Capital Markets Day 2024

Meet Group Management

Darmstadt, October 17, 2024

Disclaimer

Publication of Merck KGaA, Darmstadt, Germany. In the United States and Canada the group of companies affiliated with Merck KGaA, Darmstadt, Germany operates under individual business names (EMD Serono, Millipore Sigma, EMD Performance Materials). To reflect such fact and to avoid any misconceptions of the reader of the publication certain logos, terms and business descriptions of the publication have been substituted or additional descriptions have been added. This version of the publication, therefore, slightly deviates from the otherwise identical version of the publication provided outside the United States and Canada.

Cautionary Note Regarding Forward-Looking Statements and financial indicators

This communication may include "forward-looking statements." Statements that include words such as "anticipate," "expect," "should," "would," "intend," "plan," "project," "seek," "believe," "will," and other words of similar meaning in connection with future events or future operating or financial performance are often used to identify forward-looking statements. All statements in this communication, other than those relating to historical information or current conditions, are forward-looking statements. We intend these forward-looking statements to be covered by the safe harbor provisions for forward-looking statements in the Private Securities Litigation Reform Act of 1995. These forward-looking statements are subject to a number of risks and uncertainties, many of which are beyond control of Merck KGaA, Darmstadt, Germany, which could cause actual results to differ materially from such statements.

Risks and uncertainties include, but are not limited to: the risks of more restrictive regulatory requirements regarding drug pricing, reimbursement and approval; the risk of stricter regulations for the manufacture, testing and marketing of products; the risk of destabilization of political systems and the establishment of trade barriers; the risk of a changing marketing environment for multiple sclerosis products in the European Union; the risk of greater competitive pressure due to biosimilars; the risks of research and development; the risks of discontinuing development projects and regulatory approval of developed medicines; the risk of a temporary ban on products/production facilities or of non-registration of products due to non-compliance with quality standards; the risk of an import ban on products to the United States due to an FDA warning letter; the risks of dependency on suppliers; risks due to product-related crime and espionage; risks in relation to the use of financial instruments; liquidity risks; counterparty risks; market risks; risks of impairment on balance sheet items; risks from pension obligations; risks from product-related and patent law disputes; risks from antitrust law proceedings; risks in human resources; reputational issues related to ESG matters or our inability to reach our ESG aspirations; risks from e-crime and cyber attacks; risks due to failure of business-critical information technology applications or to failure of data center capacity; environmental and safety risks; unanticipated contract or regulatory issues; a potential downgrade in the rating of the indebtedness of Merck KGaA, Darmstadt, Germany; downward pressure on the common stock price of Merck KGaA, Darmstadt, Germany and its impact on goodwill impairment evaluations as well as the impact of future regulatory or legislative actions.

The foregoing review of important factors should not be construed as exhaustive and should be read in conjunction with the other cautionary statements that are included elsewhere, including the Report on Risks and Opportunities Section of the most recent annual report and quarterly report of Merck KGaA, Darmstadt, Germany. Any forward-looking statements made in this communication are qualified in their entirety by these cautionary statements, and there can be no assurance that the actual results or developments anticipated by us will be realized or, even if substantially realized, that they will have the expected consequences to, or effects on, us or our business or operations. Except to the extent required by applicable law, we undertake no obligation to update publicly or revise any forward-looking statement, whether as a result of new information, future developments or otherwise.

This presentation contains certain financial indicators such as EBITDA pre adjustments, net financial debt and earnings per share pre adjustments, which are not defined by International Financial Reporting Standards (IFRS). These financial indicators should not be taken into account in order to assess the performance of Merck KGaA, Darmstadt, Germany in isolation or used as an alternative to the financial indicators presented in the consolidated financial statements and determined in accordance with IFRS. The figures presented in this statement have been rounded. This may lead to individual values not adding up to the totals presented.

