



umicore
materials for a better life

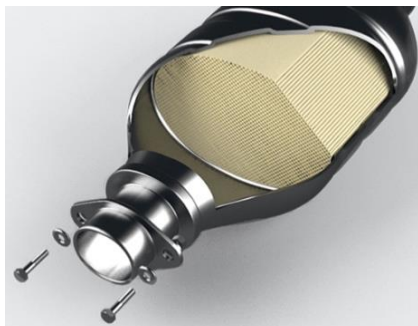
Umicore Investor Presentation

March 2020



Introduction to Umicore

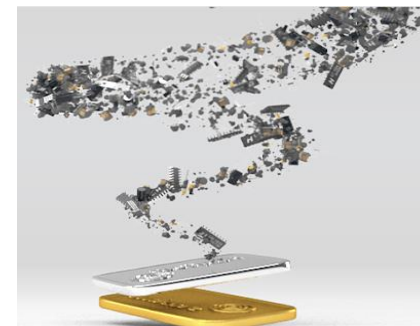
We are a global materials technology and recycling group



One of three global leaders in emission control catalysts for light-duty and heavy-duty vehicles and for all fuel types



A leading supplier of key materials for rechargeable batteries used in electrified transportation and portable electronics

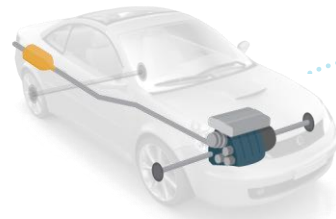


The world's leading recycler of complex waste streams containing precious and other valuable metals

With a unique position in clean mobility materials and recycling

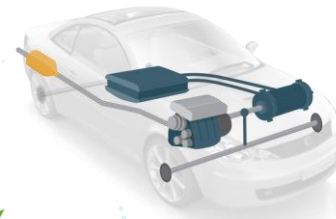
Internal Combustion Engine

Umicore provides:
Emission control catalysts



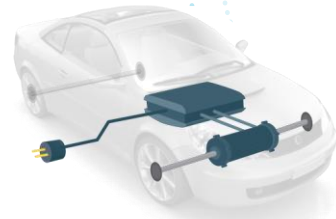
Plug-In Hybrid Electric Vehicle

Umicore provides:
Battery cathode materials and
emission control catalysts



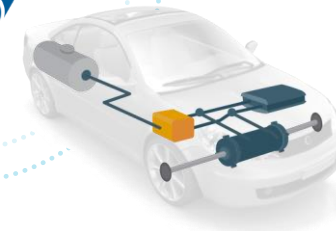
Full Electric Vehicle

Umicore provides:
Battery cathode materials



Fuel cells

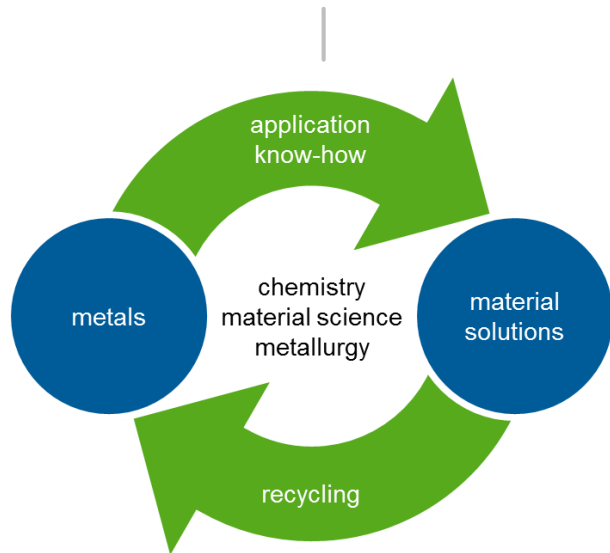
Umicore provides:
Electro-catalyst and
battery cathode materials



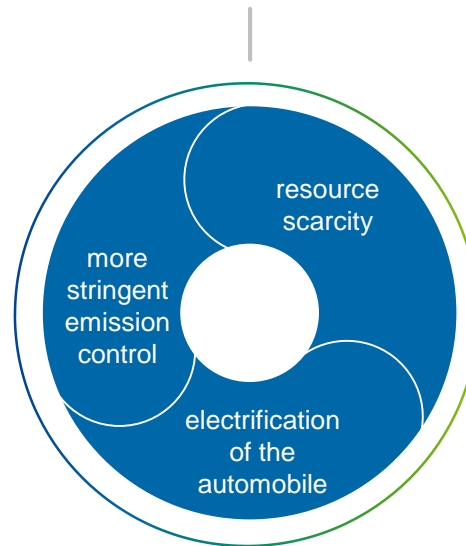
Present across all drive trains and offering sustainable closed-loop services

Built on sound foundations

Unique business model



Supportive megatrends & legislation



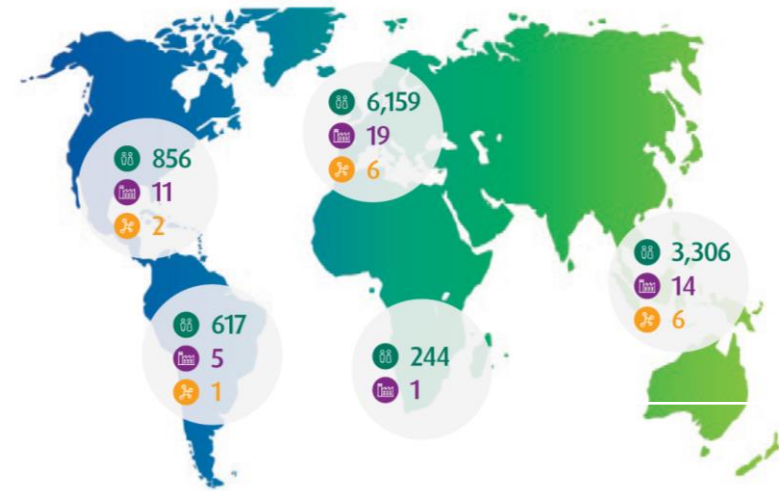
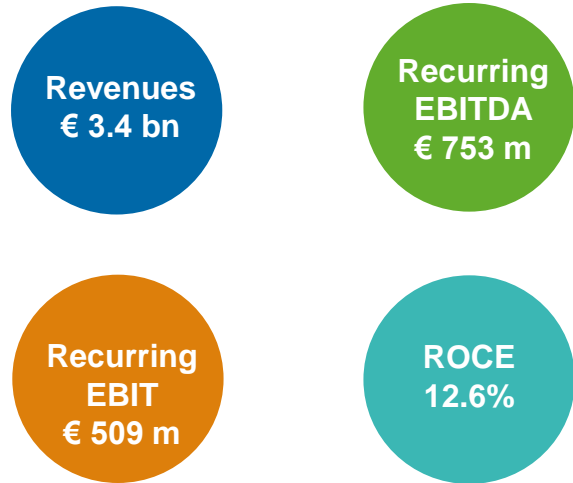
Industry leader in sustainability



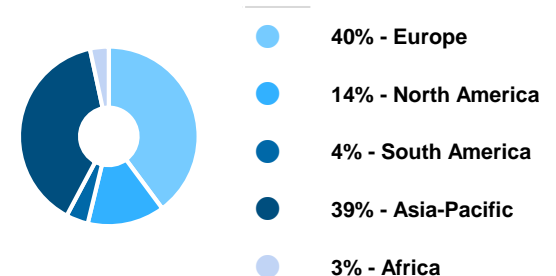
We help improve air quality, make electrified transport possible and tackle resource scarcity

With a robust financial performance and a global presence

Key figures (FY 2019)



Revenues* by geography



* 2019 data

We deliver on our Horizon 2020 strategy



Clear leadership
in clean mobility
materials and
recycling



Doubled the size
of the business in
terms of earnings



Rebalanced the
portfolio
& earnings
contributions



Turned
sustainability into
a greater
competitive edge

With a focused & balanced Group structure



CATALYSIS

Automotive Catalysts
Precious Metals Chemistry



ENERGY & SURFACE TECHNOLOGIES

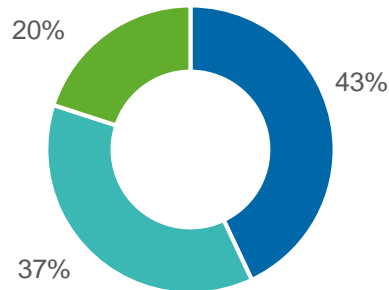
Rechargeable Battery Materials
Cobalt & Specialty Materials
Electroplating
Electro-Optic Materials



