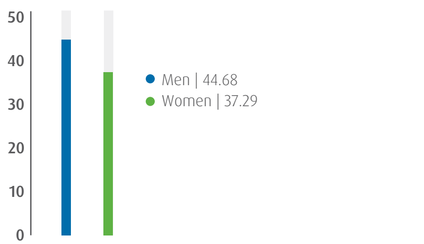
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE CATEGORY

Hours/employee



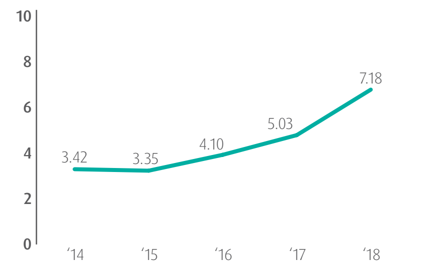
AVERAGE NUMBER OF TRAINING HOURS PER EMPLOYEE – GENDER SPLIT

Hours/employee



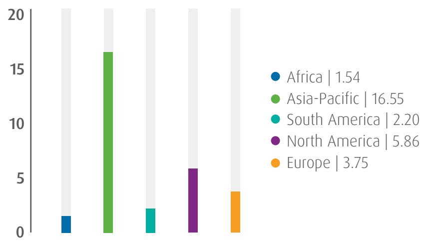
VOLUNTARY LEAVERS RATIO

%



VOLUNTARY LEAVERS RATIO, BY REGION

% of workforce



REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Average number of training hours per employee	hours/ employee	39.81	40.25	57.05	48.17	34.36	**43.10**
Employees having a yearly appraisal	% of workforce	98.32	92.72	100.00	91.75	98.84	**96.15**
Voluntary leavers ratio	% of workforce	3.75	5.86	2.20	16.55	1.54	**7.18**

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE	UMICORE GROUP
Average number of training hours per employee	hours/ employee	40.06	49.07	41.79	37.19	**43.10**
Employees having a yearly appraisal	% of workforce	91.89	95.97	99.86	99.16	**96.15**
Voluntary leavers ratio	% of workforce	5.68	13.21	3.45	3.16	**7.18**

TRAINING HOURS

In 2018, the average training hours per employee decreased to 43.10 hours from the previous year. The training hours for "on the job learning" are not consistently captured or registered in all sites.

Data shows that managers training hours (37.59 hours) are lower than for other employees (42.94 hours).

YEARLY APPRAISAL

In 2018, almost all employees (96.15%) from fully consolidated companies have an appraisal interview to discuss their development at least once a year.

VOLUNTARY LEAVERS

The last three years the percentage of voluntary leavers has been increasing and in 2018, reached 7.18%. As was the case in previous 2 years, significant regional differences can be observed with Asia Pacific reporting the highest turnover rate (16.55%) and South America (2.20%) and Africa (1.54%) 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. We also observe a trend that about 39% of the global voluntary leavers left the Company during the first 6 months of employment, primarily from the large sites in Asia Pacific, sites that have had a significant growth.

VOLUNTARY LEAVERS – GENDER

15.09% of the voluntary leavers are women, which is lower than the 22.98% presence of women in the workforce of fully consolidated companies.

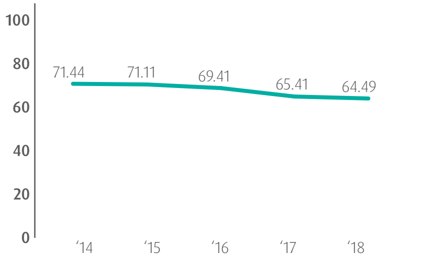
S4 EMPLOYEE RELATIONS

GROUP DATA

	UNIT	2014	2015	2016	2017	2018
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	71.44	71.11	69.41	65.41	**64.49**

EMPLOYEES REPRESENTED BY UNION OR COLLECTIVE LABOUR AGREEMENT (CLA)

% of workforce



REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	84.15	8.59	92.63	38.26	33.20	**64.49**

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE	UMICORE GROUP
Employees represented by union or Collective Labour Agreement (CLA)	% of workforce	47.88	56.28	87.43	77.87	**64.49**

UNION AND COLLECTIVE LABOR AGREEMENT

In total, 64.49% of Umicore employees belong to a trade union organization and/or the level of their wages are negotiated through a collective bargaining agreement. On a regional basis, there are significant differences in union representation, with the highest representation in South America and Europe and the lowest in North America.

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 labor and forced labor, recognizing the right to its employees to organize 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 organized for the first time a systematic Group-wide internal reporting on Code of Conduct issues. In 2018 a total of 20 cases were reported, involving a total of 28 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 2017, data of 3 sites are not reported anymore: Amsterdam (Netherlands, Jewelry and Industrial Metals), Providence (USA, Thin Film Products) and Vicenza (Italy, Technical Materials). 8 sites were added to the reporting scope: Bayport (USA, Automotive Catalyst), Frederikssund and Lyngby (Denmark, Automotive Catalyst), Joinville (Brazil, Automotive Catalyst), Songdo and Onsan (South-Korea, Automotive Catalyst), Tianjin (China, Automotive Catalyst) and Grenoble (France, Cobalt and Specialty Materials). This brings the total number of reporting sites to 55.

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 approach to occupational health can be found in the corresponding section of Management Approach, p.72.

GROUP DATA

	UNIT	2014	2015	2016	2017	2018
Exposure ratio "all biomarkers aggregated" (1)	%	1.8	2.3	3.2	2.7	**2.8**
Exposure ratio lead (blood) (2)	%	1.0	0.8	0.5	0.5	**2.0**
Exposure ratio arsenic (urine) (2)	%	1.1	1.3	2.0	1.0	**1.2**
Exposure ratio cobalt (urine) (2)	%	7.3	8.7	9.0	6.0	**5.0**
Exposure ratio cadmium (urine) (2)	%	0.6	1.1	1.4	0.7	**0.5**
Exposure ratio nickel (urine) (2)	%	0.3	1.3	2.0	1.4	**2.6**
Exposure ratio indium (blood) (2)	%	-	-	11.3	14.2	**2.8**
People with platinum salts sensitisation	N°	4	0	1	1	**3**
People with noise induced hearing loss	N°	5	2	4	0	**0**
People with contact dermatitis	N°	2	3	0	2	**3**
People with occupational asthma other than Pt-salts	N°	0	1	0	0	**0**
People with musculoskeletal ailments	N°	14	7	7	8	**6**

(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 based upon recent peer reviewed scientific data and regularly re-evaluated in the context of new evidence.

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 micrograms per gram of creatinine in urine.

— **Lead:** 30 micrograms per 100 ml of blood.

— **Cobalt:** 15 micrograms per gram of creatinine.

— **Indium:** 1 microgram per liter of plasma.

— **Arsenic and nickel:** 30 micrograms per gram of creatinine.

— **Platinum salts:** no new cases of platinum salt sensitization.

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 2018, a total of 6,939 biological sampling procedures took place from employees with an occupational exposure to at least one of the metals mentioned above (platinum salts excluded). 195 readings showed a result in excess of the internal target value. This brings the total excess rate to 2.8%, comparable to the 2.7% excess rate in 2017. All occupationally exposed employees are regularly monitored by an occupational health physician.

LEAD

Occupational lead exposure represents a potential health risk mainly in the business group Recycling. In total, 26 of the 1,315 occupationally exposed employees exceeded the target value of 30µg/100ml, bringing the excess rate for lead exposure to 2.0% compared to 0.5% in 2017.

The majority of the excess readings were in the lead refinery at the Hoboken site (Belgium, Precious Metal Recycling). The increase is explained by the high number of new employees resulting in a poor compliance with local personal protective equipment policies. training programs have been implemented to reduce the lead exposure. In addition, the site continued to improve its ventilation systems.

ARSENIC

Occupational exposure to arsenic is possible in the business groups Energy & Surface Technologies and Recycling. In total, 11 employees or 1.2% of the 951 occupationally exposed had an excess reading during 2018 compared to 1.0% in 2017.

All workers occupationally exposed to arsenic are submitted to a medical surveillance program to closely follow-up their health condition.

