Mobility Transformation

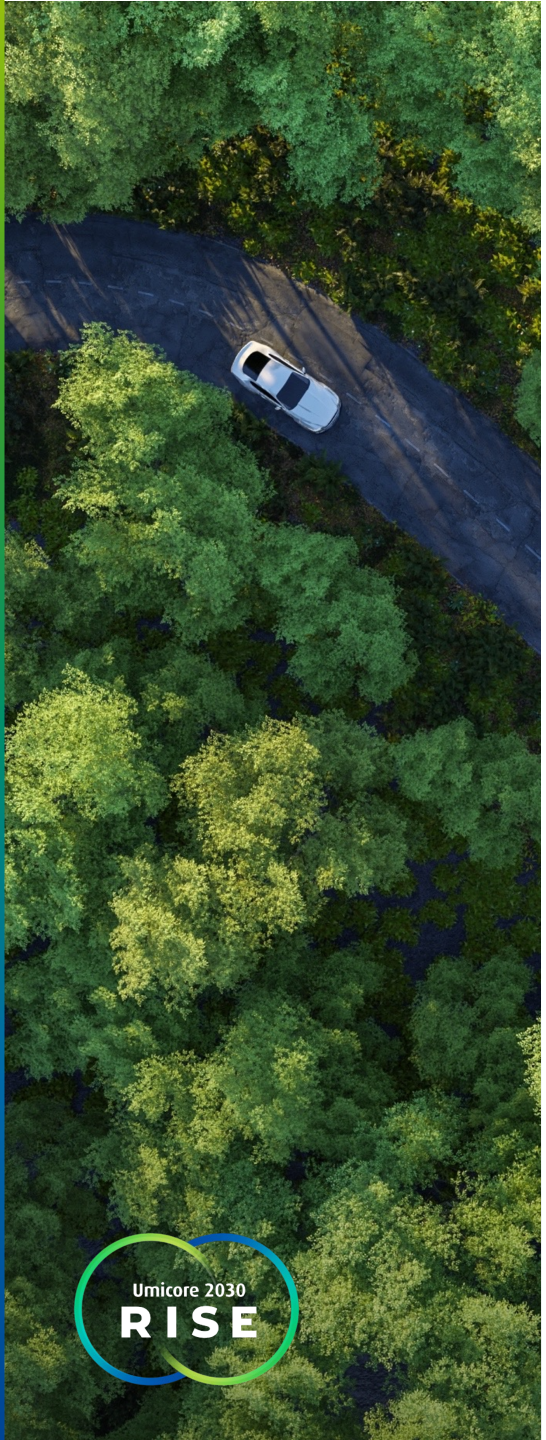
Circularity for critical metals

SPEAKER

Bart Sap

Automotive Catalysts:
Capture peak profitability and maximize value

Umicore 2030 RISE



Agenda

1.
Mobility transformation

ICE gradually declining, but remaining dominant powertrain for LDV and HDV by 2030