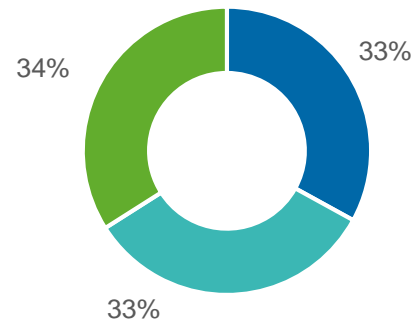
RECYCLING

Precious Metals Refining
Jewelry & Industrial Metals
Precious Metals Management

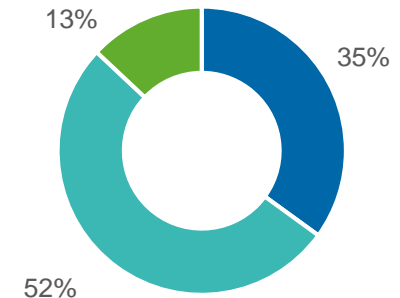
Revenues*
(excluding metal)



Recurring EBIT*



Capital employed*
(average)



* FY 2019 data; corporate not included



Unique position in Automotive Catalysts

Strong growth drivers:

Tightening emission norms for LDV and HDD, in particular in China, Europe and India

Significant value uplift especially in gasoline catalysts

Increasing share of gasoline platforms in the global mix

Increasing uptake of fuel cell drivetrains

Umicore **best positioned** to capture growth in growing gasoline segment; largest share of cGPF platforms won in China and Europe

Umicore **well positioned** to capture growth in HDD segments

Umicore **expanding capacity in fuel cells**



Unique position in Rechargeable Battery Materials for xEV

Electrification confirmed as main avenue to drastically reduce vehicle emissions in mid- and long-term

Strongly supported by **legislation** and evidenced by massive roll-out of car OEM's e-mobility strategies

Increasing electrification drives **strong market demand** in mid and long-term

Technology roadmap offers ample room for **innovation and differentiation**

Product

Process

Closed loop offering

Umicore uniquely positioned to address long-term requirements of this industry, while managing short-term fluctuations with agility

Full spectrum of highest quality cathode materials

Process technology and ability to scale up fast

Innovation pipeline spanning next 20 years

Integrated supply chain and battery recycling



Unique position in Recycling



Metallurgical leadership and proprietary technologies for treating complex residues and by-products



Closing the loop in product businesses by offering recycling services



Over 200 different input streams



Recovery of more than **20 different metals**

Increasing **resource scarcity** and need for **closing the loop**

Growing complexity of materials to recycle

Increased availability of complex materials, in particular end-of-life materials

Eco-efficient recycling processes are becoming the norm

Umicore uniquely positioned to capture growth as the **world's largest and most complex** precious metal recycler with **world class environmental and quality standards**

We have a solid framework for value creation



Strong growth

- Multiple growth drivers
- Secular trends
- Supporting legislation
- Privilege organic growth
- Complementary M&A, with focus on value creation

R&D
6% of
revenues

Capex
€ 553 m*



Focus on returns

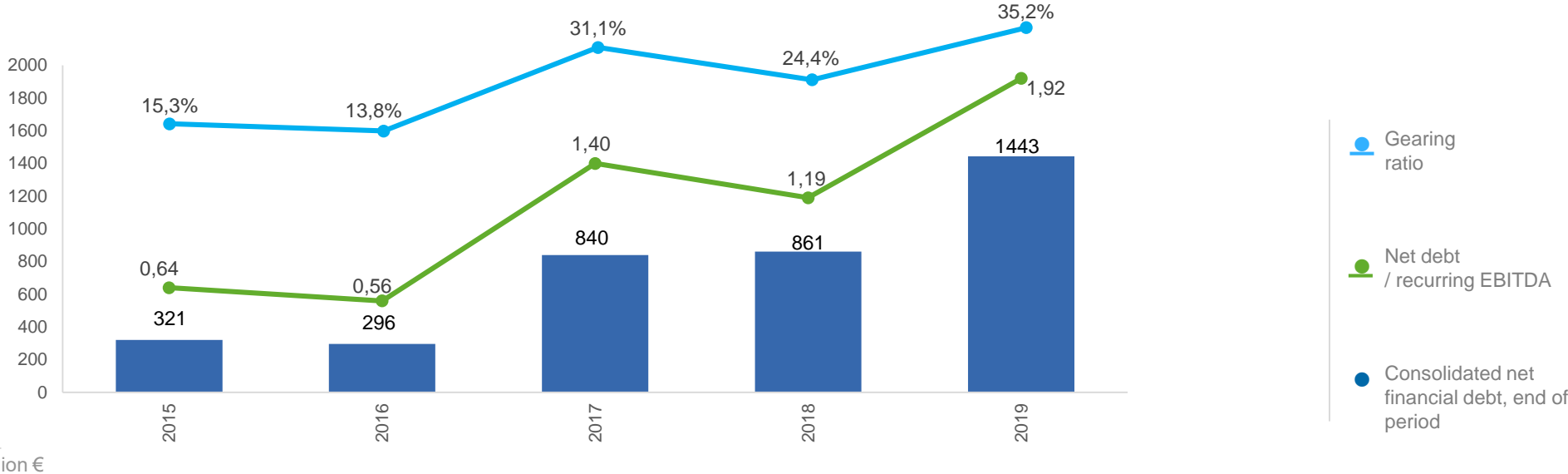
- Earnings growth objective
- Group and segment returns > cost of capital
- 15%+ ROCE target
- Value creation precedes ROCE maximization



Focus on cashflows and solid capital structure

- Prioritize cash for strategic organic growth projects
- Currently in accelerated investment phase
- Strong self-funding capacity (normalized excl. current acceleration)
- Cash return to shareholders

Maintaining a healthy capital structure



million €

Net financial debt of € 1,443 m, including new € 390 m long term US private debt placement, drawn in September 2019

Diversified funding base and balanced maturity profile

Corresponds to :

1.9x net debt to recurring EBITDA ratio

35% net gearing ratio

Funding headroom to execute growth strategy while remaining within the investment grade territory



Business Group Overview

Catalysis



Catalysis

Automotive Catalysts

A world leader in emission control catalysts for light-duty and heavy-duty vehicles and for all fuel types. Complemented by smaller stationary catalyst applications (marine, power generation, ...).



Precious Metals Chemistry

Develops and produces metal-based catalysts used in chemistry, life sciences and pharmaceutical applications. Also has a complete portfolio of catalyst technologies for fuel cells.