COBALT

In total, 1,834 employees are occupationally exposed to cobalt, mainly in the business group Energy & Surface Technologies. The number of employees exceeding the target value was 92, resulting in an excess rate of 5.0%, down from 6.0% in 2017.

In the business unit Rechargeable Battery Materials, the number of exposed people rose by more than 127%. Despite this, we noticed a significant decrease in excess readings in this business unit from 3.6% in 2017, down to 2.6 in 2018.

The excess readings in the business unit Cobalt & Specialty Materials increased from 11.1% in 2017 to 12.7% in 2018.

During the past year, the sites in Cheonan (Korea, Rechargeable Battery Materials) and Jiangmen (China, Rechargeable Battery Materials) developed a comprehensive dust abatement program as part of their operational excellence approach. This 'zero dust' program focuses on equipment improvements and workers behavior. Concrete actions include awareness programs, regular industrial hygiene campaigns, excellent housekeeping and improved maintenance of critical equipment.

The higher number of excess readings in the business units Cobalt & Specialty Materials was mainly caused by increased exposures at the sites in Olen (Belgium, Energy & Surface Technologies), Fort Saskatchewan (Canada, Energy & Surface Technologies) and Grenoble (France, Energy & Surface Technologies). The business unit is developing an action plan focusing on technical improvements, housekeeping and personal behavior of workers to again decrease the exposures. Regular workshops are organized to evaluate progress and share ideas and experiences.

For workers exposed to cobalt, both business units Cobalt & Specialty Materials and Rechargeable Battery Materials have implemented Umicore's occupational health guidance for cobalt, including biological monitoring and medical 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 2018, a total of 433 employees had an occupational exposure to cadmium.

Only 2 employees recorded a cadmium in urine reading in excess of the target value, compared to 3 in 2017. This resulted in an excess rate of 0.5% compared to 0.7%% in 2017.

NICKEL

The business groups Energy & Surface Technologies and Recycling have occupational exposure to nickel. In 2018, a total of 2,157 employees were exposed to nickel, an increase of about 50% compared to 2017. In 2018, 57 of the exposed workers exceeded the target level resulting in an excess level of 2.6%, compared to 1.4% in 2017.

In the business unit Rechargeable Battery Materials, we noticed an increase in excess readings from 0.7% in 2017 to 2.2% in 2018 mainly related to an increased exposure at the site in Jiangmen (China, Energy & Surface Materials). The measures to reduce cobalt exposure (see above) obviously also apply to nickel.

The excess readings in the business unit Cobalt & Specialty Materials rose from 6.7% in 2017 to 11.1% in 2018 are due to a higher number of excess readings at the sites in Wickliffe (USA, Energy & Surface Technologies) and Subic (Philippines, Energy & Surface Technologies). These sites are further implementing their dust management programs including ventilation systems improvements and personal protective equipment programs.

For workers exposed to nickel, both business units Cobalt & Specialty Materials and Rechargeable Battery Materials have implemented Umicore's occupational health guidance for nickel, including biological monitoring and medical surveillance.

INDIUM

Peer reviewed literature clearly demonstrates that occupational exposure to indium and indium tin oxide may result in health effects mainly at the level of the respiratory tract. Umicore contributed to this improved scientific knowledge through its collaboration with the National Institute of Occupational Safety and Health (NIOSH, USA) who conducted a health hazard assessment program (2012-2016) at the site in Providence (USA, Energy & Surface

Technologies). Based upon these scientific data, Umicore defined a target level for indium in plasma of 1 microgram per liter of plasma. Indium in plasma is a biomarker of lifetime exposure.

In 2018, 249 employees were exposed to indium compared to 324 in 2017. This decrease is explained by the discontinuation of activities at the site in Providence (USA, Energy & Surface Technologies). As a result, the excess rate dropped from 14.8% in 2017 to 2.8% in 2018. The excess readings for indium in plasma are reported mainly at the site in Balzers (Liechtenstein, Energy & Surface Technologies). Following these results, the working conditions at the bonding workplaces have been improved and an extensive medical surveillance program has been initiated.

PLATINUM SALTS

The business groups Catalysis and Recycling have workplaces with exposure to platinum salts.

In 2018, we had 3 newly diagnosed employee with a platinum salt sensitization, 2 at the site in Hoboken (Belgium, Recycling) and one at the site in Hanau (Germany, Catalysis). All workers exposed to platinum salts are monitored through an occupational health program following a Umicore health guideline and regularly checked for platinum salt sensitization.

OTHER OCCUPATIONAL RELATED DISEASES

In 2018, 3 employees were diagnosed with an occupationally induced contact dermatitis and 6 developed a musculoskeletal disorder due to their occupation. All people concerned are followed by an occupational health physician.

In 2018, the medical departments of the Umicore sites in Belgium together with the human resources organization continued a program to raise awareness and lift the taboo on burn-out. Over the past years, Umicore has been confronted with several burn-out cases which led to long-term sickness periods with impact on both the individual and the organization. The program consists of primary prevention of burn-out combined with early recognition of symptoms and case management support. Concrete actions included awareness campaigns via leaflets, and well attended workshops and training for supervisors. Similar programs have been implemented at Umicore sites in other countries such as Germany.

S7 OCCUPATIONAL SAFETY

In total for 2018, 90 consolidated sites, of which 57 are industrial sites, are included in the safety reporting. This number also includes commercial offices.

Additional information on Umicore's approach to safety can be found in the corresponding section of Management Approach, p. 72.

The Umicore information in this note only relates to Umicore's employees. Data on subcontractors' occupational safety are reported separately. It is Umicore's objective to have zero lost time accidents by 2020.

GROUP DATA

	UNIT	2014	2015	2016	2017	2018
Fatal accidents	N°	2	0	1	0	**0**
Fatal accidents sub-contractors	N°	0	0	0	0	**1**
Lost Time Accidents (LTA)	N°	37	47	59	51	**61**
Lost Time Accidents (LTA) sub-contractors	N°	11	9	15	22	**21**
LTA frequency rate		2.16	2.66	3.34	3.01	**3.36**
Calendar days lost	N°	16,122	2,134	9,848	1,590	**1,830**
LTA severity rate		0.94	0.12	0.56	0.09	**0.10**
Recordable Injuries (RI)	N°	112	148	127	138	**158**
Recordable Injuries frequency rate		6.53	8.38	6.78	8.15	**8.70**
Ratio N° of sites with no LTA/total N° of sites reporting	%	84	84	84	84	**84**
Sites OHSAS 18001 certified	%	40.0	36.6	41.7	51.0	**51.9**

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.

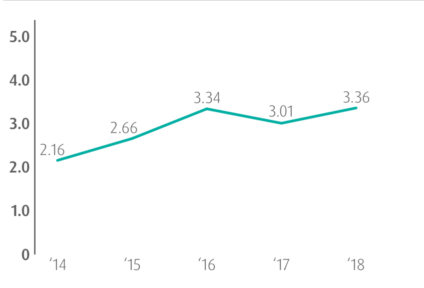
Lost time accident (LTA): a work-related injury resulting in more than one shift being lost from work.

Recordable injury (RI): a work-related injury resulting in more than one first aid treatment or in a modified working program but excluding lost time accidents.

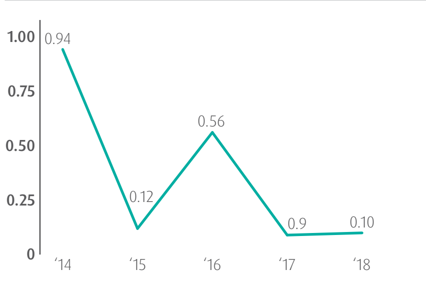
Frequency rate: number of lost time accidents per million hours worked.