perspective on cash

Helene von Roeder, CFO

Agenda

01

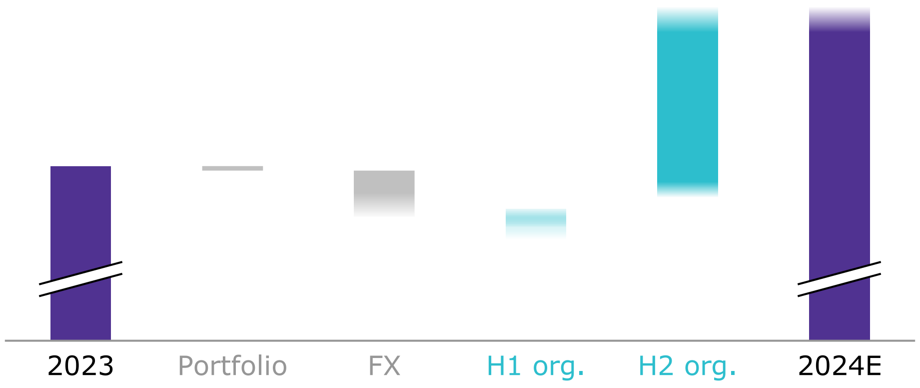
Improving near-term financials

Regaining growth momentum in 2024, guiding for significant H2 inflection

1 Org. Growth
2
3
4

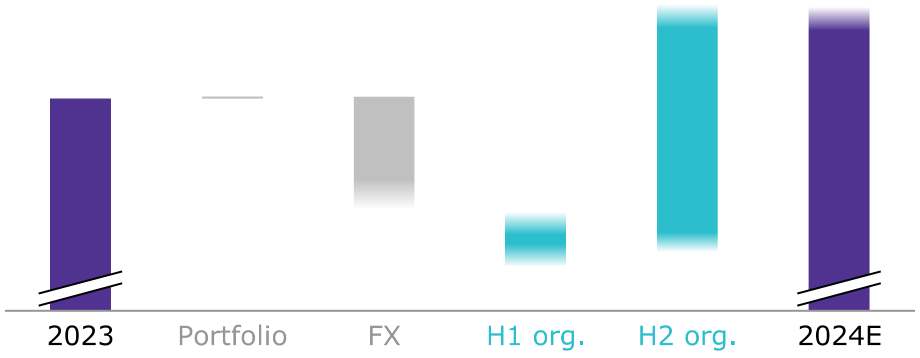
Organic sales growth to accelerate in H2
[In € m YoY]

Illustration



EBITDA pre returns to growth with op. leverage
[In € m YoY]

Illustration



Confirming 2024 guidance[1]

- Net sales of ~€20.7 bn – €22.1 bn
- EBITDA pre of ~€5.8 bn – €6.4 bn
- EPS pre of ~€8.20 – €9.30

All business areas driving growth in H2

- **LS:** returning to org. growth in H2’24 with less demanding comps
- **HC:** Growth driven by CM&E, Oncology and Mavenclad
- **EL:** inflection in AI / advanced nodes

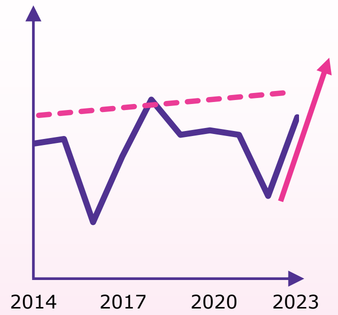
1) Based on guidance given on August 1: +2% to +5% YoY organic sales growth; +4% to +10% YoY organic EBITDA pre growth; FX headwinds of -3% to 0% YoY on sales and -5% to -1% on EBITDA pre;
Acronym(s): **FX** = foreign exchange; **YoY** = year-over-year; **LS** = Life Science; **HC** = Healthcare; **CM&E** = Cardiometabolic Care and Endocrinology; **EL** = Electronics; **AI** = artificial intelligence; **EPS** = earnings per share

Improving market environment driving return to growth

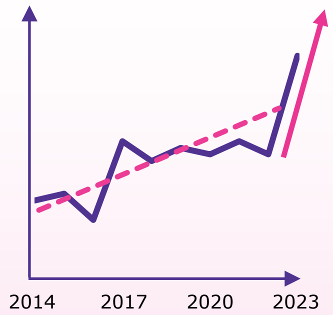
Life science

Number of FDA approvals[1]:

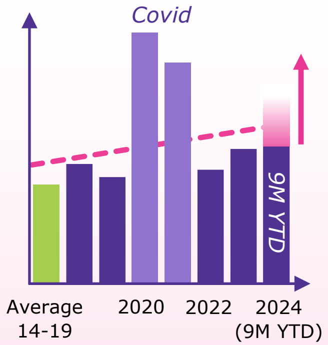
Small Molecules[7]



Biologics[8]



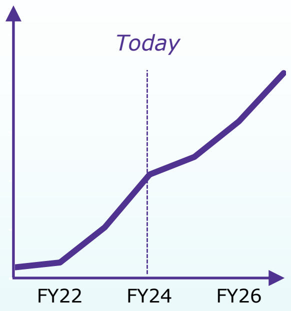
Emerging Biotech funding (US$ bn)[2]