Automotive Catalysts: business model



We develop technologies which allow our customers to meet automotive emission legislation at the lowest Total Cost of Ownership

Complete catalyst systems to reduce exhaust gas emissions



Customer focus



People engagement

Operational excellence



Global manufacturing & technical footprint

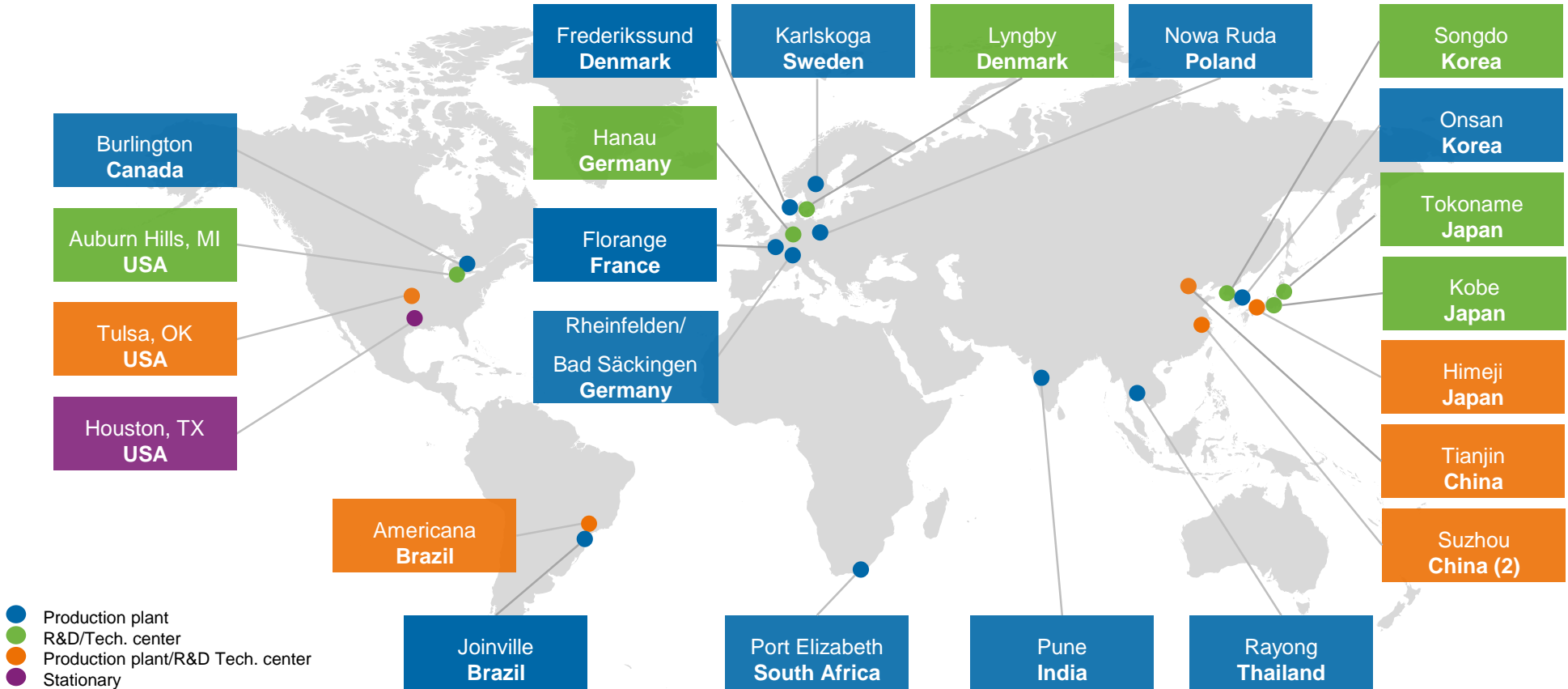




Automotive Catalysts Production Footprint



19 plants in 14 countries, 10 R&D / tech. centers in 7 countries





Catalysis 2019 market context

Recession in global car market

Global light-duty vehicle production down by 6.3% year on year:

China	- 8.9%
Europe	- 5.0%
North America	- 4.4%

China down 2nd year in a row; steep contraction in H1 19, while pace of decline eased somewhat in H2 19

Falling diesel production in Europe (-12%), share of 35% in European car market

More stringent emission norms in key regions

Euro 6d TEMP for all new vehicles since September 2019

Early implementation of China 6a in July 2019 in several major cities and provinces

Increasing share of gasoline particulate filters in Europe and China



Catalysis 2019 performance



Revenues +7% and REBIT +10%; outperforming market reflecting market share gains in light-duty gasoline

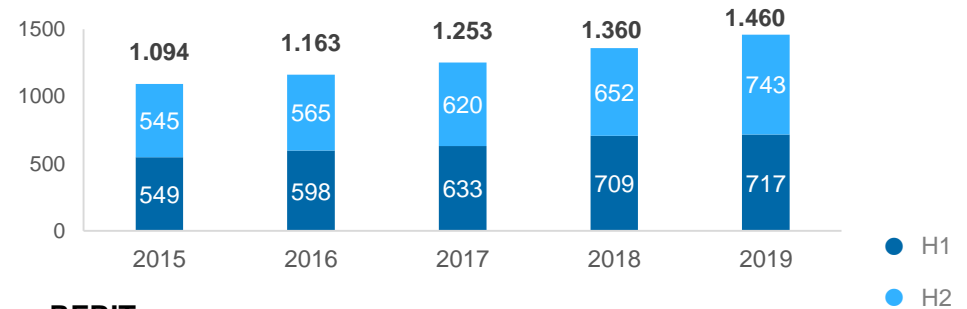
Automotive Catalysts

- Market share gains in light-duty gasoline
- Growing penetration of cGPFs in China and Europe
- Leadership position in light-duty vehicles in China
- Higher volumes and revenues in heavy-duty diesel

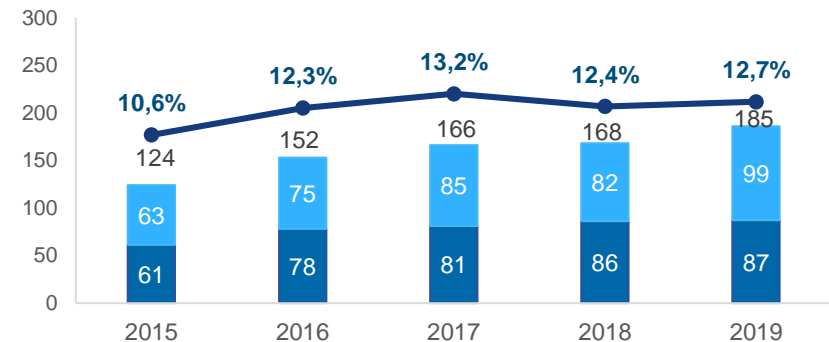
Precious Metals Chemistry

- Strong demand from pharmaceutical and chemical industries
- Significant increase in demand for fuel cell catalysts

REVENUES



REBIT



million €



Catalysis – major milestones in 2019

Sustained investments
in **product and
process innovation**

Capacity expansions
to support growth of
Automotive Catalysts in
China, Poland and India

Opening of new plant
for **fuel cell catalysts**
in Korea



Impressions



Catalyst elements



Test bench



Bad-Säckingen plant AC, Germany



Canned catalyst



Installation stationary DNOx catalyst



Nowa Ruda plant AC, Poland



Business Group Overview

Energy & Surface Technologies



Energy & Surface Technologies



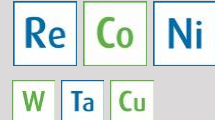
Rechargeable Battery Materials

A leading cathode material supplier for lithium-ion rechargeable batteries used in electrified vehicles and portable electronics.



Cobalt & Specialty Materials

Refines and recycles cobalt and nickel; produces cobalt and nickel specialty chemicals for a wide range of applications (incl. tires, catalysts, surface treatment). Also includes battery recycling.



Electroplating

Supplies precious metal electrolytes & processes for technical, functional and decorative applications.



Electro-Optic Materials

Supplier of products for thermal imaging as well as wafers for space solar cells and high brightness LEDs, chemicals for fiber optics and thin film applications.



Rechargeable Battery Materials: business model



Product innovation
based on strong
application know-how



Process innovation
fuels productivity
improvements while
maintaining highest quality
standards (stringent
automotive standards)



Established industrial
footprint **close to the
customer**



**Strong industrialization
capabilities** building on
historical Umicore key
competences



Integrated process flows
with guaranteed access
to critical raw materials
allows **an agile market
approach**



It takes a lot to play in the automotive league

Car OEMs need :

High quality cathode materials

- ... **custom made** for **different types** of xEVs
 - ... in **massive volumes**
 - ... at the highest **speed and flexibility**
 - ... at a **competitive price**
 - ...without any **sustainability image risk**.
- excellent product quality on 20+ specs
 - wide spectrum of cathode material technologies
 - industrial capabilities
 - ability to scale up fast
 - cost-efficient processes
 - ethically sourced materials

**It takes product technology,
process technology and supply**



Product, process and supply

Key success factors

3 Supply



Raw materials

- Feed flexibility
- Battery recycling

1 Product Technology



Lab scale

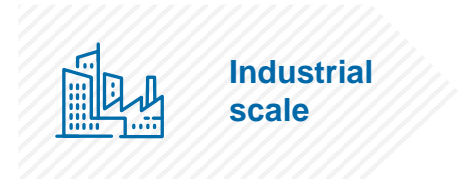
Wide spectrum of cathode material technologies

2 Process Technology



Pilot scale

- Ability to scale up fast
- Cost-efficient processes
- Industrial capabilities



Industrial scale

Best in class product quality on 20+ specs:
continuous fine-tuning at lab, pilot and industrial scale



Product
technology

Cathode material specs to fulfil cell performance specs



Cathode material product specs

- Particle size
- Morphology
- Composition
- Purity
- Packing density
- Porosity
- Consistency
- and more...



