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

Full Electric Vehicle
Umicore provides: Battery cathode materials

Plug-In Hybrid Electric Vehicle
Umicore provides: Battery cathode materials and emission control catalysts

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
- application know-how
- chemistry material science metallurgy
- recycling
- material solutions

Supportive megatrends & legislation
- more stringent emission control
- electrification of the automobile
- resource scarcity

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: €3.4 bn
- Adj. EBITDA: €753 m
- ROCE: 12.6%
- R&D: 6% of revenues
- Clean mobility and Recycling: 75% of revenues

Revenues* by geography:
- Europe: 40%
- North America: 14%
- South America: 4%
- Asia-Pacific: 39%
- Africa: 3%

* 2019 data
We deliver on our Horizon 2020 strategy

- Clear leadership in clean mobility materials and recycling
- Rebalanced the portfolio & earnings contributions
- Doubled the size of the business in terms of earnings
- 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

* 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
- 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
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

- 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
H1 20 net financial debt of € 1,349 m, slightly below the level of end 2019

Corresponds to robust credit ratios:
- Net debt / LTM Adjusted EBITDA ratio of 1.75x
- Net gearing ratio of 34%

Further extended and diversified strong liquidity base in June 2020:
- € 125 m 8-year EIB loan
- € 500 m 5-year convertible bond
- € 1.2 bn cash on balance sheet at 30 June in addition to appr. € 1 bn of committed undrawn credit lines

Maintaining a healthy capital structure
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.
We develop technologies which allow our customers to meet automotive emission legislation at the lowest Total Cost of Ownership.
Automotive Catalysts Production Footprint

17 plants in 14 countries, 9 R&D / tech. centers in 7 countries
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
COVID-19 outbreak: impact on auto-industry

H1 2020 YoY evolution of passenger car production across all powertrains (source: IHS & Umicore - 20/07/2020)

China

Europe

North America

Global market

H1 2020 global car production down 35% YoY
Automotive Catalysts
Widespread car OEM production shutdowns and car sales plunging
Severe impact on revenues and volumes
Further outperformance of LDV market in China
HDD less down than market given higher demand for China V technologies

Precious Metals Chemistry
Revenues down due to COVID-19 impact on automotive industry
Continued strong demand for pharmaceutical ingredients and fuel cell catalysts

Catalysis H1 2020 performance
Revenues -20% and Adj. EBIT -75%; severe impact from COVID-19 and related car OEM production shutdowns
Impressions

Catalyst elements

Test bench

Installation stationary DNox catalyst

Bad-Säckingen plant AC, Germany

Nowa Ruda plant AC, Poland
<table>
<thead>
<tr>
<th>Category</th>
<th>Description</th>
<th>Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rechargeable Battery</td>
<td>A leading cathode material supplier for lithium-ion rechargeable batteries</td>
<td>Ni, Co, Li, Mn</td>
</tr>
<tr>
<td>Materials</td>
<td>used in electrified vehicles and portable electronics.</td>
<td></td>
</tr>
<tr>
<td>Cobalt &amp; Specialty</td>
<td>Refines and recycles cobalt and nickel; produces cobalt and nickel specialty</td>
<td>Re, Co, Ni, W,</td>
</tr>
<tr>
<td>Materials</td>
<td>chemicals for a wide range of applications (incl. tires, catalysts, surface</td>
<td>Ta, Cu</td>
</tr>
<tr>
<td></td>
<td>treatment). Also includes battery recycling.</td>
<td></td>
</tr>
<tr>
<td>Electroplating</td>
<td>Supplies precious metal electrolytes &amp; processes for technical, functional</td>
<td>Au, Ag, Rh, Ru,</td>
</tr>
<tr>
<td></td>
<td>and decorative applications.</td>
<td>Pd, Pt</td>
</tr>
<tr>
<td>Electro-Optic Materials</td>
<td>Supplier of products for thermal imaging as well as wafers for space solar</td>
<td>Ge, Sb, Se</td>
</tr>
<tr>
<td></td>
<td>cells and high brightness LEDs, chemicals for fiber optics and thin film</td>
<td></td>
</tr>
<tr>
<td></td>
<td>applications.</td>
<td></td>
</tr>
</tbody>
</table>
Rechargeable Battery Materials: business model