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



REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Lost Time Accidents (LTA)	N°	53	1	0	7	0	**61**

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE	UMICORE GROUP
Fatal accidents	N°	0	0	0	0	**0**
Lost Time Accidents (LTA)	N°	10	8	41	2	**61**
Calendar days lost	N°	340	368	983	139	**1,830**

In 2018, a total number of 61 lost time accidents was recorded, compared to 51 in 2017. This resulted in a frequency rate of 3.36, up from 3.01 in 2017, and in a severity rate of 0.10. The number of reported recordable injuries increased from 138 in 2017 to 158 in 2018. The recordable injury frequency rate for 2017 was 8.70 compared to 8.15 in 2017. A total of 21 lost time accidents was registered for contractors compared to 22 in 2017.

An accident at the site in Arab (USA, Energy & Surface Materials) cost the life of one contractor worker. The accident was due to an unexpected accumulation of hydrogen in a former storage tank on which the contractor worker was carrying out hot repair work.

During 2018, 84% of the reporting sites that were operational throughout the year operated without a lost time accident, the same percentage as in 2017. 52% of the sites were certified using the occupational health and safety management system OHSAS 18001, compared to 51% in 2017.

53 lost time accidents, or 86% of the total number of lost time accidents, occurred in Europe. Of these, 41 lost time accidents occurred on Belgian sites and 10 on German sites. The Asia-Pacific sites accounted for 7 accidents while no accidents occurred in the Americas.

In 2018, the business group **Catalysis** recorded 10 lost time accidents compared to 4 in 2017. Besides continued technical improvements, the business unit Automotive Catalysts continues the SafeStart® behavioural safety program in all its operating sites. In addition, some sites have implemented a risk behaviour training program for supervisors and operators. All Automotive Catalysts production plants are required to be certified against the OHSAS 18001 management system. At year-end, the sites in Port Elizabeth (South Africa), Tsukuba and Himeji (Japan) had operated over 5 years without a lost time accident or recordable injury to Umicore staff and no lost time accident to contractors on site. The site in Rayong (Thailand) recorded more than 3 years (including the site construction) 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 8 lost time accidents compared to 12 in 2017. The business units continue their actions to reinforce their safety leadership programs based on a behavior observation and risk intervention techniques. The site in Dundee (UK) has been recognized for its excellent and sustained safety performance, recording over 10 years with no lost time accident or recordable injury to Umicore staff and no lost time accident to contractors. Beijing (China), Balzers (Liechtenstein) and Tsukuba (Japan) operated more than 5 years with no lost time accident or recordable injury to Umicore staff and no lost time accidents to contractors.

The business group **Recycling** had 41 lost time accidents. The business unit Precious Metal Refining recorded a disappointing safety performance with 35 lost time accidents. To reverse the poor safety performance, the site management has launched the "Safety@ Precious Metals Refining" campaign. Main pillars consist of passion for safety, caring for each other and teamwork. The aim is to develop and maintain a safety culture where everybody spontaneously cares for his or her safety as well as their colleague's safety. The campaign is supported by practical actions in which all employees participate.

Two lost time accidents occurred in general services and corporate offices including Group Research & Development.

S8 PROCESS SAFETY

In 2018, the Umicore Group process safety activities have been focused on executing process risk assessment studies to ensure that all our processes are operated in the acceptable risk zone. At year end, more than 50% of the production processes have received specific process hazard and risk assessment compliant to Umicore standards. Moreover, a detailed timeline has been defined for completion of the remaining studies in the coming years, giving priority to the processes with high risk profiles.

To ensure sufficient quality of the process risk assessment studies, experts conduct detailed technical process risk assessment reviews of processes with major risk scenarios. These reviews are in addition to the Group environment, health and safety audit program evaluating the sites' compliance of the process safety management system.

An internal HAZOP leader training has increased process safety knowledge throughout the Company.

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.

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 decentralized approach to risk and opportunity management. We have determined to seek a competitive edge in terms of our access to critical raw materials and in our ability to secure these raw materials in an ethical and sustainable way.

SCOPE

The indicator presented covers all activities that were still part of Umicore on 31 December 2018.

The reporting is done according to the business units reported in Group structure on page 3.

IDENTIFICATION OF THE CRITICAL RAW MATERIALS

In 2016, each business unit was asked to follow a 3-step process to identify the raw materials that are critical in achieving the Horizon 2020 objectives.

The process consisted of 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.

21 supply criteria, covering various aspects of sustainability, have been offered to the business units as input for 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

As supply risks and opportunities can change the identification of the critical raw materials is a dynamic process. In 2018 all business units have updated their mapping.

MITIGATION ACTIONS

It is particularly important to define actions to mitigate the risk of critical materials supply disruption.

Mitigation actions can vary depending on the materials and the position of the business unit in the market. Action plans and dedicated mitigation measures must be in line with the identified risks and opportunities and are therefore regularly updated. The reviewing frequency and process vary from business unit to business unit depending on the specific supply conditions.

Umicore uses cobalt in materials that go into rechargeable batteries, tools, catalysts and several other applications. The approach on cobalt sourcing further evolved in 2018.

The Sustainable Procurement Framework for Cobalt covers Umicore's cobalt purchases worldwide. The Framework is aligned with the OECD Due Diligence Guidance for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas. Umicore obtained, for the fourth year in a row, third party assurance from PwC that its cobalt purchases in 2018 are carried out in line with the conditions set out in the framework. The share of cobalt from recycled origin was also reviewed by PwC as part of the assurance process and was 6.1% for 2018. The figure is reported in the compliance report.

The compliance report for 2018 can be found here: https://www.umicore.com/en/cases/sustainable-procurement-framework-for-cobalt/compliance-report.

Umicore supported the development of the Cobalt Industry Responsible Assessment Framework (CIRAF) within the Cobalt Institute. The CIRAF is a management framework for risk assessment and mitigation aiming at ensuring responsible cobalt production and sourcing.

Within the World Economic Forum's "Global Battery Alliance", Umicore took a leading role in the circular economy working group that focused in 2018 on the analysis of the gaps to close the battery loop. We also contributed to another important project within the Global Battery Alliance, that aims at the development of a standard for Artisanal Small-scale Mining.

Next to its continued engagement for sustainable cobalt sourcing Umicore implemented in 2018 due diligence in the supply of the other raw materials for batteries, ie nickel, manganese and lithium. The approach taken in this risk assessment is directly inspired by the experience with the cobalt and follows the basic steps of the Sustainable Procurement Framework for Cobalt. Specific mitigation actions have been defined for these metals depending on the identified risk.

V3 CONFLICT MINERALS

On 1 January 2021, the Conflict Minerals Regulation will come into full force across the EU. This law is similar in scope to the US Dodd Frank Act of 2012. The new law aims to help stem the trade in 4 minerals – tin, tantalum, tungsten and gold – that sometimes finance armed conflict or are mined using forced labor.

In addition to existing policies and charters, such as the Umicore Code of Conduct, Human Rights Policy and Sustainable Procurement Charter, Umicore also has a specific policy regarding Responsible global supply chain of minerals from conflict-affected and high-risk areas, available at: https://www.umicore.com/en/media/topics-of-interest/conflict-minerals/.

In 2018, Umicore continued to ensure that its operations with a production of gold are certified as conflict-free. Increasingly Umicore customers request such a guarantee and we provide these customers with the necessary documentation to assure the conflict-free status of our products. The Umicore internal "Metals and Minerals" working group streamlines and optimizes the efforts required for this growing customer demand through best practices sharing.

The Precious Metals Refining operations in Hoboken and Guarulhos are certified as conflict-free smelters for gold by the London Bullion Market Association (LBMA). In 2018, UPMR Hoboken successfully passed the LBMA conflict-free silver audit of its 2017 activities for the first time. Such audits are voluntary for 2017 but will be mandatory for the LBMA accredited silver refiners in the future. In 2019 UPMR Hoboken will be subject to a LBMA audit for compliance against the Responsible Platinum/Palladium Guidance.

The Jewelry & Industrial Metals operations in Pforzheim, Vienna and Bangkok are certified as part of the Responsible Jewelry Council's (RJC) Chain of Custody program. The Jewelry & Industrial Metals sites of Pforzheim is also accredited by the LBMA as Good Delivery refiner. Although platinum does not belong to the list of conflict minerals, the business unit Jewelry & Industrial Metals has passed the audit for responsible platinum sourcing by the RJC. The sites of Pforzheim and Vienna are also certified for palladium and rhodium. Both the RJC Chain of Custody and LBMA Good Delivery accreditations qualify the accredited sites for listing in the Responsible Minerals Initiative conformant smelters and refiners. In 2019 Jewelry & Industrial Metals operations in Pforzheim will be submitted to a LBMA audit for compliance against the Responsible Silver Guidance.