2.
Emission control catalyst market

Attractive value to capture the next decade

3.
Umicore

Well positioned to capture peak profitability and maximize value

4.
RISE 2030

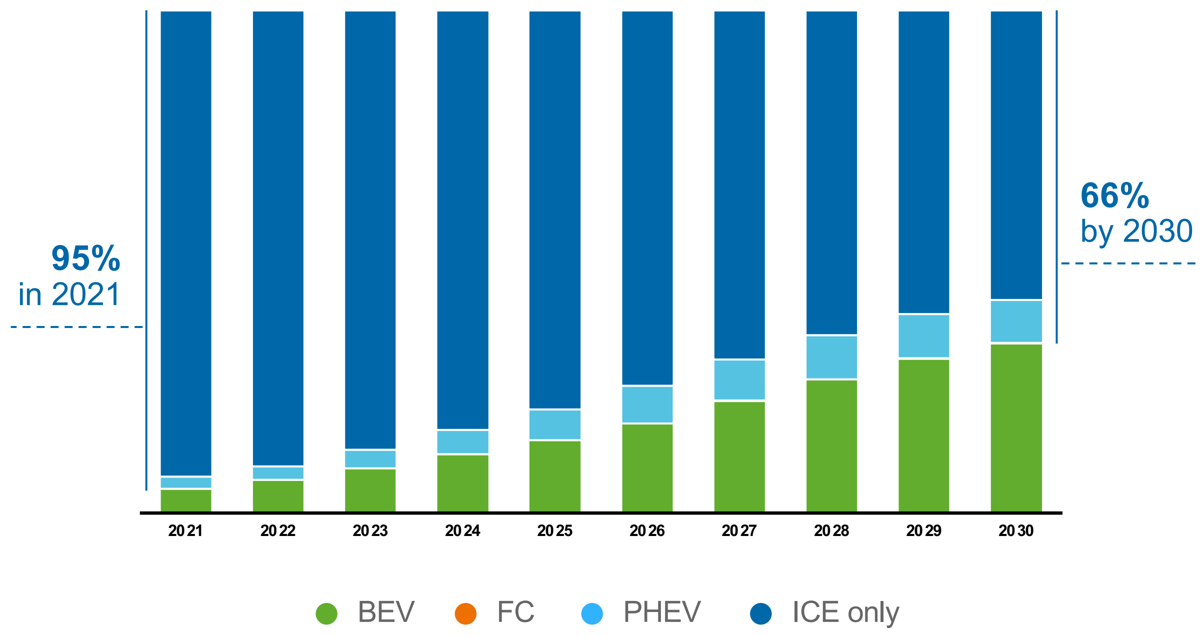
Accelerating mobility transformation

ICE remains dominant powertrain solution in 2030

Light-duty vehicles

Proportion by powertrain in global production

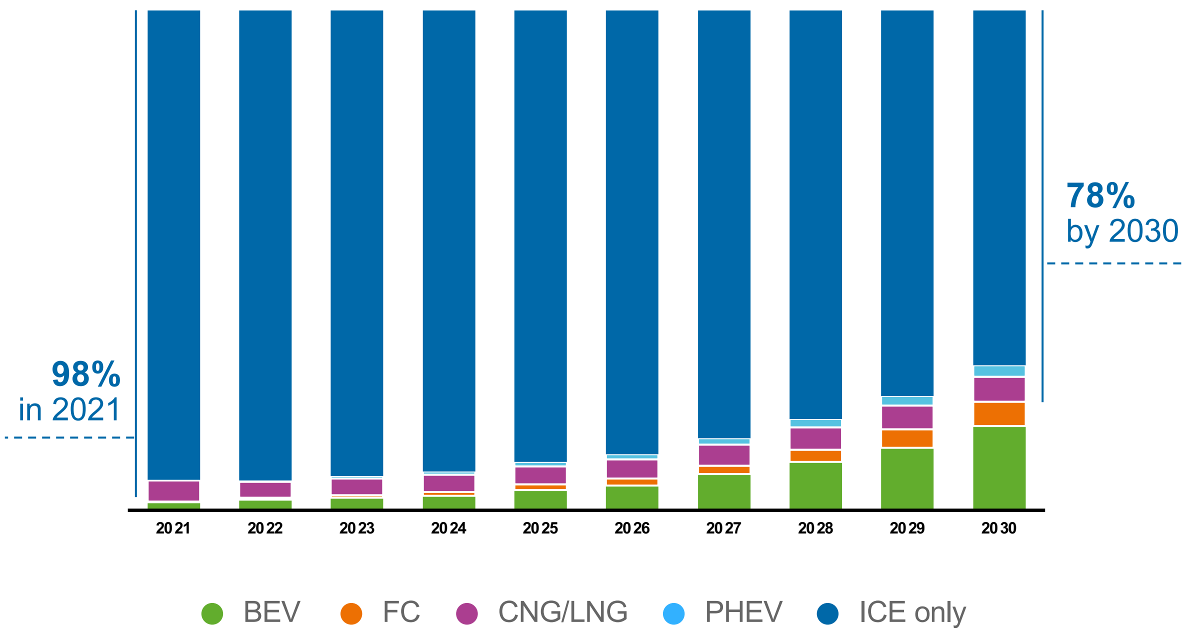
Source: Umicore market model – LDV



Heavy-duty vehicles

Proportion by powertrain in global production

Source: Umicore market model – HDV (incl. medium-duty vehicles, on-road vehicles only)



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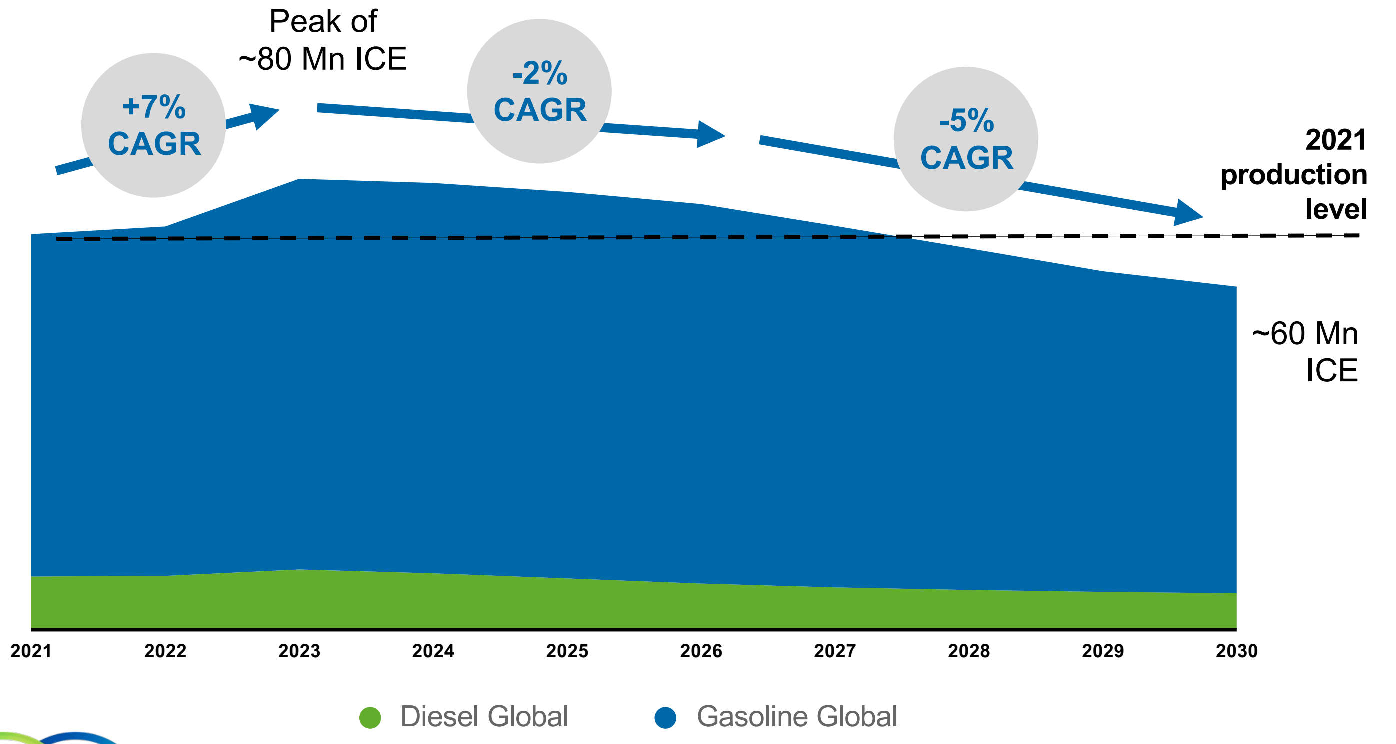
BEV: battery electric vehicle
FC: fuel cell vehicle
CNG/LGN: Compressed natural gas / Liquefied natural gas
PHEV: plug-in (hybrid) vehicle
ICE: internal combustion engine (gasoline/diesel) only

Light-Duty Vehicles

Peak in ICE car production expected in 2023

Light-duty vehicles
Global vehicle production by powertrain



Source: Umicore market model – LDV (ICE + PHEV)

Light-duty ICE production volumes expected to grow until 2023 driven by post-COVID and post-chip shortage rebound as well as growth in emerging economies

Beyond peak, initial slight market reduction, followed by sharper decline as of 2027 due to accelerating BEV penetration