Product innovation based on strong application know-how

Established industrial footprint close to the customer

Strong industrialization capabilities building on historical Umicore key competences

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

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

1. **Product Technology**
   - Wide spectrum of cathode material technologies
     - Ability to scale up fast
     - Cost-efficient processes
     - Industrial capabilities
   - Best in class product quality on 20+ specs: continuous fine-tuning at lab, pilot and industrial scale

2. **Process Technology**

3. **Supply**
   - Raw materials
     - Feed flexibility
     - Battery recycling
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
Rechargeable Battery Materials

Expansion projects timeline

<table>
<thead>
<tr>
<th>Year</th>
<th>EUR 160 million announced April 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td>EUR 300 million announced May 2017</td>
</tr>
<tr>
<td>2018</td>
<td>EUR 660 million announced Feb 2018</td>
</tr>
<tr>
<td>2019</td>
<td>Completed on accelerated schedule</td>
</tr>
<tr>
<td>2020</td>
<td>Greenfield in China and Poland</td>
</tr>
<tr>
<td>2021</td>
<td>Competence Center in Belgium</td>
</tr>
<tr>
<td>2022</td>
<td></td>
</tr>
<tr>
<td>2023</td>
<td></td>
</tr>
</tbody>
</table>

Brownfield in China
Greenfield in Korea

Significant scale effects that benefitted 2018 margins

Greenfield in China and Poland Competence Center in Belgium

Commissioning of competence center in 2019.
China greenfield: ramp up of new capacity adjusted to pace of demand.
Poland greenfield plant under construction, commissioning expected in H1 21.
### Access to raw materials

**Unique integration in the value chain**

<table>
<thead>
<tr>
<th>Raw material</th>
<th>Metal</th>
<th>Product</th>
<th>Application</th>
<th>End use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recycling &amp; intermediates</td>
<td>Co residues</td>
<td>Ni residues</td>
<td>Li-ion rechargeable batteries</td>
<td>Portable electronics</td>
</tr>
<tr>
<td>Ni residues</td>
<td></td>
<td></td>
<td></td>
<td>Power tools</td>
</tr>
</tbody>
</table>

**Umicore**

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

Supply

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

* Important Projects of Common European Interest
COVID-19 outbreak: impact on EV sales

H1 2020 YoY evolution of BEV and pHEV car sales (source: EV Volumes)

China: -50% in January, -62% in February, -49% in March, -21% in April, -27% in May, -54%* in June.

Europe:
- January: +117%, February: +122%, March: +40%, April: +20%, May: +49%.
- Average H2 2018: 128,000

Global market:
- January: -7%, February: +17%, March: -14%, April: -26%, May: -21%, June: -31%.

Average H2 2018: 36,000

*Pre-buying in June 2019 due to lower subsidy regime as of July 2019.
Rechargeable Battery Materials
Overall volumes of cathode materials lower YoY and materially lower than expected due to COVID-19
Higher fixed costs related to recent and ongoing expansions
Significant negative operating leverage
Positive contribution of Kokkola activities acquired in Dec. ’19
Construction of Nysa plant delayed due to COVID-19 restrictions; commissioning planned in H1 2021

Cobalt & Specialty Materials
Most end-markets impacted by COVID-19
Lower cobalt and nickel prices impacted refining & recycling activities

Electroplating recorded slightly higher revenues; revenues in Electro-Optic Materials were roughly stable
Impressions