Cathode material performance specs

- Capacity
- Power (charge/discharge)
- Cycle life
- Safety
- Charge efficiency
- and more...

Tailoring cathode material characteristics to the cell specs requires:

Fundamental chemistry know-how to design the right product composition during lab phase

Ability to further enhance the product designs during the qualification cycles in pilot phase

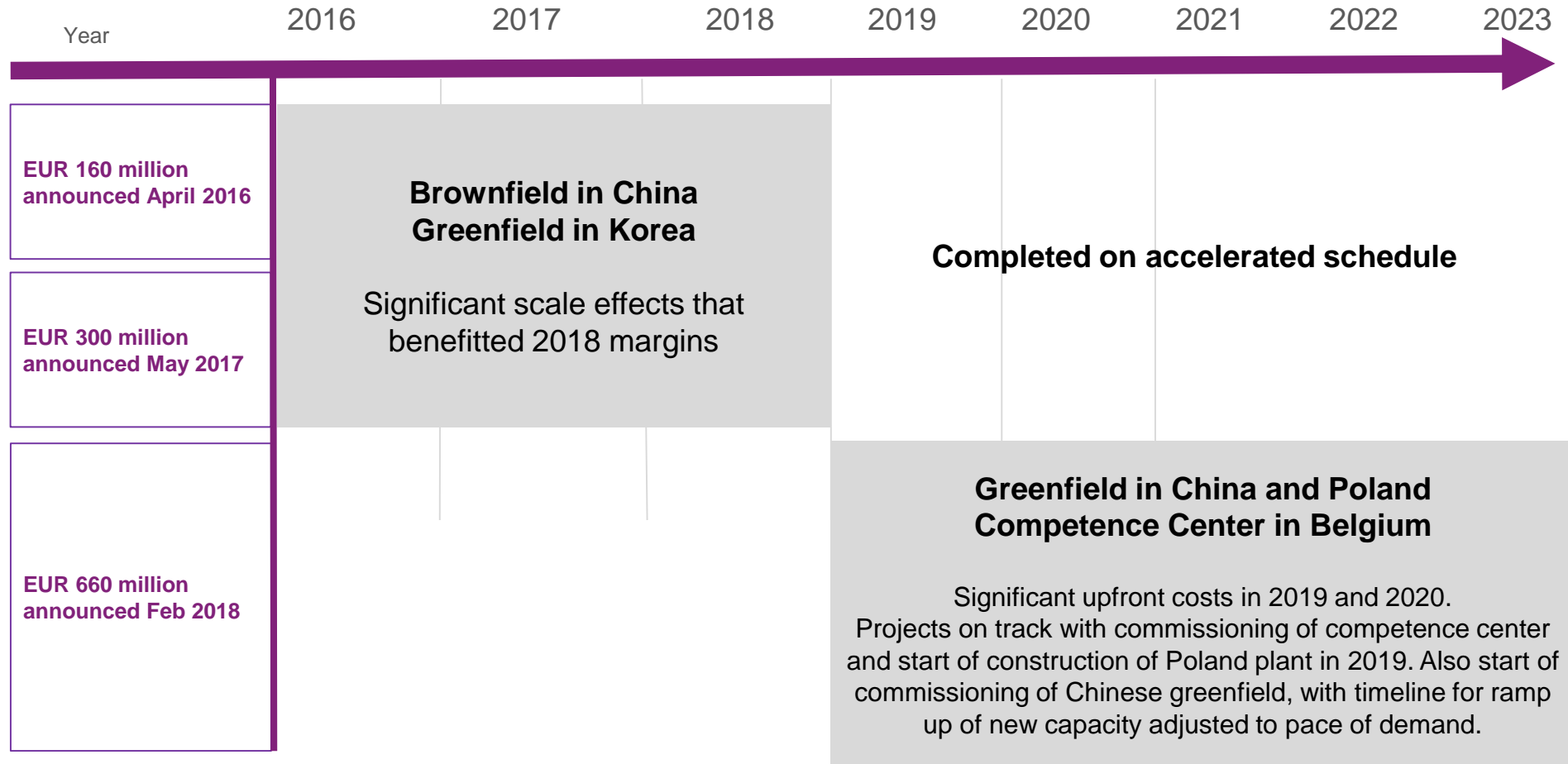


Process
technology

Rechargeable Battery Materials

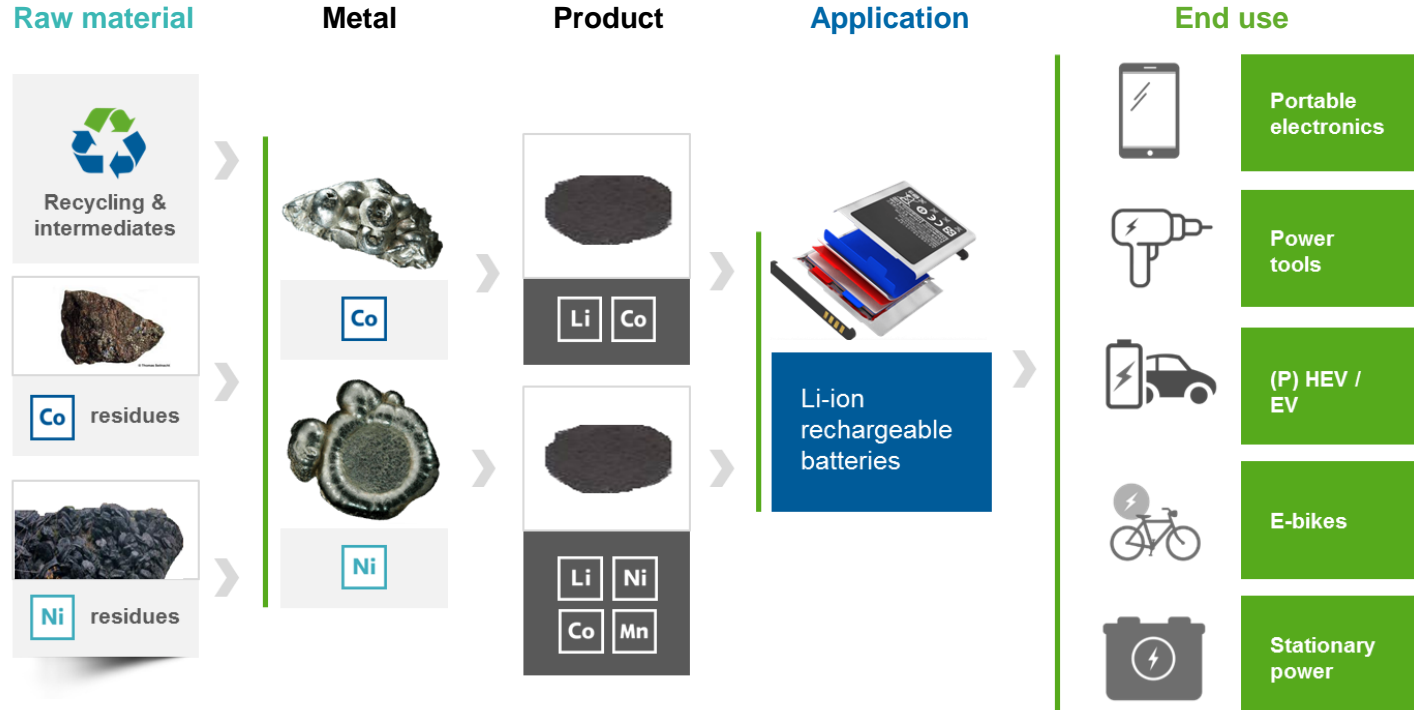


Expansion projects timeline



Access to raw materials

Unique integration in the value chain



Umicore

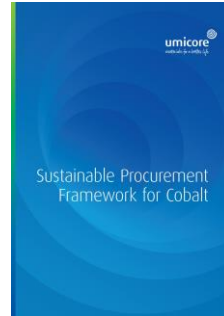
- Flexibility in supply feed, high speed to market and responsiveness to customer needs