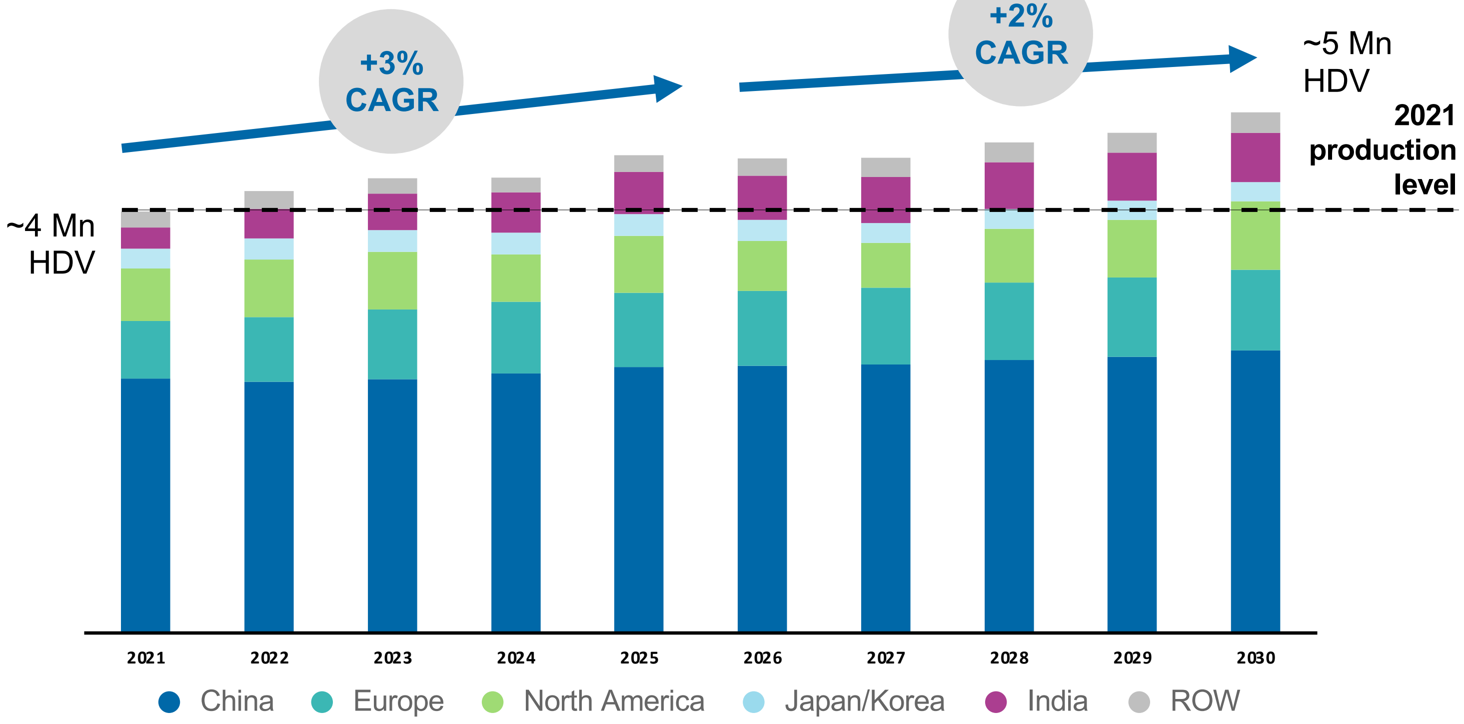
Light-duty diesel dropping faster between 2021 and 2030 especially in Europe

Umicore 2030
RISE

Heavy-Duty Vehicles

Continued growth in ICE HDV towards 2030

Heavy-duty vehicles
Global vehicle production by region

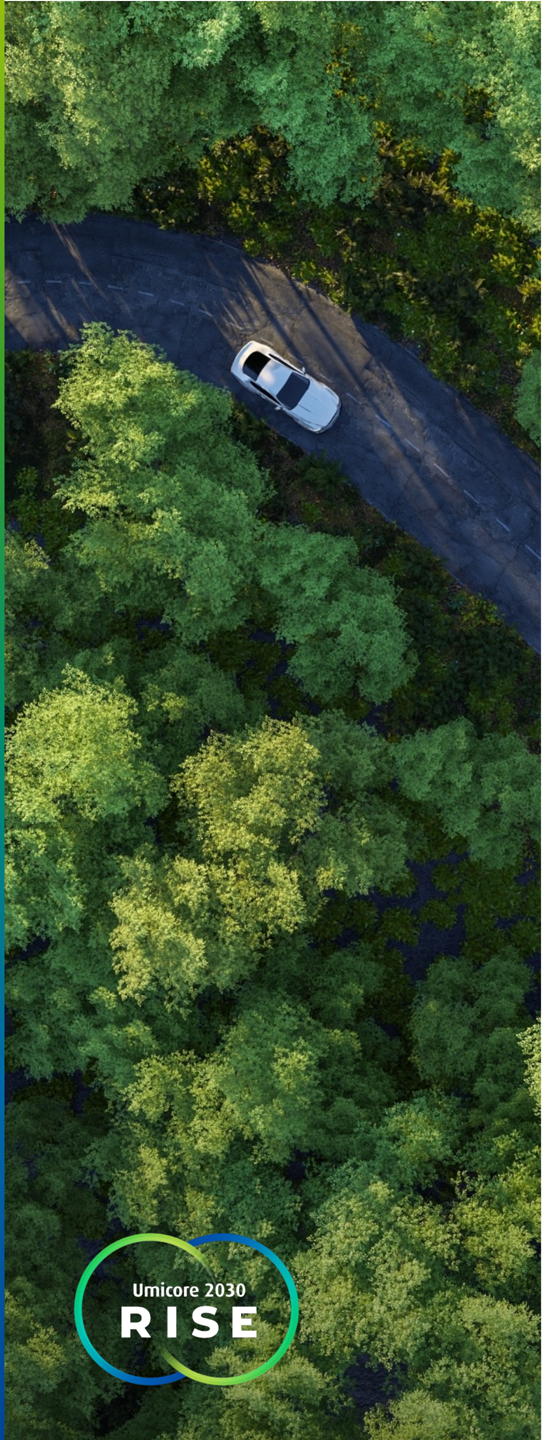


Source: Umicore market model
HDV (emissionized Heavy-Duty and Medium-Duty Vehicles; on-road only)

Production volumes expected to recover and grow over the decade: total addressable emissionized market in 2030 ~25% bigger than in 2021

Lower growth rate from 2026 reflecting high penetration of emissionized ICE vehicles and increasing BEV and FC

Production expected to increase in China and India



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Light-Duty Gasoline Vehicles

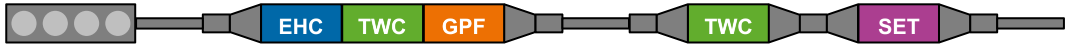
Substantial tightening of emission norms in Europe and China

Ambitious Euro 7 & China 7 emission standards

Expected implementation	**Europe:** earliest 2026, details to be announced July 20, 2022 **China:** earliest in 2027
Impact	Detailed specifications still under discussion; based on proposal, key impact on gasoline engine: • ~ 50% reductions in key criteria pollutant emission limits • More stringent cold start requirements • Tighter particle regulation • Secondary Emission TWC: e.g. ammonia

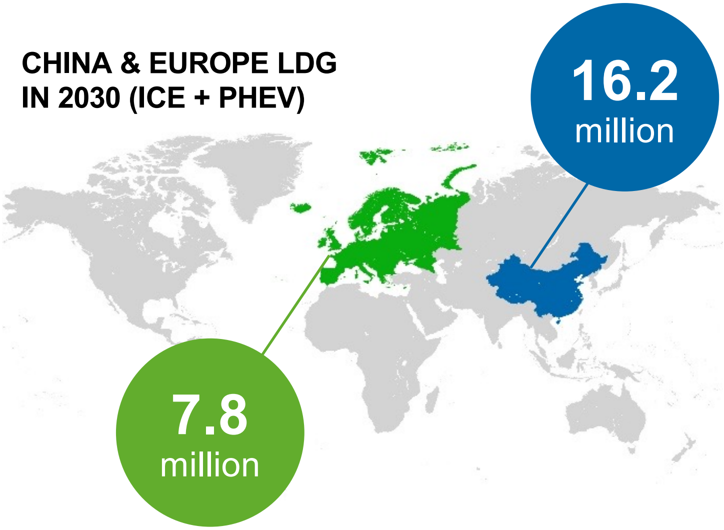
Euro 6 / China 6 system layout

Potential Euro 7 / China 7 system layout



TWC: Three-Way Catalyst; GPF: Gasoline Particulate Filter;
EHC: Electrical Heated Catalyst; SET: Secondary Emission TWC