For an overview of the Umicore certificates, please visit https://pmm.umicore.com/en/sustainability/#certificates.

The business units purchasing one the 4 conflict minerals for manufacturing their final products use the Conflict Mineral Reporting Template from the Responsible Minerals Initiative for their due diligence on the purchased raw materials.

The Responsible Minerals 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.

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. Indirect procurement represents roughly 10% of the total spend, half of which is being handled by the Procurement & Transportation teams in Belgium and Germany.

SCOPE

The indicators presented are based on 2018 data from our Procurement & Transportation teams in Belgium and Germany. EcoVadis is now also being used by local procurement team in Brazil.

ASSESSMENT OF SUPPLIERS

Since 2017, a quick scan based on criteria such as size, geographical location and type of product or service provided is systematically used for the assessment of new suppliers. This tool determines the need for an EcoVadis assessment. This tool was implemented first by the teams in Belgium and Germany. In 2018, the first full year of implementation, 249 quick scans have been initiated. The goal is to roll out to other teams worldwide in the future.

Sustainability performance of specific suppliers is assessed by EcoVadis, a well-known collaborative platform providing Supplier Sustainability Ratings.

62 assessment scores were made available to the teams in 2018, including the requests from the Procurement & Transportation teams in Brazil. The total number of scores received since the start of our collaboration with EcoVadis amounts to 355. This represents the number of unique suppliers that have been assessed and does not consider the regular re-assessment of a supplier. This number has been quite stable over the last 3 years and shows that all critical suppliers have now been covered.

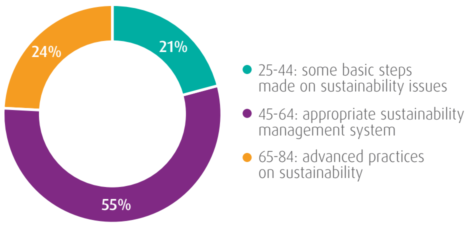
AVERAGE SCORE OF SUPPLIERS BY TOPIC IN 2018

75% of the assessed suppliers in 2018 reach a score of 45 or higher, so-called suppliers "engaged in CSR" (Corporate Social Responsibility).

None of the scores received in 2018 are indicating a "high risk".

In November 2018, the Umicore Group was re-evaluated by Ecovadis and was scored 70, which confirms the gold recognition level. This result includes our Company among the top 5% performers evaluated by EcoVadis.

SUPPLIERS' SCORE IN ECOVADIS ASSESSMENT



	AVERAGE SCORE
Environmental	56.3
Labour practices	52.6
Fair business practices	50.6
Suppliers	47.9
Overall	**52.9**

More information on Umicore's relationship with suppliers can be found in Stakeholder Engagement, p. 63, and in the Value Chain and Society performance review, p.24.

V5 PRODUCTS AND SERVICES

RESOURCE EFFICIENCY

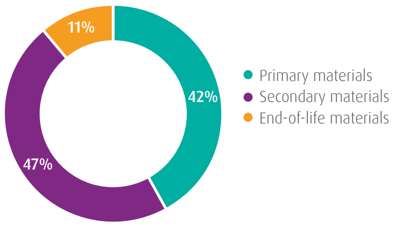
Primary raw materials: are those materials that have a direct relation to their first lifetime hereby excluding streams of by-products.

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 2018, 58% of the materials were from end-of-life or secondary origin while 42% were of primary origin, compared to 62% and 38% in 2017, respectively. The shift towards more primary raw materials is mainly due to the capacity expansion for rechargeable battery materials.

PRODUCTS AND SERVICES CONTRIBUTING TO SPECIFIC SUSTAINABILITY ASPECTS

Our primary focus in terms of sustainable products and services is to leverage activities that provide solutions to the megatrends of clean mobility and resource scarcity. For more information, see Value chain and society, p.24.

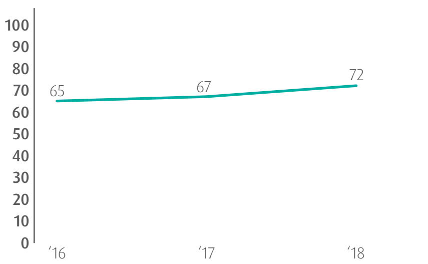
We developed an indicator to underline our focus on clean mobility and recycling. In 2018 the criteria for inclusion in this category were re-assessed and the figures for the previous years have been re-calculated considering the new criteria.

In 2018, the revenues of those activities that deliver products or services that are directly linked to one of these two megatrends was 71.8% of 2018 Group revenues up from 67.2% in 2017. The increase is the result of a higher activity both in recycling and clean mobility. As we work towards our Horizon 2020 goals and bring even more focus to our business, we would expect this percentage to continue to increase.

Please that many of the materials and services making up the remaining 28.2% of revenues are from products answering 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. 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.

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.

Umicore supports the engagement of the metals sector with ECHA in the Metals/inorganics sectorial approach (MISA).

Umicore engaged with cobalt industry in managing 2 specific processes under REACH: the cobalt metal harmonized classification and labelling, and the Annex XV proposal on restriction of five cobalt salts. These processes have no final outcome yet and continue into 2019.

Umicore successfully achieved the third and last REACH registration deadline on 31/05/2018. In total we have submitted 216 registrations for this deadline. The need to register additional substances continues due to new business developments.

In 2018 Umicore has submitted in total 112 registrations.

As part of regular maintenance, 40 REACH dossiers were updated among others to increase the tonnage band, reply to ECHA requests and to include with new information, eg on composition or uses.

The Korean REACH alike regulation was significantly amended in 2018 and has introduced an obligatory pre-notification phase which runs until 30/06/2019 to pre-notify existing substances > 1 t/a in order to profit from the transition phases for the registration. Deadlines depend on the tonnage band and CMR classification and vary between end 2021 and end 2030. Umicore will prepare accordingly.

Umicore has submitted 4 registrations in Korea for the June 2018 deadline of priority chemical substances and has submitted 2 new substance registrations. Another 3 registrations are ongoing.

V6 DONATIONS

SCOPE

The indicators presented are based on data from fully consolidated companies.

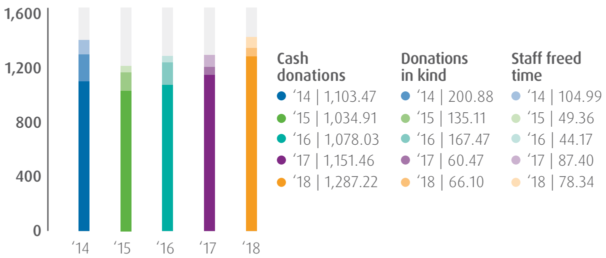
The historical numbers (2016 and before) were not restated.

GROUP DATA

	UNIT	2014	2015	2016	2017	2018
Cash donations	Thousands of Euros	1,103.47	1,034.91	1,078.03	1,151.46	1,287.22
Donations in kind	Thousands of Euros	200.88	135.11	167.47	60.47	66.10
Staff freed time	Thousands of Euros	104.99	49.36	44.17	87.40	78.34
Total donations	**Thousands of Euros**	**1,409.35**	**1,219.38**	**1,289.68**	**1,299.34**	**1,431.66**

DONATIONS

Thousands of Euros



Donations are subdivided into cash donations, donations in kind and staff time. Group level donations are coordinated by a committee reporting to the CEO.

Each business unit is expected to allocate an annual budget that provides sufficient donations and sponsorship support to each site's community engagement program. 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 (ie excluding associates) for the 3 previous years.