Access to raw materials

Battery recycling as critical additional source of supply



- Umicore is fully aligned with OECD Due Diligence for Responsible Supply Chains of Minerals from Conflict-Affected and High-Risk Areas
- Certified clean and ethical supply to our customers
- Urban mining indispensable for global electrification of transportation
- Proven industrial capabilities for all types and formats of Li-ion batteries
- Patented recycling technology
- High recovery rates for lithium, cobalt, nickel and copper
- Highest environmental standards



Umicore Flexibility in supply feed, high speed to market and responsiveness to customer needs



E&ST 2019 market context

Slowdown in global EV demand and low cobalt price

Global EV market up 7.7% in 2019 compared to 62% in 2018, reflecting abrupt decline in EV sales in China in H2 due to subsidy cuts

LCO in consumer electronics: supply chain reducing excess inventories

ESS in Korea: subdued demand due to safety incidents

Depressed cobalt price (-56% vs 2018) and inflow of cheaper unethically sourced artisanal cobalt



E&ST 2019 performance



Revenues -5%; REBIT -29% reflecting slowdown in demand and low cobalt price

Rechargeable Battery Materials

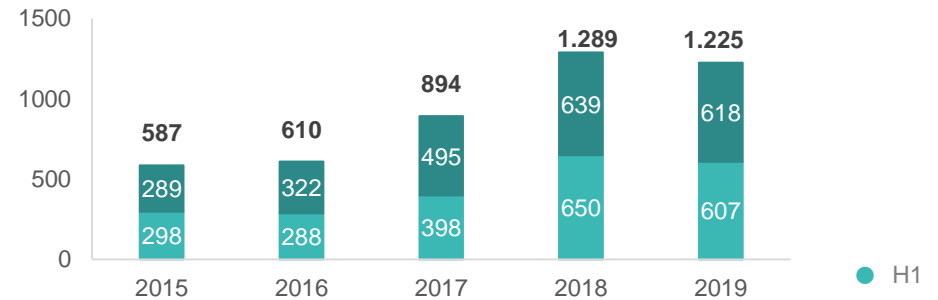
- Lower sales for portable electronics and ESS
- Higher sales for EVs, in line with global EV market
- Recycling and refining activities hit by low cobalt price
- Higher D&A, higher R&D and upfront costs for greenfield expansions

Cobalt & Specialty Materials

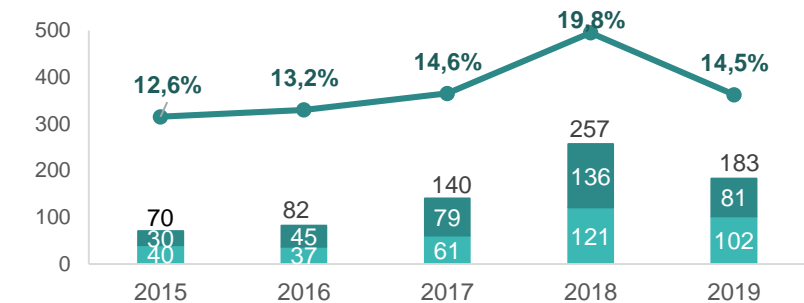
- Impacted by low cobalt price and inflow of cheaper unethically sourced artisanal cobalt
- Customers reducing excess inventories

Revenues for **Electroplating** slightly up; stable revenues for **Electro-Optic Materials**

REVENUES



REBIT



million €



E&ST – major milestones in 2019

Capacity expansions

- Commissioning greenfield plant in China
- Start of construction greenfield plant in Poland

Commissioning of new **Process Competence Center** (Olen, Belgium)

Acquisition of cobalt refinery and cathode precursor activities in Kokkola, Finland

Multi-year cathode materials supply agreements with leading EV battery makers, LG Chem and Samsung SDI

Conclusion of **long-term supply partnerships for sustainable cobalt**

Support for long-term growth

- Obtained support within framework of IPCEI* for batteries
- Global Battery Alliance initiative

Impressions



EV car battery pack



Packaging finished product



RBM Cheonan production sites, Korea



Business Group Overview

Recycling



Recycling

Precious Metals Refining

Operates the world's most sophisticated precious metals recycling facility and recovers 17 precious and other valuable metals from complex waste streams.



Precious Metals Management

Services for hedging, leasing, purchasing and sale of precious and platinum group metals to internal and external customers



Jewelry & Industrial Metals

Supplier of precious metals based products for jewelry and industrial applications, recycler of jewellery and production scrap and producer of platinum-based equipment for the glass and chemical industries.





Precious Metal Refining

Largest and most complex precious metals recycling operation in the world



Processes more than 200 different types of raw materials

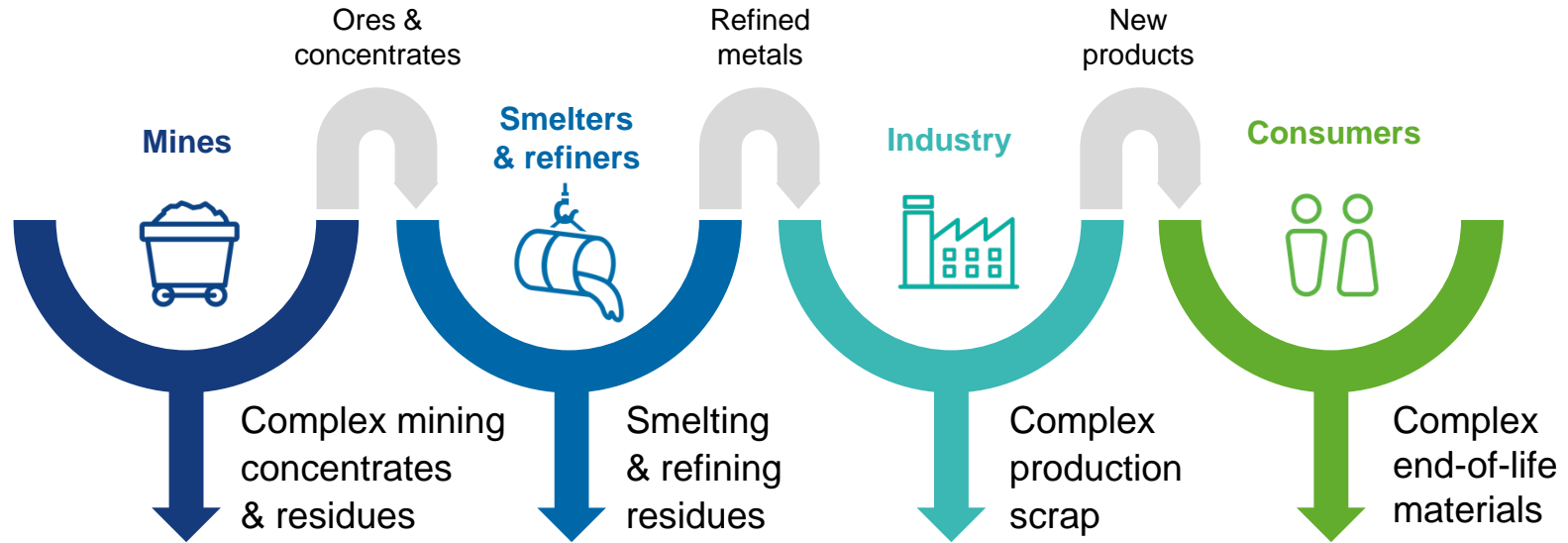


Leading refiner of 17 different metals

World class environmental and quality standards



The value chain of metals



Industrial by-products

End-of life materials



Revenue Drivers



Main revenue drivers

Treatment & refining charges

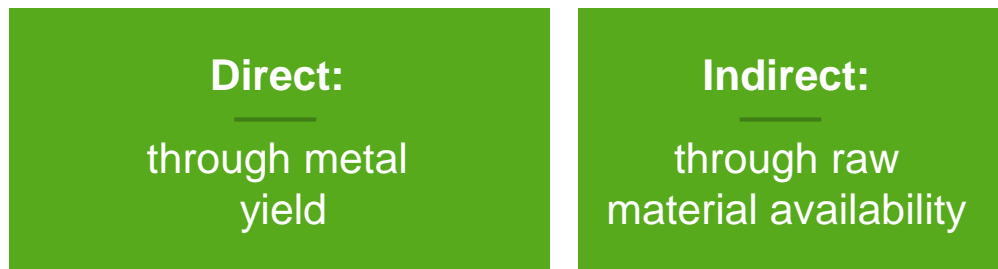
Treatment charges are determined, among other criteria, by the complexity of the materials