CHINA & EUROPE LDG IN 2030 (ICE + PHEV)



20%

value uplift vs. current Euro 6 / China 6
(based on proposal)

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Heavy-Duty Vehicles

Upcoming tightening of emission norms in Europe and China

Ambitious Euro VII & China VII emission standards

Expected implementation

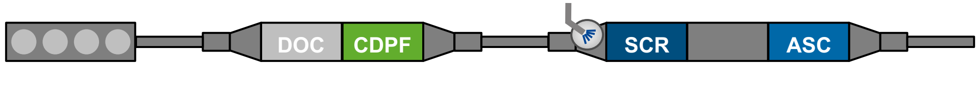
Europe: earliest 2026, details to be announced July 20, 2022
China: earliest in 2027 in Tier 1 cities

Impact

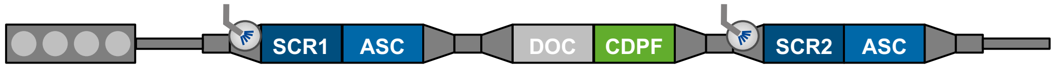
Detailed specifications still under discussion; based on proposal :

- Tighter Particulate PN, NOx and ammonia standards
- Increased cold start requirements
- Extended durability
- Additional pollutants such as N_2O

Euro VI / China VI system layout

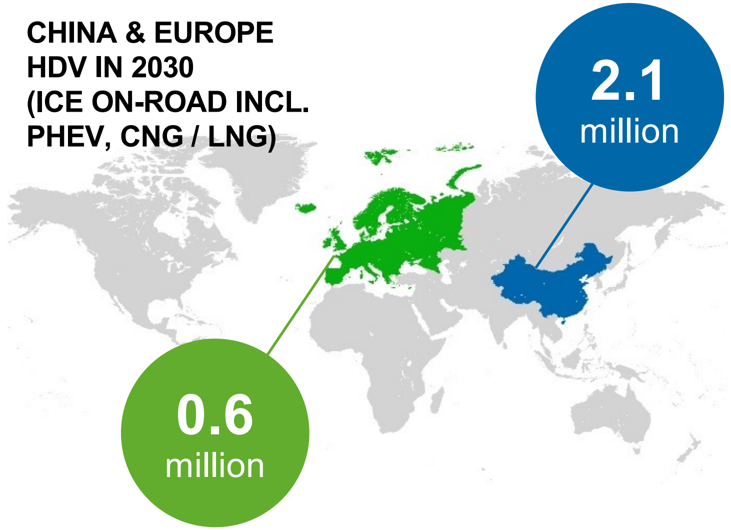


Potential Euro VII / China VII system layout



DOC: Diesel Oxidation Catalyst; DPF: Diesel Particulate Filter;
SCR: Selective Catalytic Reduction Catalyst; ASC: Ammonia Slip Catalyst

CHINA & EUROPE HDV IN 2030 (ICE ON-ROAD INCL. PHEV, CNG / LNG)



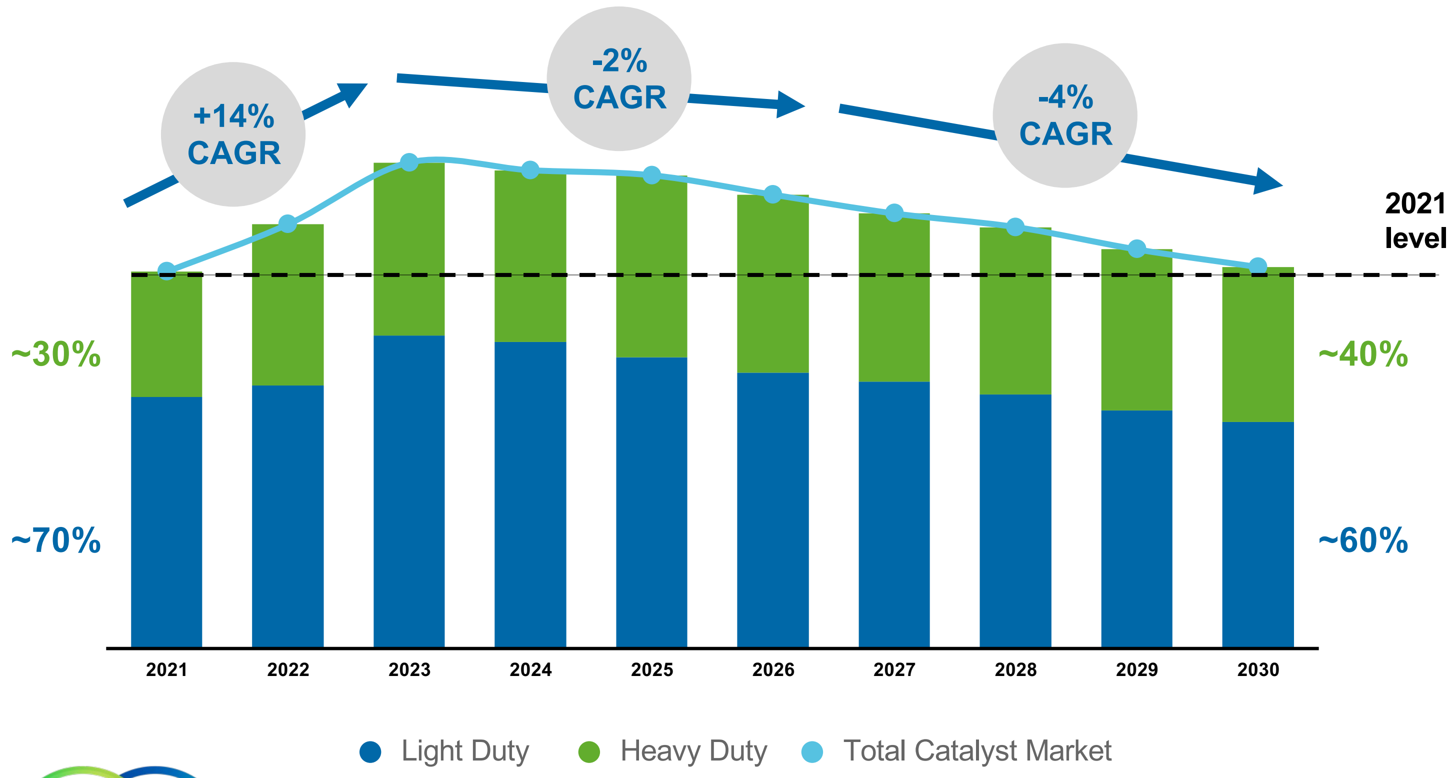
20%

value uplift vs. current Euro VI / China VI
(based on proposal)