REGIONAL DATA

	UNIT	EUROPE	NORTH AMERICA	SOUTH AMERICA	ASIA-PACIFIC	AFRICA	UMICORE GROUP
Total donations	Thousands of Euros	1,195.50	118.08	47.61	55.11	15.36	1,431.66

BUSINESS GROUP DATA

	UNIT	CATALYSIS	ENERGY & SURFACE TECHNOLOGIES	RECYCLING	CORPORATE	UMICORE GROUP
Total donations	Thousands of Euros	142.39	321.38	244.50	723.39	1,431.66

In 2018, Umicore contributed a total of € 1,432 thousand in donations. For the business units, the total amount of € 708 thousand is in line with the guidance of approximately one third of 1% of each unit's average annual recurring consolidated EBIT for the past 3 years. Additional Group level donations were made for an amount of € 724 thousand.

Most of the donations from the business 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 2018 included support for two major UNICEF educational projects in Madagascar and in India, three projects coordinated by Entrepreneurs for Entrepreneurs (in Mali, Ecuador and Bolivia) and support for student sustainable mobility projects.

For a more on Umicore corporate philanthropy, see Giving Back to Society, p. 28.

STATUTORY AUDITOR'S REPORT TO THE GENERAL SHAREHOLDERS' MEETING OF THE COMPANY UMICORE ON THE CONSOLIDATED ACCOUNTS FOR THE YEAR ENDED 31 DECEMBER 2018

We present to you our statutory auditor's report in the context of our statutory audit of the consolidated accounts of Umicore (the "Company") and its subsidiaries (jointly "the Group"). This report includes our report on the consolidated accounts, as well as the other legal and regulatory requirements. This forms part of an integrated whole and are indivisible.

We have been appointed as statutory auditor by the general shareholders' meeting of 25 April 2017, following the proposal formulated by the board of directors and following the recommendation by the audit committee and the proposal formulated by the workers' council. Our mandate will expire on the date of the general shareholders' meeting which will deliberate on the annual accounts for the year ended 31 December 2019. We started the statutory audit of the consolidated accounts of Umicore before 1993.

REPORT ON THE CONSOLIDATED ACCOUNTS

UNQUALIFIED OPINION

We have performed the statutory audit of the Group's consolidated accounts, which comprise the consolidated balance sheet as at 31 December 2018, 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 to the consolidated financial statements, including a summary of significant accounting policies and other explanatory information, and which is characterised by a consolidated balance sheet total of EUR 6.053,3 million and a profit for the year (Group share) of EUR 316,9 million.

In our opinion, the consolidated accounts give a true and fair view of the Group's net equity and consolidated balance sheet as at 31 December 2018, 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.

BASIS FOR UNQUALIFIED OPINION

We conducted our audit in accordance with International Standards on Auditing (ISAs) as applicable in Belgium. Furthermore, we have applied the International Standards on Auditing (ISAs) as approved by the IAASB for the years ending as from 31 December 2018, which are not yet approved at the national level. Our responsibilities under those standards are further described in the "Statutory auditor's responsibilities for the audit of the consolidated accounts" section of our report. We have fulfilled our ethical responsibilities in accordance with the ethical requirements that are relevant to our audit of the consolidated accounts in Belgium, including the requirements related to independence.

We have obtained from the board of directors and Company 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.

KEY AUDIT MATTERS

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated accounts of the current period. These matters were addressed in the context of our audit of the consolidated accounts as a whole, and in forming our opinion thereon, and we do not provide a separate opinion on these matters.

ACCOUNTING TREATMENT OF HEDGING TRANSACTIONS

DESCRIPTION OF THE KEY AUDIT MATTER

The companies of the Umicore Group use a number of different derivative financial instruments to hedge against currency and commodity price risks associated with ordinary business activities. Management's hedging policy is documented in corresponding internal guidelines and serves as the basis for these transactions. Currency and commodity price risks arise primarily from revenue, sales and procurement transactions (in particular commodities).

The cash flow hedges (also labelled as strategic hedges in the annual report) do meet the criteria for hedge accounting under IFRS 9, consequently the effective portion of the changes in fair value of the underlying derivative financial instruments are recognized directly in equity until the underlying hedged cash flows realise. As of the balance sheet date, a cumulative EUR 0,3 million were recognized in the fair value reserves in equity as disclosed in note F 33.1.

A part of the fair value (also labelled as transactional hedges in the annual report) hedges do meet the criteria for fair value hedge accounting under IFRS 9 as disclosed in the accounting policies under note F 2.21.1. The hedged item and the underlying instruments are both recognized at fair value through the income statement.

There is still a part of the transactional hedging for commodities for which under IFRS 9 no fair value hedge accounting can be applied, consisting mainly of physical back-to-back hedging set-ups without any derivative financial instruments involved. As disclosed under note F 2.21.1., a "lower of cost or market" approach is applied on the physical future sales and purchase commitments with customers and suppliers.

The accounting treatment of the hedging transactions was a topic of particular importance due to the changes resulting from the implementation of IFRS 9 including the extensive accounting and disclosure requirements, their high complexity and the increase in the number of hedging transactions.

HOW OUR AUDIT ADDRESSED THE KEY AUDIT MATTER

As part of our audit and with the help of our internal treasury experts, we assessed the contractual and financial parameters and reviewed the accounting treatment, including the effects on equity and profit or loss, of the various hedging transactions. Together with these experts, we also assessed the Company's internal control system with regard to derivative financial instruments, including the internal activities to monitor compliance with the hedging policy. Furthermore, we used market data to review the method applied to measure the fair value of the financial instruments. In addition, we obtained bank and broker confirmations in order to assess the completeness and accuracy of the fair values of the recorded hedging transactions. With regard to the expected cash flows and the assessment of the effectiveness of hedges, we essentially reviewed the prospective testing. We verified that hedges were accounted for and measured in accordance with IFRS 9. In view of the transactional hedges we audited the accuracy and completeness of the related derivative financial instruments via external confirmations and the review of the method applied to measure the fair value via market data. Moreover, for the part on which no fair value hedge accounting can be applied, the "lower of cost or market" approach applied on the physical future sales and purchase commitments with customers and suppliers have been audited on a sample basis.

OUR FINDINGS

Key assumptions and hedge accounting documentation were supported by available evidence. The measurement methods applied for the fair value determination and the disclosures in notes F 33.1 and F. 33.2 are appropriate.

UNCERTAIN (DEFERRED) TAX POSITIONS

DESCRIPTION OF THE KEY AUDIT MATTER

The Company has extensive international operations and is present in many different tax and legal jurisdictions where a.o. transfer pricing assessments could be challenged by the tax authorities in the different countries. The accounting for these uncertain tax positions comprise significant judgement by management mainly in the area whether to recognise these uncertain tax positions and to adequately determine (deferred) tax assets and liabilities. Referring to note F 3.6. management performed a detailed assessment of the uncertain tax positions which resulted in appropriate provisions for these uncertainties.

Income tax was significant to our audit because the assessment process is complex and the amounts involved are material to the consolidated accounts as a whole.

HOW OUR AUDIT ADDRESSED THE KEY AUDIT MATTER

We have tested the completeness and accuracy of the amounts reported for current and deferred tax, including the assessment of disputes with tax authorities, based on the developments in 2018. In this area our audit procedures included, amongst others, assessment of correspondence with the relevant tax authorities. In addition we have evaluated the tax opinions of management's experts which have been obtained by Umicore on the respective cases. We also involved our local component auditors including tax specialists in those countries with significant tax risks. In respect of deferred tax assets, we analysed and tested management's assumptions used to determine the probability that deferred tax assets recognized in the balance sheet will be recovered through taxable income in the countries where the deferred tax assets originated and during the periods when the deferred tax assets become deductible.

OUR FINDINGS

The judgements in respect of the Group's position on uncertain tax items are consistent and in line with our expectations. Uncertainties have been properly taken into account when assessing the (deferred) tax liabilities and assets positions in the consolidated accounts.

POST-EMPLOYMENT BENEFITS AND PENSION ACCOUNTING

DESCRIPTION OF THE KEY AUDIT MATTER

As described in note F 2.16 (accounting policies, employee benefits) and note F27 (provisions for employee benefits) to the consolidated accounts, the employee benefits are split in four different categories, amongst which post-employment defined benefit schemes are included. Referring to note F4 (Critical accounting estimates and judgements), the post-employment defined benefit obligation is seen as a critical accounting estimate by management. The group has several post-employment defined benefit schemes in place resulting in a net liability amounting to EUR 289,1 million at 31 December 2018.