Metal yield

Umicore assumes the risk of recovery above or under the contractually agreed recovery rate



Metal price exposure



Ag	Au							
		Pt	Ir	Rh				
		Ru	Pd					
					In	Sb	As	
					Te	Sn	Pb	
					Bi	Cu		
					Ni	Se		

Managing the effects of metal price movements on earnings

Systematic hedging of transactional exposure

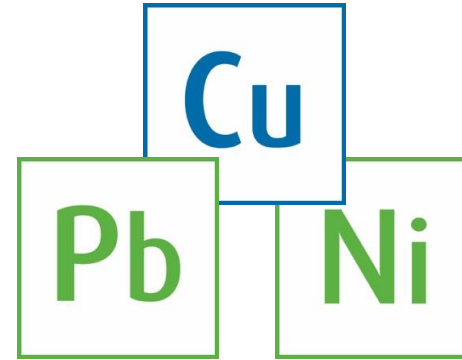
Depending on market conditions hedging of (part of) structural metal price exposure through contractual arrangements

Impact on working capital is mitigated by toll-refining – metals remain property of the supplier during treatment



Umicore has unique technology

Umicore is unique due to its proprietary complex flowsheet that combines three metallurgical streams



This enables

Flexibility to treat a broad range of input materials

Recovery & valorization of the most metals

Ability to optimize feed and therefore profitability

Scope to broaden to new types of materials in future

- Umicore technology guarantees **environmentally friendly** processing, a high yield and a more competitive cost
- Umicore introduced its unique Ultra High Temperature technology for Battery Recycling more than 5 years ago



Recycling 2019 market context

Supportive metal prices and favorable supply environment



Supportive metal price environment

Higher prices for certain precious and platinum group metals, particularly in the second half of 2019

Favorable supply environment with increased availability of complex end-of-life materials

Growing proportion of more complex and higher metal loaded spent automotive catalysts

Higher availability of printed circuit boards due to Green Fence in China



Recycling 2019 performance

Revenues +9%; REBIT +40% reflecting favorable supply mix, higher metal prices and optimization of input mix



Precious Metals Recycling

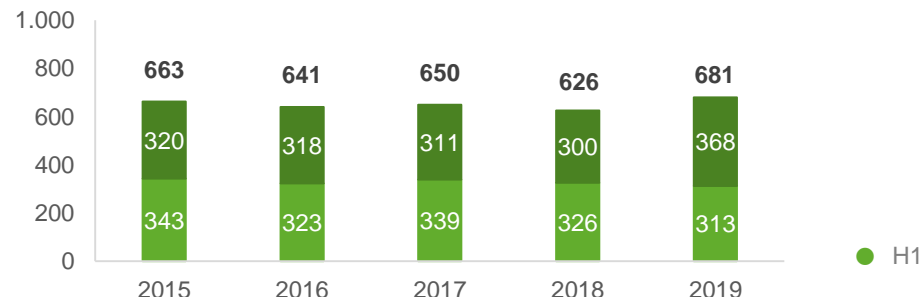
Higher availability of spent autocats and printed circuit boards

Higher metal prices

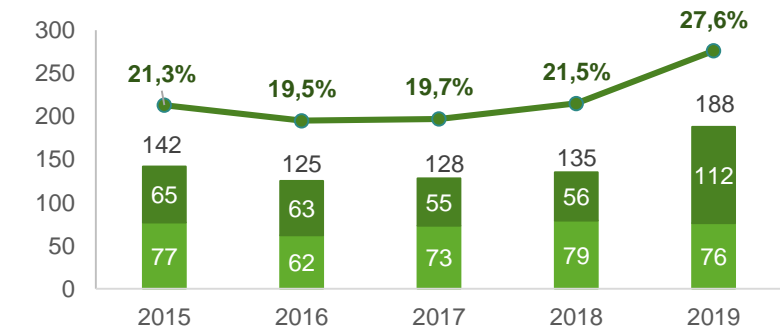
Optimization of input mix allowed to offset most of the volume shortfall due to extended maintenance shutdown and fire incident in July

Stable revenues for **Jewelry & Industrial Metals**; substantial earnings contribution from **Precious Metals Management**

REVENUES



REBIT



million €



Recycling – major milestones in 2019

Completion of multi-year **expansion** program at Hoboken plant

Upgrade of key equipment during extended shutdown

Investments to sustain and improve the **environmental performance** of the plant



Impressions



PMR Hoboken recycling plant, Belgium



Financials FY 2019

Key figures 2019

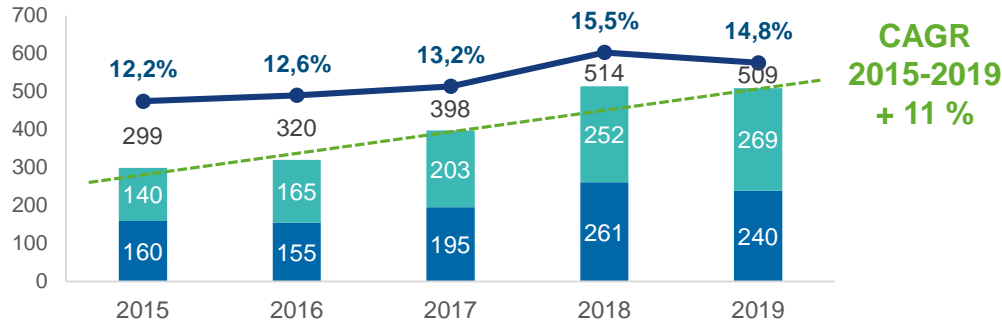
<p>REVENUES +3% to € 3.4 bn</p> <p>Strong growth in Catalysis (+7%) and Recycling (+9%) partly offset by decline in E&ST (-5%)</p>	<p>REBIT € 509 m, close to 2018 record level</p> <p>Balanced contribution from the three business groups Absorbs strong increase in D&A</p>	<p>Free Operating Cash Flow € -39 m (€ -406 m in FY 18)</p> <p>Net debt € 1,443m Net debt / REBITDA 1.9x</p>
<p>RECURRING NET PROFIT (Group share) -5% to € 312 m</p> <p>Recurring EPS of € 1.30 Proposed gross annual dividend of € 0.75</p>	<p>REBITDA +5 % to € 753* m</p> <p>Stable group REBITDA margin of 22.1%* Margin increase in Catalysis and Recycling</p>	<p>CAPEX € 553 m</p> <p>ROCE 12.6% reflecting intense growth investments</p>

Strong performance in a persistently difficult market context

* € 17 m impact from IFRS 16, excluding this, REBITDA is € 736 m and REBITDA margin is 21.6%

Robust performance in challenging market context

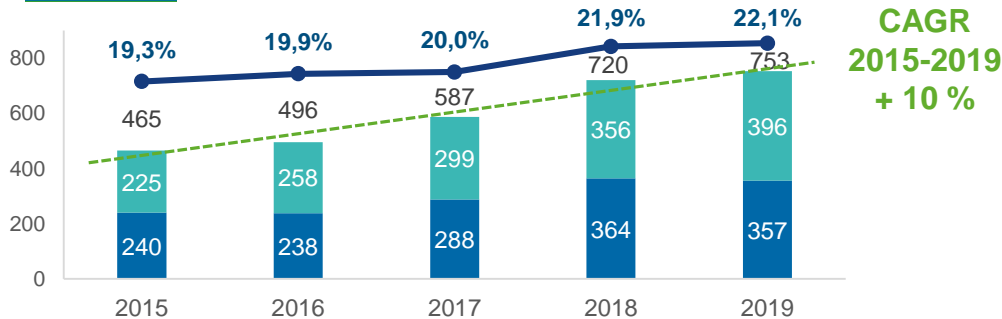
REBIT & REBIT margin



Recurring EBIT at € 509 m, close to record level of 2018

Double digit growth in Recycling and Catalysis offset by decrease in E&ST
 Increase in D&A and costs related to greenfield investments in battery materials