Attractive value to capture the next decade

Emission catalyst market moving towards unprecedented value peak

Light, Medium & Heavy-Duty Vehicles
Global automotive catalyst volumes (liters)

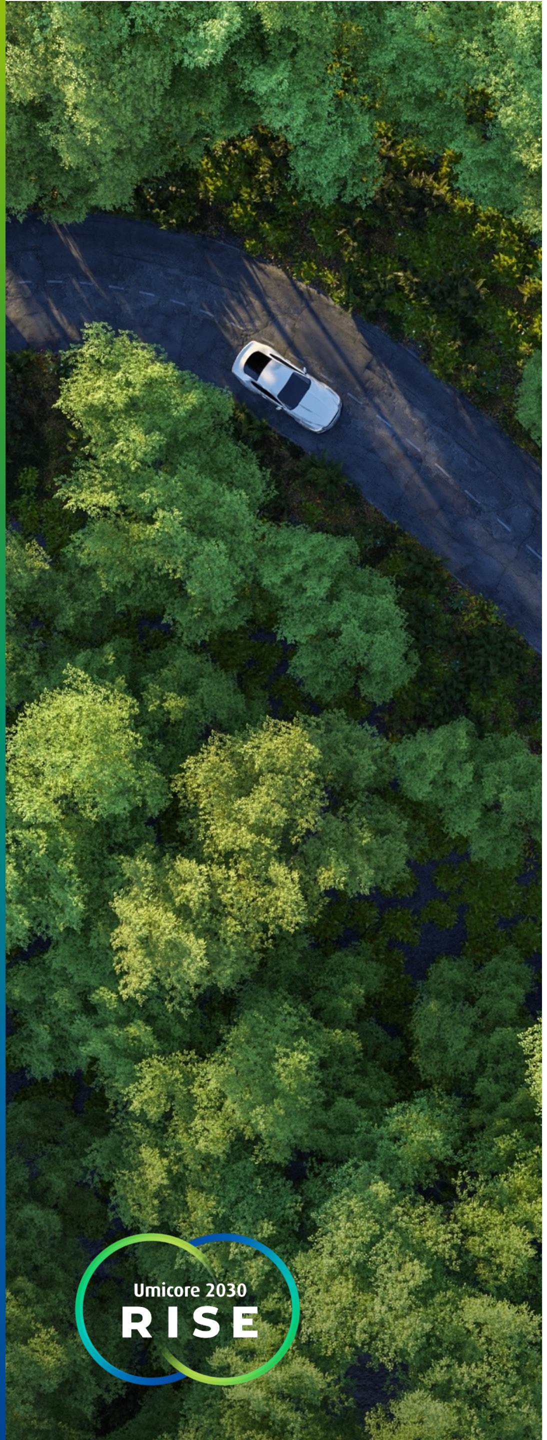


Source: Umicore market model – LDV and HDV (includes emissionized Heavy-Duty and Medium-Duty Vehicles; on-road only)

Value growth driven by market rebound and tighter legislation for light-duty and heavy-duty vehicles

Total addressable market in 2030 still exceeding addressable market in 2021

Attractive market profile – Ability to capture peak profitability and afterwards generate significant amount of free cash flow



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Well positioned to capture peak profitability and maximize value

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Capture peak profitability and maximize value

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Where to play

Capture maximum value from market peak		Maximize business value throughout the plan
Light-Duty Vehicles Maintain strong position in light-duty gasoline catalysts globally	**Heavy-Duty Vehicles** Further growth in heavy-duty market share, with focus on China and Europe	Historical focus on lean manufacturing and optimal operational costs, resulting in solid starting position today Continued focus on efficiency and performance while adjusting operations in line with market development

How to win

- **R** — **Reliable** Transformation Partner
- **I** — **Innovation** & Technology Leader
- **S** — **Sustainability** Champion
- **E** — **Excellence** in execution

Umicore 2030 RISE

Capture peak profitability and maximize value

R

Reliable Transformation Partner

EMBARKING THE MOBILITY TRANSFORMATION TOGETHER WITH OUR CUSTOMERS

Long-standing OEM relationships

Maintain critical regional presence and capacity while optimizing global footprint

Umicore 2030 RISE

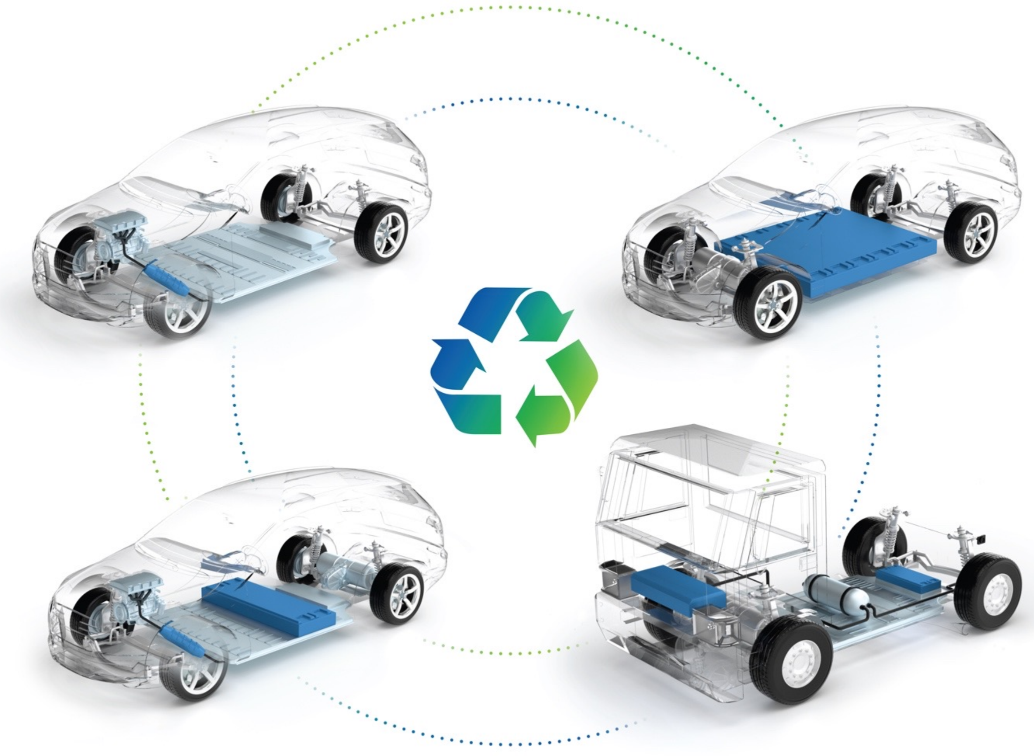
Unique position in clean mobility materials