The procedures over the post-employment defined benefit provisions were significant to our audit because the assessment process is complex, involves significant management judgement and is based on actuarial assumptions such as discount rate, compensation increase, price inflation expectations and pension age increase rate assumptions, as disclosed in note F27 to the consolidated accounts.

HOW OUR AUDIT ADDRESSED THE KEY AUDIT MATTER

In testing the post-employment defined benefit provision, we –assisted by our actuarial experts- have evaluated management's actuarial assumptions and valuation methodologies and we assessed the objectivity and competence of the company's external actuaries used for the calculation of the post-employment benefit provisions. We have performed independent testing of the assumptions used by management and prepared by the company's external actuaries, and compared those assumptions to the published actuarial tables, amongst other. Furthermore, we have also assessed the adequacy of the company's disclosure on assumptions in note F27 of the consolidated accounts.

OUR FINDINGS

Based on the evidence obtained, we found that the assumptions used by management in the valuation of the post-employment benefit provision were within a range considered to be reasonable using an internally developed range of acceptable assumptions for valuing pension liabilities, based on our view of various macro economic indicators.

RESPONSIBILITIES OF THE BOARD OF DIRECTORS FOR THE PREPARATION OF THE CONSOLIDATED ACCOUNTS

The board of directors is responsible for the preparation of consolidated accounts that give a true and fair view 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 accounts that are free from material misstatement, whether due to fraud or error.

In preparing the consolidated accounts, the board of directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the board of directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

STATUTORY AUDITOR'S RESPONSIBILITIES FOR THE AUDIT OF THE CONSOLIDATED ACCOUNTS

Our objectives are to obtain reasonable assurance about whether the consolidated accounts as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with ISAs will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated accounts.

In performing our audit, we comply with the legal, regulatory and normative framework applicable to the audit of the consolidated accounts in Belgium.

As part of an audit in accordance with ISAs, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated accounts, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.
- Obtain an understanding of internal control relevant to the audit 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.
- Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by the board of directors.
- Conclude on the appropriateness of the board of directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in our statutory auditor's report to the related disclosures in the consolidated accounts or, if such disclosures are inadequate, to modify our opinion.

Our conclusions are based on the audit evidence obtained up to the date of our statutory auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.

- Evaluate the overall presentation, structure and content of the consolidated accounts, including the disclosures, and whether the consolidated accounts represent the underlying transactions and events in a manner that achieves fair presentation.
- Obtain sufficient and appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the Group audit. We remain solely responsible for our audit opinion.

We communicate with the audit committee regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide the audit committee with a statement that we have complied with relevant ethical requirements regarding independence, and to communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, related safeguards.

From the matters communicated with the audit committee, we determine those matters that were of most significance in the audit of the consolidated accounts of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

REPORT ON OTHER LEGAL AND REGULATORY REQUIREMENTS

RESPONSIBILITIES OF THE BOARD OF DIRECTORS

The board of directors is responsible for the preparation and the content of the directors' report on the consolidated accounts.

STATUTORY AUDITOR'S RESPONSIBILITIES

In the context of our mandate and in accordance with the Belgian standard (revised in 2018) which is complementary to the International Standards on Auditing (ISAs) as applicable in Belgium, our responsibility is to verify, in all material respects, the directors' report on the consolidated accounts and to report on these matters.

ASPECTS RELATED TO THE DIRECTORS' REPORT ON THE CONSOLIDATED ACCOUNTS

In our opinion, after having performed specific procedures in relation to the directors' report on the consolidated accounts, this report is consistent with the consolidated accounts for the year under audit, and it is prepared in accordance with article 119 of the Companies' Code.

In the context of our audit of the consolidated accounts, we are also responsible for considering, in particular based on the knowledge acquired resulting from the audit, whether the directors' report is materially misstated or contains information which is inadequately disclosed or otherwise misleading. In light of the procedures we have performed, there are no material misstatements we have to report to you.

The non-financial information required by virtue of article 119, §2 of the Companies' Code is included in the directors' report on the consolidated accounts. The Company has prepared the non-financial information, based on the reference framework Global Reporting Initiative (GRI) Standards. However, in accordance with article 148, §1, 5° of the Companies' Code, we do not express an opinion, in this report, as to whether the non-financial information has been prepared in accordance with the Global Reporting Initiative (GRI) Standards as disclosed in the consolidated accounts.

STATEMENT RELATED TO INDEPENDENCE

- Our registered audit firm and our network did not provide services which are incompatible with the statutory audit of the consolidated accounts, and our registered audit firm remained independent of the Group in the course of our mandate.
- The fees for additional services which are compatible with the statutory audit of the consolidated accounts referred to in article 134 of the Companies' Code are correctly disclosed and itemized in the notes to the consolidated accounts.

OTHER STATEMENTS

This report is consistent with the additional report to the audit committee referred to in article 526 bis, §6, 4° of the Companies Code referring to article 11 of Regulation (EU) N° 537/2014.

SINT-STEVENS-WOLUWE,
20 March 2019

The statutory auditor
PwC Bedrijfsrevisoren cvba / Reviseurs d'Entreprises scrl
represented by

KURT CAPPOEN
Bedrijfsrevisor/Réviseur d'Entreprises

INDEPENDENT LIMITED ASSURANCE REPORT ON THE ENVIRONMENTAL, SOCIAL AND VALUE CHAIN STATEMENTS OF THE INTEGRATED ANNUAL REPORT 2018 OF UMICORE AND ITS SUBSIDIARIES

This report has been prepared in accordance with the terms of our engagement contract dated 29 June 2017, whereby we have been engaged to issue an independent limited assurance report in connection with the Environmental, Social and Value Chain Statements in the accompanying Integrated Annual Report 2018 of Umicore and its subsidiaries (the "Company") as of and for the year ended 31 December 2018 (the "Report").

RESPONSIBILITY OF BOARD OF DIRECTORS

The Board of Directors of the Company is responsible for the preparation of the information and data in the Environmental, Social and Value Chain Statements set forth in the Integrated Annual 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 159 to 184 ("the Subject Matter Information"), in accordance with the criteria stated 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 that is free from material misstatement, whether due to fraud or error.

AUDITOR'S RESPONSIBILITY

Our responsibility is to express an independent conclusion about the Subject Matter Information based on the procedures we have performed and the evidence we have obtained. We conducted our work in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised) "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 procedures performed in a limited assurance engagement vary in nature and timing from, and are less in extent than for, a reasonable assurance engagement. Consequently, the level of assurance obtained in a limited assurance engagement is substantially lower than the assurance that would have been obtained had a reasonable assurance engagement been performed.

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 Subject Matter Information as of and for the year ended 31 December 2018 presented on pages 159 to 184 of the Report;
- 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 behavior. 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 the procedures performed, as described in this Independent Limited Assurance Report, and the evidence obtained, 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 2018 on pages 159 to 184 of the Integrated 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 members of board of directors of Umicore, in connection with their Environmental, Social and Value Chain Statements as of and for the year ended 31 December 2018 and should not be used for any other purpose. We do not accept, or assume responsibility to anyone else for this report or for the conclusions that we have reached.