EV car battery pack

Packaging finished product

RBM Cheonan production sites, Korea
Business Group Overview

Recycling
<table>
<thead>
<tr>
<th>Precious Metals Refining</th>
<th>Operates the world’s most sophisticated precious metals recycling facility and recovers 17 precious and other valuable metals from complex waste streams.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precious Metals Management</td>
<td>Services for hedging, leasing, purchasing and sale of precious and platinum group metals to internal and external customers</td>
</tr>
<tr>
<td>Jewelry &amp; Industrial Metals</td>
<td>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.</td>
</tr>
</tbody>
</table>
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

- Mines: Ores & concentrates
- Complex mining concentrates & residues
- Smelters & refiners: Smelting & refining residues
- Refined metals
- Industry: Complex production scrap
- New products
- Consumers: Complex end-of-life materials

Industrial by-products

End-of life materials
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

Direct: through metal yield

Indirect: through raw material availability

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

- 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

This enables

- 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 – 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
Recycling H1 2020 performance

Revenues +40%; Adj. EBIT +150%; increased volumes, higher metal prices and favorable supply mix

Precious Metals Recycling

Higher processed volumes (vs. extended maintenance in H1 19)
Higher metal prices
Robust supply conditions and optimization of input mix

Increased Jewelry & Industrial Metals revenues
Substantial earnings contribution from Precious Metals Management

REVENUES

million €

H1 2016 323
H2 2016 318
H1 2017 339
H2 2017 311
H1 2018 327
H2 2018 300
H1 2019 313
H2 2019 388
H1 2020 440

Adjusted EBIT

million €

H1 2016 62
H2 2016 63
H1 2017 73
H2 2017 55
H1 2018 79
H2 2018 56
H1 2019 76
H2 2019 112
H1 2020 191
Impressions

PMR Hoboken recycling plant, Belgium
H1 2020 financial review
### Key figures H1 2020

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>REVENUES</strong></td>
<td>€ 1.6 bn</td>
</tr>
<tr>
<td></td>
<td>-4% YoY</td>
</tr>
<tr>
<td><strong>Adjusted NET PROFIT</strong></td>
<td>€ 148 m</td>
</tr>
<tr>
<td></td>
<td>Adjusted EPS € 0.62</td>
</tr>
<tr>
<td></td>
<td>Interim dividend of € 0.25 per share</td>
</tr>
<tr>
<td><strong>Adjusted EBIT</strong></td>
<td>€ 243 m</td>
</tr>
<tr>
<td></td>
<td>Stable YoY</td>
</tr>
<tr>
<td><strong>Adjusted EBITDA</strong></td>
<td>€ 376 m</td>
</tr>
<tr>
<td></td>
<td>+5% YoY</td>
</tr>
<tr>
<td><strong>Free Operating Cash Flow</strong></td>
<td>€ 108 m</td>
</tr>
<tr>
<td><strong>Net debt at</strong></td>
<td>€ 1,349 m</td>
</tr>
<tr>
<td><strong>Net debt / LTM Adj. EBITDA</strong></td>
<td>1.75x</td>
</tr>
<tr>
<td><strong>CAPEX</strong></td>
<td>€ 152 m</td>
</tr>
<tr>
<td><strong>ROCE</strong></td>
<td>10.9%</td>
</tr>
</tbody>
</table>

**Strong performance in Recycling offset COVID-19 impact in Catalysis and E&ST**
Recycling results offset impact of automotive industry downturn on Catalysis and E&ST

Adjusted EBIT at € 243 million, in line with H1 19

- Stellar Adjusted EBIT growth in Recycling offset by decreases in Catalysis and E&ST
- € 16 million higher D&A charges year on year from recent investments & acquisition
- Increased Adjusted EBIT margin, supported by higher Recycling margin

Adjusted EBITDA increasing 5%

- Strong operating cash flow with second highest half year Adjusted EBITDA contribution of recent years
- High Adjusted EBITDA margin further increased in H1 20
Pronounced offsetting operating leverage effects

