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

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2018 Annual review

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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

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.
our metallurgy, chemistry and materials science expertise.
we provide solutions for the 21st century, by combining
As a global materials and technology group,
We reduce harmful industrial
We contribute to resource
and vehicle emissions to
stewardship by recycling
metals and end-of-life
our materials tackle global trends for clean air, e-mobility and resource stewardship.

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

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.

RECYCLING

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.

Umicore Integrated Annual Report 2018
Horizon 2020 progress

OUR OBJECTIVES

ECONOMIC PERFORMANCE

STRENGTHEN LEADERSHIP

DOUBLE THE EARNINGS

REBALANCE PORTFOLIO

VALUE CHAIN AND SOCIETY

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

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

READ MORE ABOUT ECONOMIC PERFORMANCE ON PAGE 14

READ MORE ABOUT VALUE CHAIN AND SOCIETY ON PAGE 24

Umicore Integrated Annual Report 2018
OUR OBJECTIVES

ECO-EFFICIENCY

GREAT PLACE TO WORK

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%

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
€ 3,271$m

R&D EXPENDITURE
6% of revenues

RECURRING EBIT
€ 514$m

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

Umicore Integrated Annual Report 2018
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

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 CO2 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

- Regulatory and legal context
- Sustainable and ethical supply
- Technology and substitution
- Market
- Metal price

SEE RISKS ON PAGE 41

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
In 2018 we reached the Horizon 2020 economic performance targets two years ahead of schedule and reaffirmed the upside potential.

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.
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.
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 CO₂ 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.
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 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.

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
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

- Regulatory and legal context
- Sustainable and ethical supply
- Technology and substitution
- Market
- Climate & Environment

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.

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

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 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.

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 CO₂ 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.
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.

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.
2020 Target

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

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.

KEY RISKS & OPPORTUNITIES

- Regulatory and legal context
- Technology and substitution
- Climate & Environment

SEE RISKS ON PAGE 41
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

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 CO₂e emissions increased 21% in comparison with 2017.

METAL EMISSION REDUCTION

<table>
<thead>
<tr>
<th>Year</th>
<th>To Air</th>
<th>To Water</th>
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<tbody>
<tr>
<td>2015</td>
<td>100</td>
<td>100</td>
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<tr>
<td>2016</td>
<td>91</td>
<td>91</td>
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(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.

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.

ECO-EFFICIENCY

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 m³ in 2017, down to 4,800 m³ in 2018).
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 CO2 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

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**

- Talent attraction and retention

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**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.

2018 Umicore award-winner In-Sik Choi

VISIT ANNUALREPORT.UMICORE.COM

SEE RISKS ON PAGE 41
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

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.
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).

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.

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 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).
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.
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.

GREAT PLACE TO WORK

EMPLOYEE ENGAGEMENT

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.
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.
Managing risk effectively

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

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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.

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.

**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.
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

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.
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.
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.
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.

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.
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.
TALENT ATTRACTION AND RETENTION

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.
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
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

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

MARK 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.

EXTERNAL APPOINTMENTS  
CEO and Director, Melexis, Belgium  
Chairwoman, Flemish STEM Platform, an independent advisory group to the government of Flanders

FRANÇOISE CHOMBAR  
INDEPENDENT NON-EXECUTIVE DIRECTOR
Belgian, 56

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

Key: NR Nomination & remuneration committee (Chair)  
N Nomination & remuneration committee (Member)  
A Audit committee (Chair)  
A Audit committee (Member)
KOENRAAD DEBACKERE  
INDEPENDENT NON-EXECUTIVE DIRECTOR  
Belgian, 57  
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  
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  
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  
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.
## 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.

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### 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**

- Belgian, 67

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**Key:**
- NR = Nomination & remuneration committee (Chair)
- NRM = Nomination & remuneration committee (Member)
- A = Audit committee (Chair)
- AM = Audit committee (Member)
Sitting left to right: Pascal Reymondet, An Steegen, Denis Goffaux, Marc Grynberg, Géraldine Nolens, Stephan Csoma, Filip Platteeuw
MARC GRYNBERG  
CHIEF EXECUTIVE OFFICER

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

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

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

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  

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  

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  

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.
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.
**Key figures**