SINT-STEVENS-WOLUWE,
20 March 2019

PwC Bedrijfsrevisoren bcvba

Represented by

MARC DAELMAN*
Registered auditor

*Marc Daelman BVBA
Board Member, represented by its fixed representative, Marc Daelman

VISIT ANNUALREPORT.UMICORE.COM

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
GRI 102: GENERAL DISCLOSURES		
ORGANISATIONAL PROFILE		
102-1	Name of the organisation	Front cover
102-2	Activities, brands, products, and services	2-3 (About Us); 12 (Business model)
102-3	Location of headquarters	Inside back cover; back cover
102-4	Location of operations	6 (Umicore at a glance); 170 (Social statements: S2)
102-5	Ownership and legal form	Back cover
102-6	Markets served	6 (Umicore at a glance); 14 (Economic review)
102-7	Scale of the organisation	6 (Umicore at a glance); 170 (Social statements: S2); 97 (Financial statements: consolidated balance sheet)
102-8	Information on employees and other workers	170 (Social statements: S2)
102-9	Supply chain	24 (Value chain and society review), 180-181 (Value chain statements: V2-V4)
102-10	Significant changes to the organisation and its supply chain	14 (Economic review), 182 (Value chain statements: V5)
102-11	Precautionary principle or approach	43 (Risk management and internal control); 44-50 (Key risks and opportunities)
102-12	External initiatives	COSO; OECD Guidelines; ILO Human Rights; SRI, FTSE; PACI; GRI; IIRC
102-13	Membership of associations	66 (Stakeholder engagement:Public sector & authorities)
STRATEGY		
102-14	A statement from the most senior decision-maker of the organisation	7 (CEO and Chairman's review)
102-15	Key impacts, risks, and opportunities	44-50 (Key risks and opportunities)
ETHICS AND INTEGRITY		
102-16	Values, principles, standards, and norms of behaviour	The Umicore Way; Code of Conduct; 43 (Risk management and internal control); 63 (Stakeholder engagement); 77 (Corporate governance statements: G1); 82 (Corporate governance statements:G9); 175 (Social statements: S5)
102-17	Mechanisms for advice and concerns about ethics	Code of Conduct; 175 (Social statements: S5); 82 (Corporate governance statements:G9)
GOVERNANCE		
102-18	Governance structure	77-80 (Corporate governance statements: G2, G4, G5); 72-75 (Management approach)
102-19	Delegating authority	72-75 (Management approach)
102-20	Executive-level responsibility for economic, environmental, and social and societal topics	56 (Executive Committee); 73 (Management approach)

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
102-21	Consulting stakeholders on economic, environmental, and social and societal topics	63 (Stakeholder engagement); 68 (Materiality)
102-22	Composition of the highest governance body and its committees	52 (Board of Directors); 77 (Corporate governance statements: G2)
102-23	Chair of the highest governance body	52 (Board of Directors); 77 (Corporate governance statements: G2)
102-24	Nominating and selecting the highest governance body	78 (Corporate governance statements: G4)
102-25	Conflicts of interest	81-82 (Corporate governance statements: G7, G9-G11); Corporate Governance Charter; Code of Conduct
102-26	Role of highest governance body in setting purpose, values, and strategy	77 (Corporate governance statements: G2)
102-27	Collective knowledge of highest governance body	78 (Corporate governance statements: G4)
102-28	Evaluating the highest governance body's performance	78 (Corporate governance statements: G4)
102-29	Identifying and managing economic, environmental, and social and societal impacts	43 (Risk management and internal control); 42 (Key risks and opportunities); 63 (Stakeholder engagement); 68 (Materiality); 73 (Management approach)
102-30	Effectiveness of risk management processes	43 (Risk management and internal control)
102-31	Review of economic, environmental, and Social and societal topics	44-50 (Key risk and opportunities); 73 (Management approach); 78 (Corporate governance statements: G4)
102-32	Highest governance body's role in sustainability reporting	72-75 (Management approach)
102-33	Communicating critical concerns	63 (Stakeholder engagement); 77-82 (Corporate governance statements: G1, G3, G9, G10, G11); Corporate Governance Charter; Code of Conduct
102-34	Nature and total number of critical concerns	not reported
102-35	Remuneration policies	83 (Remuneration report); Corporate Governance Charter; Code of Conduct
102-36	Process for determining remuneration	83 (Remuneration report); Corporate Governance Charter; Code of Conduct
102-37	Stakeholders' involvement in remuneration	83 (Remuneration report); Corporate Governance Charter; Code of Conduct
102-38	Annual total compensation ratio	not reported
102-39	Percentage increase in annual total compensation ratio	not reported

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
STAKEHOLDER ENGAGEMENT		
102-40	List of stakeholder groups	63-66 (Stakeholder engagement)
102-41	Collective bargaining agreements	174 (Social statements: S4)
102-42	Identifying and selecting stakeholders	63 (Stakeholder engagement)
102-43	Approach to stakeholder engagement	63 (Stakeholder engagement)
102-44	Key topics and concerns raised	63 (Stakeholder engagement); 68 (Materiality)
REPORTING PRACTICE		
102-45	Entities included in the consolidated financial statements	6 (Umicore at a glance); 14 (Economic Performance); 77 (Corporate governance statements: G2); 113, 127 (Economic and financial statements: F5, F17)
102-46	Defining report content and topic boundaries	68 (Materiality); 72 (Management approach)
102-47	List of material topics	68 (Materiality); 72 (Management approach)
102-48	Restatements of information	72-75 (Management approach); 180 (Environmental statements: E1); 170, 175-177 (Social statements: S1, S6, S7); 181 (Value chain statements: V4); 195 (About this report)
102-49	Changes in reporting	170, 175-177 (Social statements: S1, S6, S7); 160-163 (Environmental statements: E1, E2, E3); 181-182 (Value chain statements: V1, V4, V6); 195 (About this report)
102-50	Reporting period	Front cover; Inside front cover; 195 (About this report)
102-51	Date of most recent report	Annual report website
102-52	Reporting cycle	Front cover; Inside front cover; Annual report website
102-53	Contact point for questions regarding the report	Inside back cover; About the report: natalia.agueros@eu.umicore.com; General: annualreport@eu.umicore.com; Economic: evelien.goovaerts@eu.umicore.com; Human Resources: eline.vanhaute@eu.umicore.com; Environmental, Health & Safety: bert.swennen@eu.umicore.com; Value Chain: wouter.ghyoot@eu.umicore.com
102-54	Claims of reporting in accordance with the GRI Standards	Inside front cover; 195 (About this report)
102-55	GRI content index	This section; 195 (About this report)
102-56	External assurance	185 (Assurance report)
GRI 103: MANAGEMENT APPROACH		
103-1	Explanation of the material topic and its boundary	72-75 (Management approach)
103-2	The management approach and its components	72-75 (Management approach)
103-3	Evaluation of the management approach	72-75 (Management approach)

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
GRI 201: ECONOMIC PERFORMANCE		
201-1	Direct economic value generated and distributed	62 (Key figures); 6 (Umicore at a glance); 67 (Stakeholder engagement); 119-120,154 (Economic and financial statements: F8, F9, F39)
201-3	Defined benefit plan obligations and other retirement plans	136 (Economic and financial statements: F27)
201-4	Financial assistance received from government	63 (Stakeholder engagement)
GRI 202: MARKET PRESENCE		
202-2	Proportion of senior management hired from the local community	Similar scope covered in 170 (Social statements: S2)
GRI 203: INDIRECT ECONOMIC IMPACTS		
203-1	Infrastructure investments and services supported	62 (Key figures); 63 (Stakeholder engagement); 166 (Environmental statements: E7); 184 (Value chain statements: V6)
GRI 205: ANTI-CORRUPTION		
205-1	Operations assessed for risks related to corruption	42 (Risk management and internal control)
205-2	Communication and training about anti-corruption policies and procedures	All employees receive informal training on the Code of Conduct when joining the company
GRI 206: ANTI-COMPETITIVE BEHAVIOR		
206-1	Legal actions for anti-competitive behaviour, anti-trust, and monopoly practices	152 (Financial statements: F36)
GRI 301: MATERIALS		
301-2	Recycled input materials used	6 (Umicore at a glance); 182 (Value chain statements: V5)
GRI 302: ENERGY		
302-1	Energy consumption within the organisation	164 (Environmental statements: E4)
302-3	Energy intensity	164 (Environmental statements: E4)
302-4	Reduction of energy consumption	164 (Environmental statements: E4)
GRI 305: EMISSIONS		
305-1	Direct (Scope 1) GHG emissions	163 (Environmental statements: E3)
305-2	Energy indirect (Scope 2) GHG emissions	163 (Environmental statements: E3)
305-7	Nitrogen oxides (NO_X), sulphur oxides (SO_X), and other significant air emissions	162 (Environmental statements: E2)