REBITDA & REBITDA margin

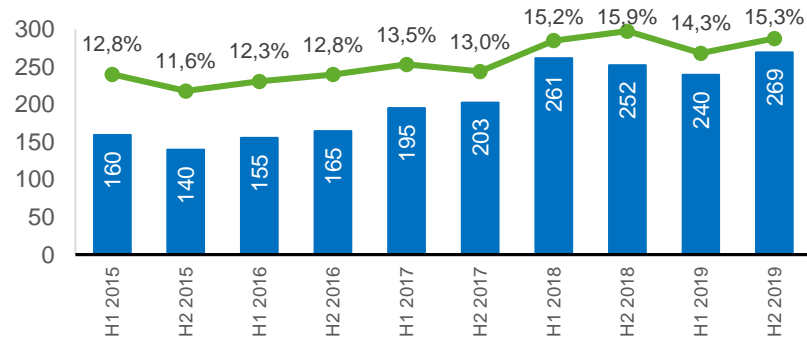


Recurring EBITDA growth (+ 5%) to new high of € 753 m

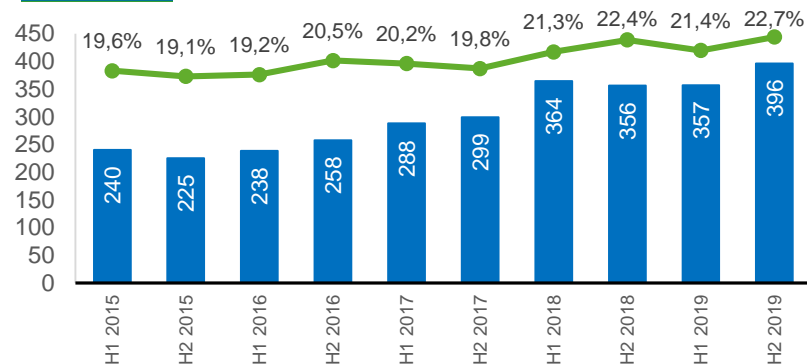
Robust group margin despite headwinds
 Adoption of IFRS 16 lease standard effect of € 17 m

Strong sequential earnings growth in second half

REBIT & REBIT margin



REBITDA & REBITDA margin



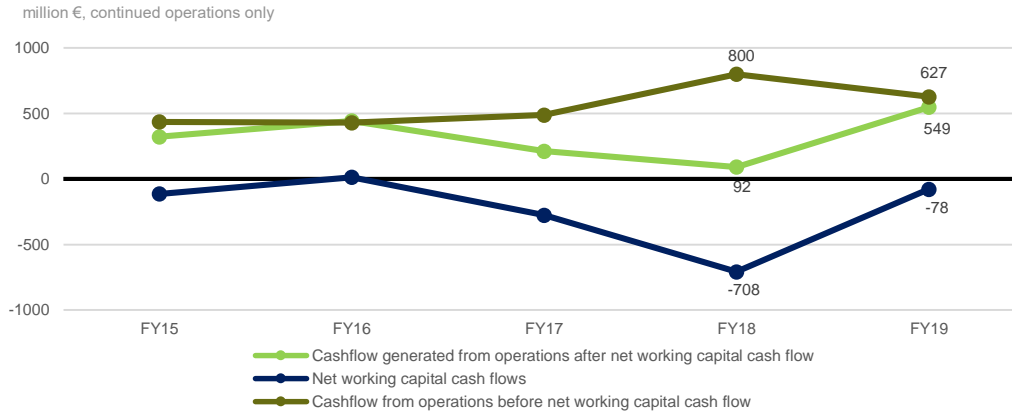
Strong H2 19 performance after more challenging H1 19

Strong sequential and year-on-year growth in H2
Mostly driven by Recycling (higher metal prices in H2 19 and reflecting impact of extended shutdown in H1 19 and fire incident in H2 18)

Also higher H2 19 performance in Catalysis, but lower in E&ST

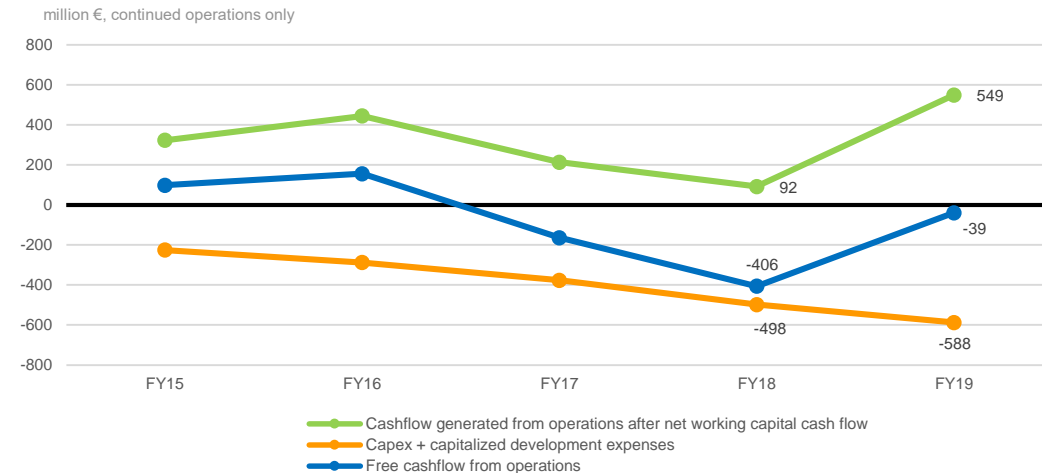
	FY 19 vs FY18	H2 19 vs H2 18	H2 19 vs H1 19
Revenues	+ 3 %	+ 9 %	+ 6 %
Recurring EBIT	- 1 %	+ 7 %	+ 12 %
Recurring EBITDA	+ 5 %	+ 11 %	+ 11 %

Improvement in free operating cash flows



Cash flow from operations highest in last five years at € 549 m

Includes a € 78 m increase in working capital requirements, mostly driven by impact of higher PGM prices in Catalysis