Negative in Catalysis and E&ST vs positive in Recycling

H1 YoY evolution

Group
- Revenues -4%
- Adj. EBITDA +5%
- Adj. EBIT +1%
Increase in free operating cash flows

Cash flow from operations before changes in working capital up at € 347 million

Increase in cash working capital of € 72 million mostly driven by higher precious metal prices

Cash working capital increase in Catalysis and Recycling, partly offset by decrease in E&ST

Free cash flow from operations up at € 108 million

More than double last year’s number

Capex delayed in view of market context (€ 152 million vs € 241 million in H1 19)
Net cash flow bridge

Free operating cashflow of €108 million translating in similar decrease in reported net financial debt (€94 million) versus start of the year.

Includes €50 million portion of convertible bond accounted for as equity.

Combined cash out related to net interest charges and taxes below level of H1 19.

Benefiting from absence of final 2019 dividend payout.
2020 Group outlook

Solid performance in 2020 despite unprecedented and challenging market context

Umicore expects its full year adjusted EBIT to be in the range of € 465 million to € 490 million with adjusted EBIT in Catalysis and Energy & Surface Technologies well below the level of 2019 and adjusted EBIT in Recycling well above the level of 2019, as previously communicated. This outlook statement is made under the assumption that the ongoing spread of the COVID-19 pandemic, in particular in Europe and North America, will not lead to major new disruptions in operations or market demand.
Based on current market trends, Umicore now expects global car production to be down by approximately 20% for the full year (compared to its previous assumption of a 25% decrease). In this scenario, **Umicore expects adjusted EBIT for Catalysis for the full year of 2020 to be in the range of € 130 million to € 140 million**.

In 2021, the business group is expected to continue to benefit from its strong market position in gasoline LDV applications, particularly in Europe and China, supplemented by the initial impact from China VI legislation for heavy-duty diesel applications and cost savings resulting from the cost reduction measures carried out in 2020.

**Umicore expects adjusted EBIT for Energy & Surface Technologies for the full year 2020 to be in the range of € 70 million to € 75 million.**

For next year we expect sales volumes in cathode materials to benefit from the growing penetration rate of electric vehicles and the launch of new platforms for which Umicore’s materials have been qualified. However, as this business continues to be driven by technology innovation and comes at a high level of fixed costs, it will take more time in the current market context to achieve the desired scale effects. In addition, the unfavourable pricing environment is expected to persist in China due to the excess capacity in the industry.

Considering the planned 4-weeks maintenance shutdown in the Precious Metals Refining business unit, which was completed over the summer, and seasonality effects in Jewelry and Industrial Metals, **Umicore expects adjusted EBIT for Recycling in 2020 to be in the range of € 320 million to € 330 million.**

The business group’s earnings are expected to continue to benefit next year from a favorable supply environment and metal prices hedged at attractive levels while remaining exposed to the price evolution of unhedgeable metals which is difficult to predict.

2020 Segment outlook

Segment outlook provided in Umicore’s press release issued on November 2, 2020
Long-term growth drivers remain intact

**ENERGY & SURFACE TECHNOLOGIES**

- COVID-19 stimuli plans aimed at a ‘green recovery’ in China and Europe
  - China: Extension of NEV subsidy plan from 2020 until end 2022 and confirmation of increased mandatory NEV credit targets for 2021-2023
  - Europe: EU recovery plan predicated on European Green deal, including ambition towards zero-emission mobility. Stimuli packages in several countries (Germany, France, Spain) with subsidies for electrified vehicles

**CATALYSIS**

- Tightening emission norms continue to be on the agenda in key regions, confirming the need for more complex automotive catalyst technologies going forward

**RECYCLING**

- Resource scarcity and complexity of materials
- Path towards a more circular economy
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 ~6% of revenues in 2019)

• Robust financial performance across cycles; focus on margin and 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.