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
GRI 308: SUPPLIER ENVIRONMENTAL ASSESSMENT		
308-2	Negative environmental impacts in the supply chain and actions taken	24 (Value chain and society review), 180-181 (Value chain statements: V2-V4)
GRI 401: EMPLOYMENT		
401-1	New employee hires and employee turnover	6 (Umicore at a glance); 62 (Key figures); 34 (Great place to work review); 170-173 (Social statements: S2; S3)
GRI 403: OCCUPATIONAL HEALTH AND SAFETY		
403-1	Workers representation in formal joint management-worker health and safety committees	174 (Social statements: S4)
403-2	Types of injury and rates of injury, occupational diseases, lost days, and absenteeism, and number of work-related fatalities	62 (Key figures); 34 (Great place to work review); 175-177 (Social statements: S6, S7)
403-4	Health and safety topics covered in formal agreements with trade unions	174 (Social statements: S4); Global framework Agreement on Sustainable Development
GRI 404: TRAINING AND EDUCATION		
404-1	Average hours of training per year per employee	62 (Key figures); 34 (Great place to work review); 173 (Social statements: S3)
404-2	Programmes for upgrading employee skills and transition assistance programmes	34 (Great place to work review); 173 (Social statements: S3)
404-3	Percentage of employees receiving regular performance and career development reviews	173 (Social statements: S3)
GRI 405: DIVERSITY AND EQUAL OPPORTUNITY		
405-1	Diversity of governance bodies and employees	34 (Great place to work review); 78 (Corporate governance statements: G4); 170 (Social statements: S2)
GRI 408: CHILD LABOR		
408-1	Operations and suppliers at significant risk for incidents of child labour	This element is taken into account as part of the objective on "Sustainable supply"; see 24 (Value chain and society review); 180-181 (Value chain statements V2-V4 for approach toward sustainable supply)
GRI 409: FORCED OR COMPULSORY LABOR		
409-1	Operations and suppliers at significant risk for incidents of forced or compulsory labour	This element is taken into account as part of the objective on "Sustainable supply"; see 24 (Value chain and society review); 180-181 (Value chain statements V2-V4)
GRI 414: SUPPLIER SOCIAL ASSESSMENT		
414-2	Negative Social and societal impacts in the supply chain and actions taken	24 (Value chain and society review), 180 (Value chain statements: V2-V4)

GRI STANDARDS REFERENCE	DISCLOSURE	PAGE REFERENCE IN ANNUAL REPORT 2018
GRI 416: CUSTOMER HEALTH AND SAFETY		
416-1	Assessment of the health and safety impacts of product and service categories	182 (Value chain statements: V5)
GRI 417: MARKETING AND LABELLING		
417-1	Requirements for product and service information and labelling	182 (Value chain statements: V5)
OTHER MATERIAL TOPICS REPORTED		
	Criticality of raw materials	To complement the reporting on GRI 308: Supplier Environmental Assessment and GRI 414: Supplier Social Assessment. See 24 (Value chain and society review), 180-181 (Value chain statements: V2-V4)
	Sustainable products and services	To complement reporting on GRI 301: Materials. See 24 (Value chain and society); 180-181 (Value chain statements: V5)
	Process safety	To complement reporting on GRI 403: Occupational Health and Safety. See 178 (Social statements: S8)
	Metal emissions to air and water	To complement reporting on GRI 305: Emissions. See 162 (Environmental statements: E2)

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ANNUAL REPORT GLOSSARY annualreport.umicore.com/glossary

THE UMICORE WAY www.umicore.com/en/about/values/#materialsforabetterlife

CODE OF CONDUCT www.umicore.com/en/governance/code-of-conduct

HORIZON 2020 www.umicore.com/en/cases/horizon-2020

GLOBAL FRAMEWORK AGREEMENT ON SUSTAINABLE DEVELOPMENT www.industriall-union.org/sites/default/files/uploads/documents/2015/Belgium/industriall_umicore_gfa_2015.pdf

SUSTAINABLE PROCUREMENT CHARTER www.umicore.com/storage/main/umicore-sustainable-procurement-charter-2017.pdf

RESPONSIBLE GLOBAL SUPPLY CHAIN OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS www.umicore.com/storage/main/responsiblesupplychainpolicy.pdf

SUSTAINABLE PROCUREMENT FRAMEWORK FOR COBALT www.umicore.com/storage/main/sustainablecobaltsupplybrochurefinal.pdf

DUE DILIGENCE COMPLIANCE REPORT COBALT PROCUREMENT www.umicore.com/en/cases/sustainable-procurement-framework-for-cobalt/compliance-report

CORPORATE GOVERNANCE CHARTER www.umicore.com/en/governance/corporate-governance-charter

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OTHER REFERENCES & LINKS

CORPORATE GOVERNANCE COMMITTEE www.corporategovernancecommittee.be/en

ECOVADIS www.ecovadis.com

FINANCIAL SERVICES AND MARKETS AUTHORITY www.fsma.be/en

OECD DUE DILIGENCE GUIDANCE FOR RESPONSIBLE SUPPLY CHAINS OF MINERALS FROM CONFLICT-AFFECTED AND HIGH-RISK AREAS www.oecd.org/daf/inv/mne/OECD-Due-Diligence-Guidance-Minerals-Edition3.pdf

RESPONSIBLE MINERALS INITIATIVE, FORMERLY CONFLICT-FREE SOURCING INITIATIVE www.responsiblemineralsinitiative.org

WBCSD GUIDANCE FOR ACCOUNTING AND REPORTING CORPORATE GHG EMISSIONS IN THE CHEMICAL SECTOR VALUE CHAIN www.wbcsd.org/contentwbc/download/2831/35596

The Umicore Annual Report offers a comprehensive and integrated view of our economic, financial, environmental, value chain and social performance for 2018.

This report consists of two sections: an annual review and a statements section, also available as two distinct booklets. The annual review (Book 1, pp. 1-62) provides a Umicore overview and focuses on the key performance aspects of 2018 as they relate to our Horizon 2020 strategy. The statements (Book 2, pp. 63-195) include a thorough description of the materiality assessment and the approach to economic, environmental, value chain and social management, as well as full financial, environmental, value chain, social and governance statements and notes. All elements of the 2018 Annual Report can be consulted at http://annualreport.umicore.com/

AN INTEGRATED APPROACH

One of the key objectives of this report is to reflect our integrated strategic approach which combines economic, environmental, value chain 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, which requires a more complete disclosure and discussion of the material factors influencing our business and the risks and opportunities linked to our Horizon 2020 strategy.

REPORTING SCOPE

This report covers our operations for the 2018 calendar year which is also the Umicore fiscal year, and reports on the progress towards our 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 are available, the performance indicators in the document are reported with a comparison base going back 5 years.

The economic scope of this report covers all fully consolidated operations and the financial contributions of all associate and joint venture companies.

The environmental and social scope is limited to all fully consolidated – any divergence from this scope is explained in the relevant chapter or note in the report.

DATA

The economic and financial data are collected through our financial management and consolidation process. The environmental and social data are 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 pp. 95-158 and p. 185.

The social, value chain 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 social, environmental and value chain statements, pp. 159-184. PwC's report on the social, value chain and environmental statements can be found on p. 189.

This report has been prepared in accordance with the GRI Standards: Core option. A full GRI index can be found on pp. 191-193. 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.

Umicore has aligned the corporate reporting to the non-financial reporting requirements set out in the Belgium Companies Code.

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 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 on both the print and online versions of the report (see facing page for contact details). Feedback received on our previous reports has been considered in the preparation of this report.

FINANCIAL CALENDAR[1]

25 APRIL 2019
General meeting of shareholders (financial year 2018)

29 APRIL 2019
Ex-dividend trading date

30 APRIL 2019
Record date

2 MAY 2019
Payment date for dividend

31 JULY 2019
Half year results 2019

7 FEBRUARY 2020
Full year results 2019

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FEEDBACK
Let us know what you think about this report.
Send an e-mail to annualreport@eu.umicore.com

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[1] Dates are subject to change. Please check the Umicore website for updates to the financial calendar.