Internal Combustion Engine

Emission control catalyst

Plug-in Hybrid Electric Vehicle

Battery active materials and emission control catalysts



Full Electric Vehicle

Battery active materials

Fuel Cells Vehicle

Electro-catalyst and battery active materials

Fully committed and trusted **technology partner** for car OEMs throughout their transformation journey

Source of **talent and know-how** for Umicore Group to enable OEM transformation

Umicore 2030 RISE

R Committed and reliable partner for our customers

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Track record: > 50 years of close customer relationships with all major OEMs; well-established broad customer base across the globe today

Close customer collaboration throughout transformation

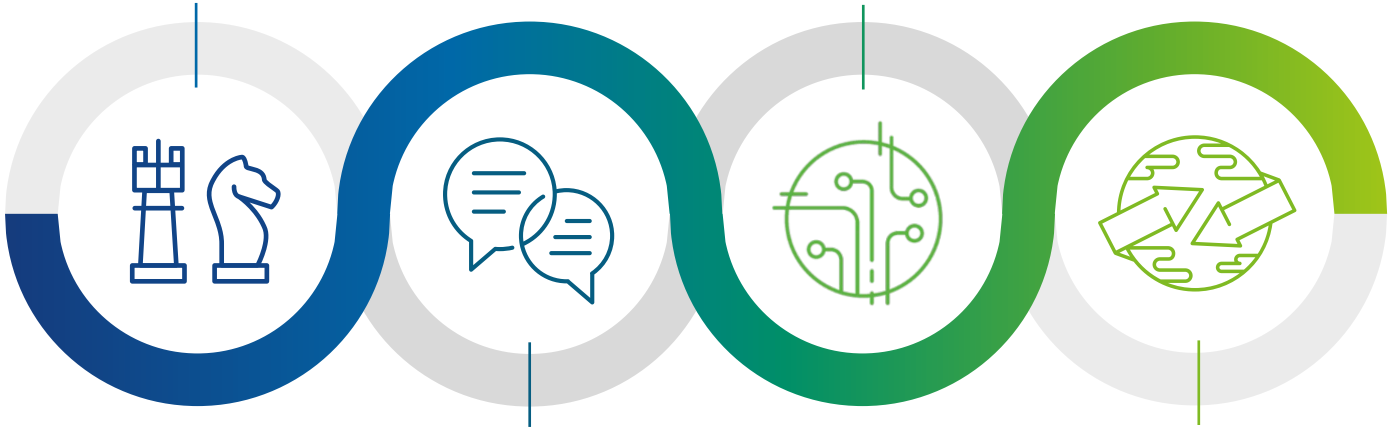
Entering new types of partnerships with customers, focused on long-term collaborations to jointly manage the transition

Global supplier

Strong commitment to continue serving our customers' needs local-for-local in key regions

Technology leader

Ensured investments in product innovation to help meet coming legislative requirements



Reliable & credible partner

Active dialogue with customers on transformation roadmap and catalyst supply chain securitization

Sustainable footprint

Global, sustainable supply footprint and recycling services

Umicore 2030 RISE

Capture peak profitability and maximize value

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I

Innovation
& Technology
Leader

STRONG TECHNOLOGY POSITION IN LIGHT OF UPCOMING EMISSION LEGISLATION

Proven track-record

Technology to remain key driver in years to come

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RISE

Proven innovation leadership …

Light-duty vehicles

- **Leading gasoline catalyst player** in Europe and China based on industry-benchmark technologies
- Disproportionate share of **GPF platforms** won in Europe and China in recent years
- **Co-development partnerships** with leading OEMs (e.g. with Volkswagen: *GPF technology for closed-coupled exhaust aftertreatment*)

Benchmark gasoline technology

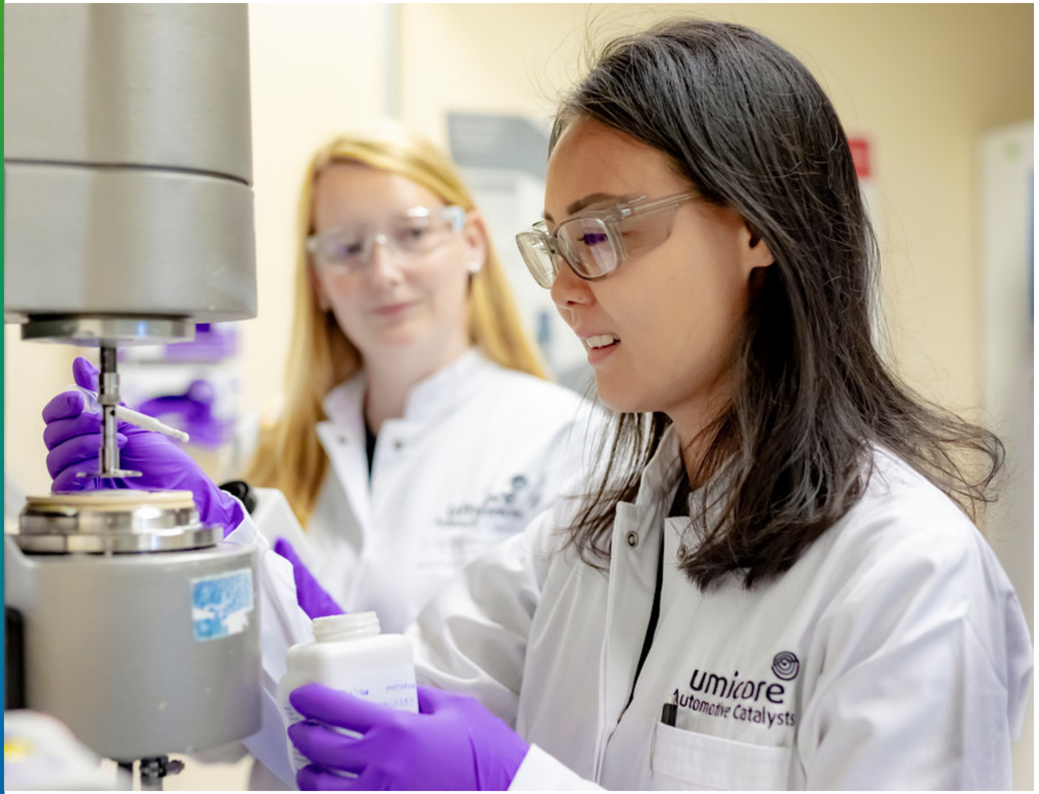
Heavy-duty vehicles

- **Competitive portfolio** as development partner of major OEMs
- **Expansion of supply share** in China and Europe – HDD growth regions
- **Co-development partnerships** for advanced HDD Aftertreatment solutions (e.g. with Scania: *next-generation global emission solution platform with dual urea dosing*)