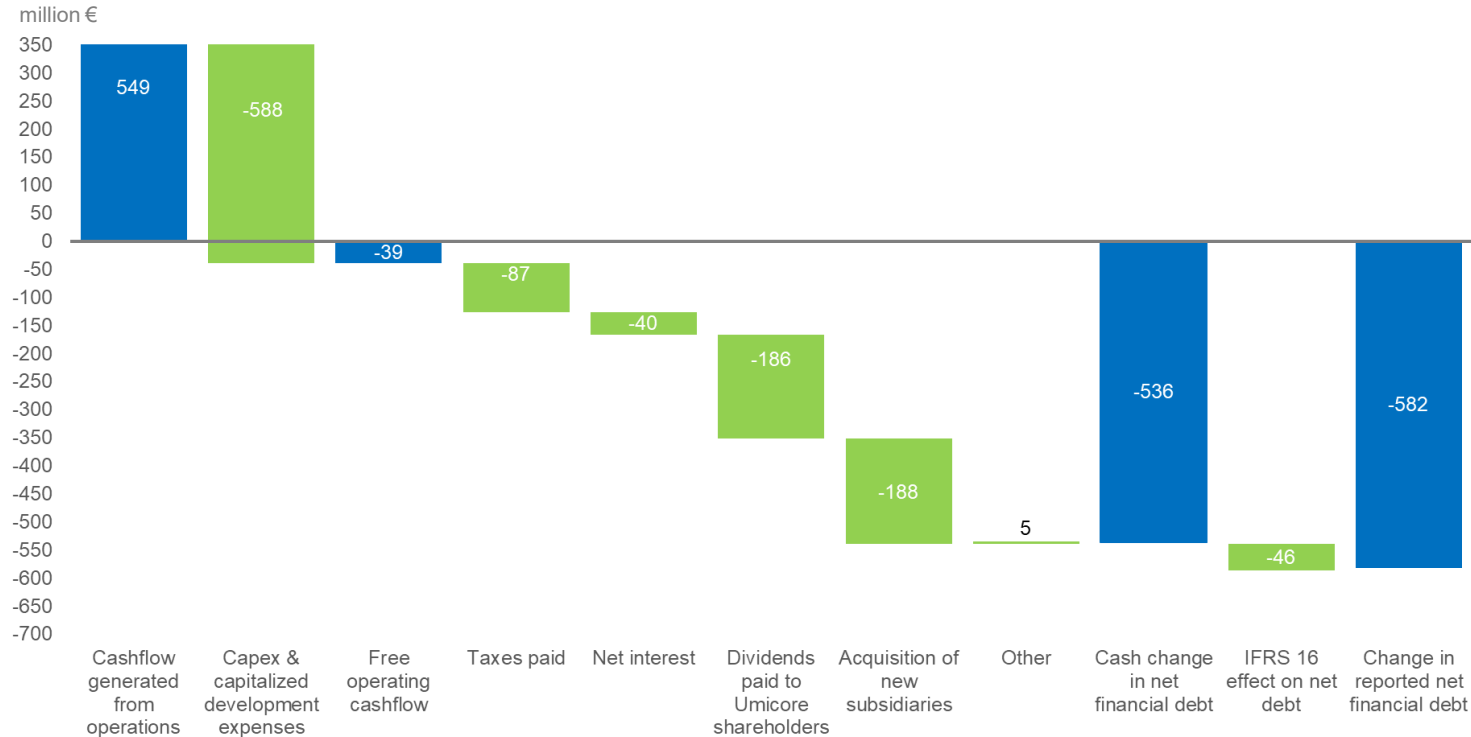
Improved free cash flow from operations, close to break even (€ -39 m) despite higher growth investments

Capex of € 553 m, 2/3rd in E&ST

Complemented by higher capitalized development expenses of € 35 m

*Free cashflow from operations = cashflow generated from operations – capex & capitalized development expenses

Net cash flow bridge



Free operating cashflow of € - 39 m
(€ - 406 m in 2018)

€ 188 m cash out linked to the
Kokkola acquisition

Increased dividend payout to
Umicore shareholders
(€ 186 m vs € 175 m in 2018)

Increase in net financial debt of €
582 m, including non-cash increase
of € 46 m from IFRS 16 adoption

Further extension of funding base

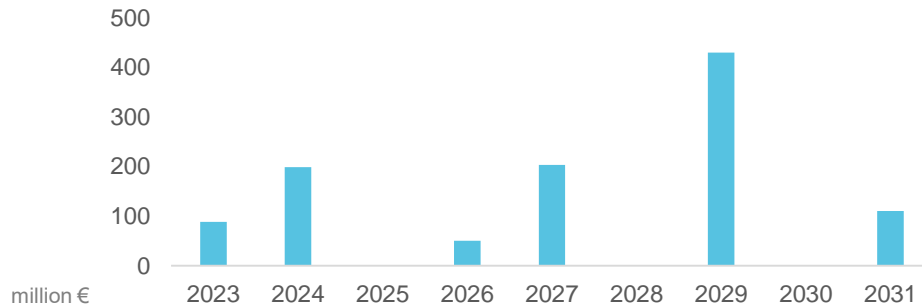
Issuance of € 390 m US private placement notes,
complementing existing committed credit facilities:

Historically low, fixed interest rates

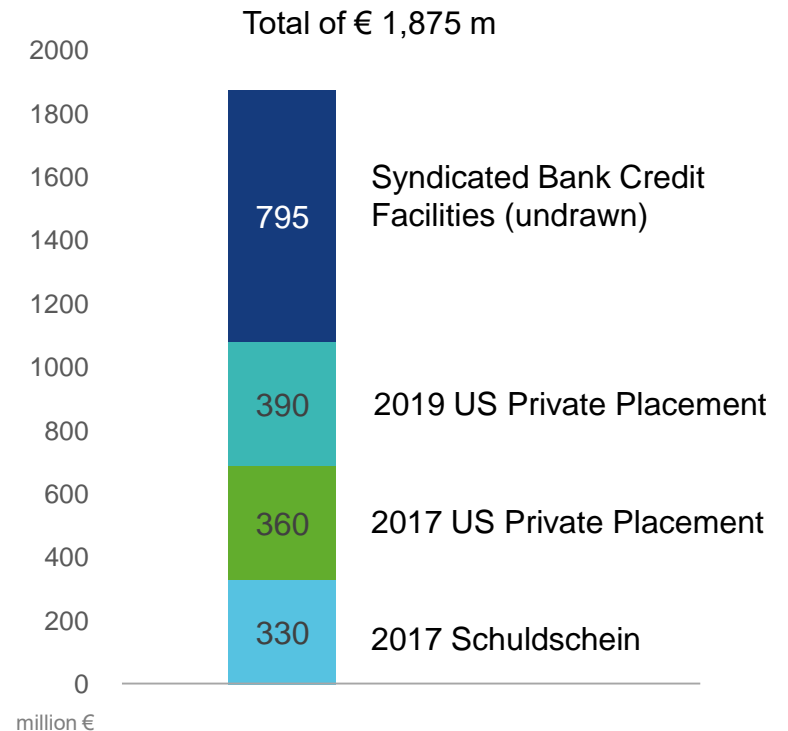
Maturities of 7, 10 and 12 years

Total of committed medium and long term debt facilities
amounting to € 1,875 million.

Debt maturity profile



Committed medium & long term facilities





2020 Outlook

Outlook 2020

As communicated in April 2019, Umicore expects to grow revenues and earnings in 2020 despite a deterioration in the global macro-economic environment since then, particularly in the automotive sector. This growth outlook assumes that the recent coronavirus outbreak will not result in a protracted or material effect on the economy in 2020.

While there are no signs of an imminent recovery in the automotive market, the business group Catalysis is expected to continue to benefit from its strong market position in gasoline catalyst applications and a further penetration of higher value gasoline particulate filters in Europe and China.

Despite the expectation of subdued EV sales in China, Energy & Surface Technologies anticipates to benefit from higher sales of cathode materials for EVs in 2020, as well as the consolidation of the recently acquired activities in Kokkola, Finland. At the same time, the business group's performance will reflect higher fixed costs related to the ongoing investments in capacity and innovation.

Performance in Recycling is expected to benefit from a combination of higher metal prices, some of which were hedged in the course of 2019, a sustained favorable supply environment and increased availability of the Hoboken smelter.



Key Investment Considerations

Key investment considerations

- **Well positioned to take advantage of accelerating global megatrends** : more stringent emission control, electrification of the automobile and resource scarcity
 - Global presence and unique competences acquired over many years;
 - A market leader in most key product markets and particularly in automotive catalysts, cathode materials and complex polymetallic recycling;
 - Strong organic growth prospects supported by legislation
- **Well-diversified business profile** with broad product, end-market and customer base driven by a common theme of sustainability
- **Strong track record of and commitment to innovation to maintain competitive lead** (R&D spending of close to 6 % of revenues in 2019)
- **Robust financial performance** across cycles and margin focus with recent investments yielding returns
- **Strong balance sheet** with recent substantial growth investments
- **Experienced board, management team, and clear governance principles**

Forward-looking statements

This presentation contains forward-looking information that involves risks and uncertainties, including statements about Umicore's plans, objectives, expectations and intentions.

Readers are cautioned that forward-looking statements include known and unknown risks and are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond the control of Umicore.

Should one or more of these risks, uncertainties or contingencies materialize, or should any underlying assumptions prove incorrect, actual results could vary materially from those anticipated, expected, estimated or projected.

As a result, neither Umicore nor any other person assumes any responsibility for the accuracy of these forward-looking statements.



umicore[®]

materials for a better life