### ECONOMIC PERFORMANCE
(in millions of Euros unless stated otherwise)

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues (excluding metal)</td>
<td>2,366.5</td>
<td>2,629.0</td>
<td>2,667.5</td>
<td>2,915.6</td>
<td>3,271</td>
</tr>
<tr>
<td>Recurring EBIT</td>
<td>273.7</td>
<td>330.3</td>
<td>350.7</td>
<td>410.3</td>
<td>514</td>
</tr>
<tr>
<td>Return on Capital Employed (ROCE) (in %)</td>
<td>12.2</td>
<td>13.7</td>
<td>14.6</td>
<td>15.1</td>
<td>15.4</td>
</tr>
<tr>
<td>R&amp;D expenditure</td>
<td>143.3</td>
<td>144.5</td>
<td>155.9</td>
<td>175.2</td>
<td>196</td>
</tr>
<tr>
<td>Capital expenditure</td>
<td>202.4</td>
<td>240.3</td>
<td>287.3</td>
<td>365.3</td>
<td>478</td>
</tr>
<tr>
<td>Recurring EPS (in €/share)</td>
<td>0.89</td>
<td>1.13</td>
<td>1.07</td>
<td>1.22</td>
<td>1.36</td>
</tr>
<tr>
<td>Gross dividend (in €/share)</td>
<td>0.50</td>
<td>0.60</td>
<td>0.65</td>
<td>0.70</td>
<td>0.75</td>
</tr>
</tbody>
</table>

### SOCIAL, ENVIRONMENTAL AND VALUE CHAIN PERFORMANCE

<table>
<thead>
<tr>
<th></th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues from clean mobility and recycling (in %)</td>
<td>–</td>
<td>–</td>
<td>65</td>
<td>67</td>
<td>72</td>
</tr>
<tr>
<td>Total donations (in thousands of Euros)</td>
<td>1,409.35</td>
<td>1,219.38</td>
<td>1,289.68</td>
<td>1,299.34</td>
<td>1,431.66</td>
</tr>
<tr>
<td>CO₂e emissions (scope 1+2) – Market based (in tonne)</td>
<td>664,568</td>
<td>710,143</td>
<td>662,059</td>
<td>633,704</td>
<td>765,756</td>
</tr>
<tr>
<td>CO₂e emissions (scope 1+2) – Location based (in tonne)</td>
<td>–</td>
<td>–</td>
<td>735,065</td>
<td>663,307</td>
<td>783,843</td>
</tr>
<tr>
<td>Energy consumption (in terajoules)</td>
<td>7,304</td>
<td>7,742</td>
<td>6,737</td>
<td>6,532</td>
<td>7,447</td>
</tr>
<tr>
<td>Workforce (fully consolidated companies)</td>
<td>10,368</td>
<td>10,429</td>
<td>9,921</td>
<td>9,769</td>
<td>10,420</td>
</tr>
<tr>
<td>Lost Time Accidents (LTA)</td>
<td>37</td>
<td>47</td>
<td>59</td>
<td>51</td>
<td>61</td>
</tr>
<tr>
<td>LTA frequency rate</td>
<td>2.16</td>
<td>2.66</td>
<td>3.34</td>
<td>3.01</td>
<td>3.36</td>
</tr>
<tr>
<td>LTA severity rate</td>
<td>0.94</td>
<td>0.12</td>
<td>0.56</td>
<td>0.09</td>
<td>0.10</td>
</tr>
<tr>
<td>Exposure ratio ‘all biomarkers aggregated’ (in %)</td>
<td>1.8</td>
<td>2.3</td>
<td>3.2</td>
<td>2.7</td>
<td>2.8</td>
</tr>
<tr>
<td>Average number of training hours per employee</td>
<td>45.59</td>
<td>45.06</td>
<td>41.49</td>
<td>45.33</td>
<td>43.10</td>
</tr>
<tr>
<td>Voluntary leavers ratio</td>
<td>3.42</td>
<td>3.35</td>
<td>4.10</td>
<td>5.03</td>
<td>7.18</td>
</tr>
</tbody>
</table>
IF OUR PIONEERING APPROACH CAN MAKE US A LEADER IN SUSTAINABILITY

IMAGINE WHAT YOU COULD DO?
FINANCIAL CALENDAR

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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This report is also available in French and Dutch.

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Company Number: 0401574852
VAT No: BE 0401 574 852

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Christopher Smith
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christopher.smith@eu.umicore.com

DESIGN & EXECUTION
Radley Yeldar – ry.com

PHOTOGRAPHY
Jean-Michel Byl, Umicore

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.

umicore.com