Successful track record

GPF: Gasoline Particulate Filter

… with the right technology to grow



Light-duty vehicles

- **Reduced Rhodium and Palladium** utilization through FlexMetal TWC – qualified at major OEMs globally
- Secondary emission TWC for **ammonia emissions abatement**
- **High filtration efficiency** for GPF

Heavy-duty vehicles

- Even **lower NOx emissions** at optimized fuel economy with **UmiCOR® catalysts**
- Washable particulate filter with **ultra high filtration efficiency**

Next generation technology focused on critical aspects for upcoming emission norms

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TWC: Three-Way Catalyst;
GPF: Gasoline Particulate Filter

Capture peak profitability and maximize value

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S

Sustainability
Champion

LONGSTANDING PARTNER IN DELIVERING CLEANER AIR

Embedded sustainability value through sustainable operations

Cleaner air at the core of our business

Umicore 2030 RISE

Embedded sustainability value

Through sustainable operations & closed loop services

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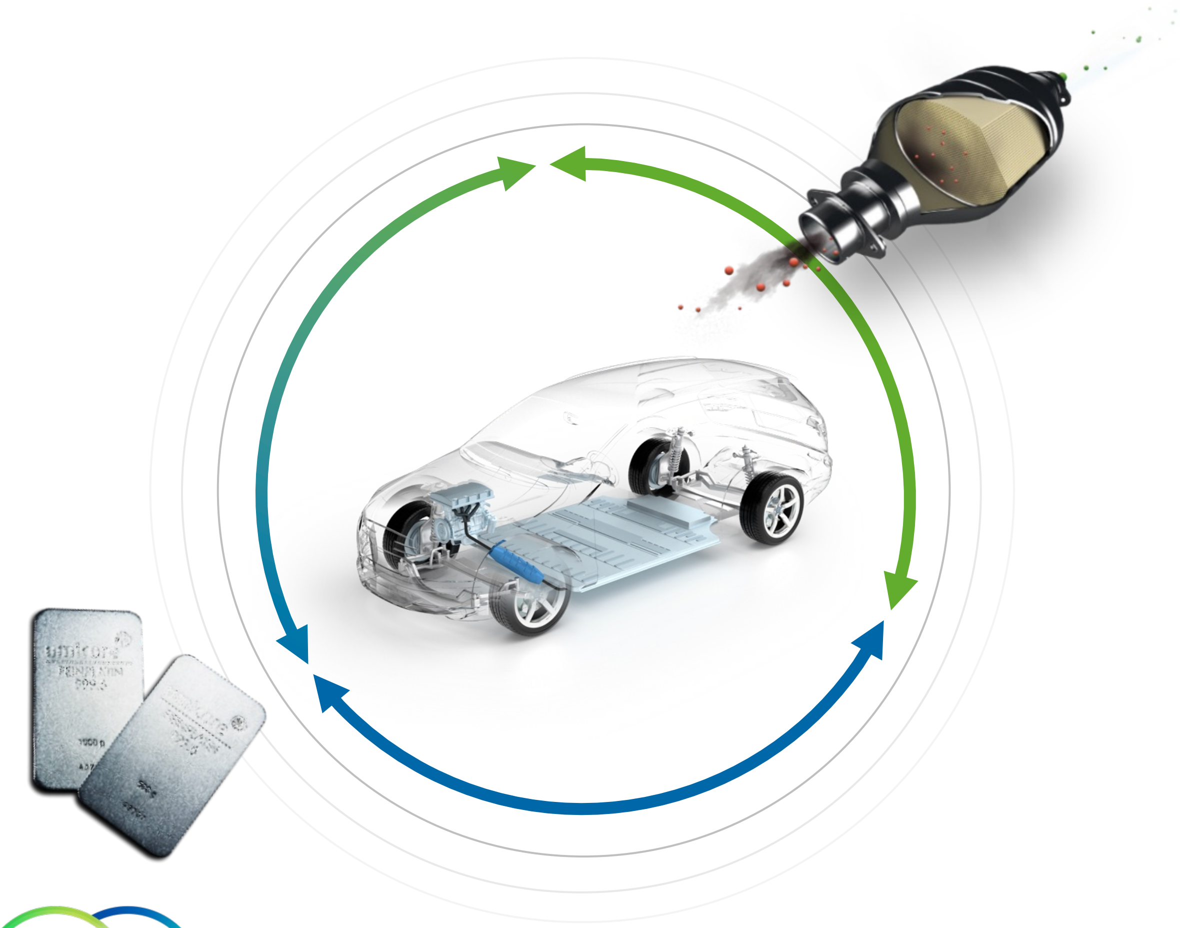

Sustainable operations

Many plants already fully powered by renewable electricity

Ecodesign at the heart of new sites, with flagship in Americana, Brazil

Longstanding closed-loop offer

Recycling millions of automotive catalysts & PGMs per year

Tackling resource scarcity

Technology focusing on PGM reduction

Umicore 2030 RISE

Cleaner air at the core of our business

Delivering to the strictest emissions standards

Preventing
2.8 million tons of NOx emissions

from being emitted into the air every year through
Umicore catalyst technologies

Umicore 2030 RISE

Using average lifetime of 200 000 km including NOx, HC, CO, excluding PM

Capture peak profitability and maximize value

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E

Excellence
in execution

ORGANIZATIONAL AGILITY

Operational agility through the different transformation stages	**Agility mindset to manage the transformation**

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RISE

E Organizational agility to manage the different transformation stages

	Growth (2024)	Peak (2028)	Maturity
Agile footprint	**Targeted expansions with business awards** • **Capex** ~20% above 2021 • Utilization target > 85%	**Adjustments in line with customer demand** • **Maintenance Capex**, < depreciation as of 2025 • Utilization target > 85%	**Adjustments in line with customer demand** • **Maintenance Capex**, > 50% below depreciation in 2030 • Utilization target > 85%
Costs reductions	**Stable**	**Efficiency gains**	**€ 100M reduction versus 2021**
Net working capital evolution	**Up**	**Declining**	**40% reduction in net working capital vs 2021**

Umicore 2030 RISE

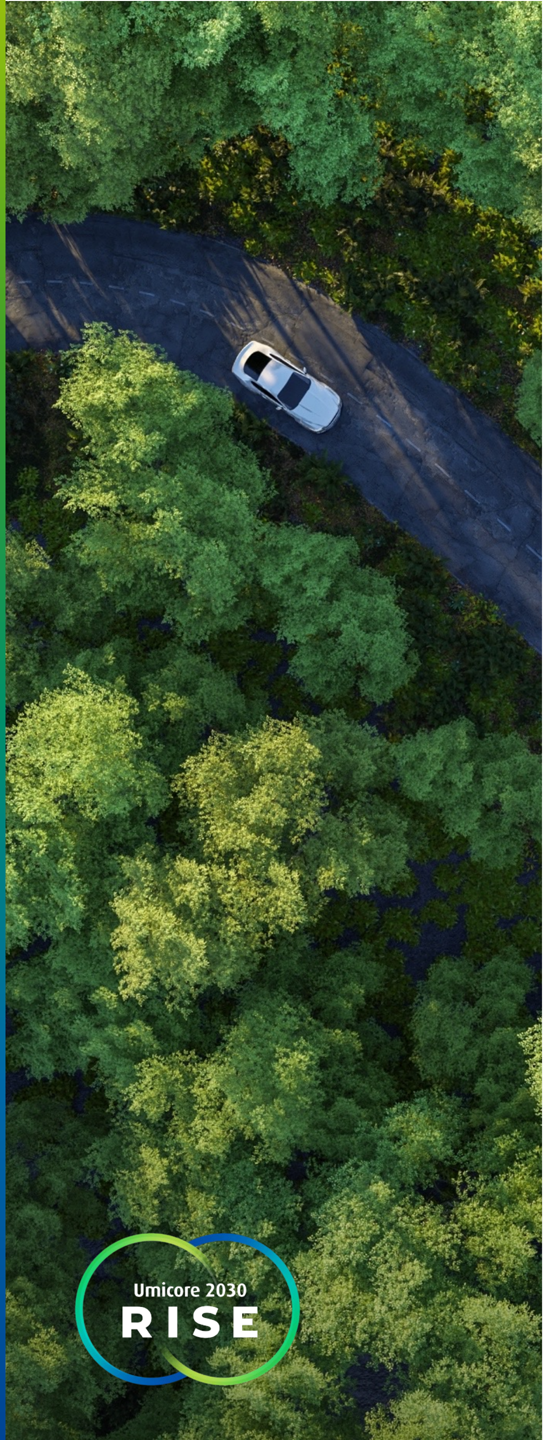
~€ 3 Bn cash delivered between 2022 and 2030, supporting Umicore growth

E Fostering an agility mindset throughout the different transformation stages

	Growth ↗	2024 Peak →	2028 Maturity ↘
Cultural transition	Transfer from growth mindset towards efficiency and agility	Increase performance and efficiency focus	Cash excellence mindset throughout the organization
Leveraging capabilities	Leverage strong expertise to capture the market peak	Continue to foster and develop critical PGM chemistry and automotive industry know-how	Leverage critical know-how within Automotive Catalysts and Umicore Group

Critical talent pool to be leveraged within Umicore Group

Umicore 2030 RISE



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Automotive Catalysts – RISE

Capture peak profitability and maximize value

Capture maximum value from market peak

- Maintain strong position in light-duty gasoline catalysts globally
- Continued growth in heavy-duty catalysts in China and Europe

Maximize business value throughout the plan

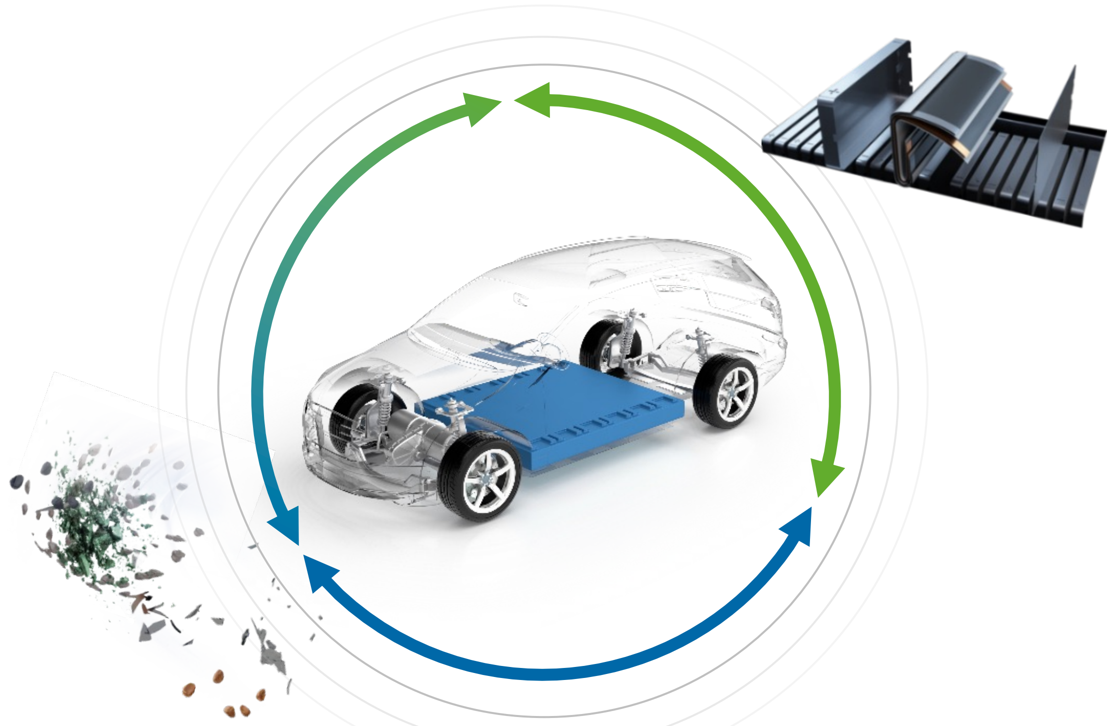
R	I	S	E
Reliable Transformation Partner	**Innovation** & Technology Leader	**Sustainability** Champion	**Excellence** in execution
EMBARKING THE MOBILITY TRANSFORMATION TOGETHER WITH OUR CUSTOMERS	STRONG TECHNOLOGY POSITION IN LIGHT OF UPCOMING EMISSION LEGISLATION	LONGSTANDING PARTNER IN DELIVERING CLEANER AIR	ORGANIZATIONAL AGILITY THROUGH THE DIFFERENT TRANSFORMATION STAGES

Throughout period:
€ ~3 Bn total cash delivered and critical talent pool, supporting Umicore growth
ROCE ~20% in 2030 and adj. EBITDA margin ~20%

Umicore 2030 RISE

Decarbonizing the battery value chain

Accelerating our journey towards net zero
& transforming our rechargeable battery materials business



Umicore cathode materials prevented **over 9.5 million tons of GHG emissions** from being emitted in 2021

Considering recycling, production, processing into batteries and the use of batteries in full EVs

Scope 1: identifying and implementing **energy efficiency improvements**

Scope 2: Signing **long-term PPAs** Cathode plant in Poland to operate on **100% renewable electricity**

Scope 3: **Securing a supply of sustainable battery materials** sourcing **low-carbon Nickel** & long-term supply agreements for **zero-carbon Lithium**

Umicore 2030 RISE