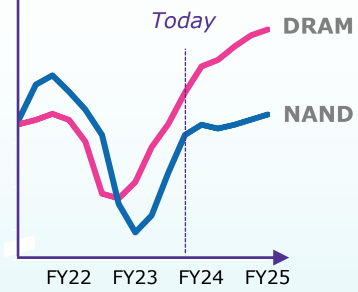
- Commercial scale production primary growth driver for both process products and process services markets
- FDA approvals (Small Molecules and Biologics) hit all time high in 2023 at 71; Biologics approvals at record number of 34
- Biotech funding has already exceeded 2023 levels at end of August 2024

Electronics

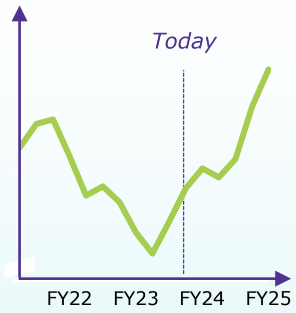
Hyperscaler AI Spend (Cloud Capex, US$ bn)[3]



Memory Market (k 12" wafer starts)[4]



Analog Market (bn units)[5]



- Hyperscaler cloud capex drove AI / adv. nodes inflection in Q2'24, with mature logic expected to recover in 2025
- Memory to recover gradually, particularly in VNAND, with AI[6] memory applications having already shown growth in 2024
- Analog forecast to inflect in 2025

1) Nature Biotechnology, 42; pages 355-361 (2024); 2) Cleveland Research Report from Sep 2024; 3) Company estimates, 4) TrendForce market intelligence update August 2024; 5) TechInsights Chip Insider August 2024; 6) DRAM saw growth alongside advanced logic in Q2'24 in the form of high-bandwidth memory for AI applications; 7) Small molecules, are drugs with chemical active ingredients; 8) A biologic is a drug or vaccine made from a living organism; can be made from proteins, sugars DNA, cells or living tissue e.g.
Acronym(s): **FDA** = Food and Drug Administration; **AI** = artificial intelligence

02

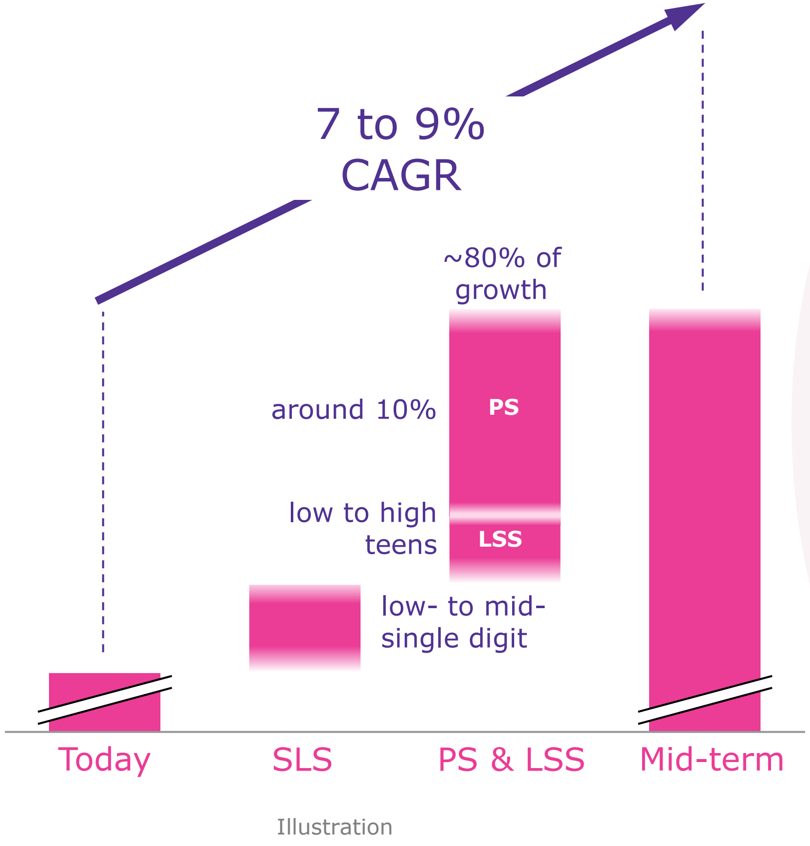
perspective on structural growth

Life Science

Above market mid-term growth outlook on business mix, portfolio

Diversified industry leader

Delivering above market growth on business mix, portfolio leadership and execution



Process Solutions

- Strengthening our leading portfolio in normalizing market (e.g. expanding offering for novel modalities)
- Seeing around 10% mid-term growth vs low-teens before on China

Science & Lab Solutions

- Diversified player in resilient and regulated markets
- Mid-term growth prospects intact, managing difficult market conditions

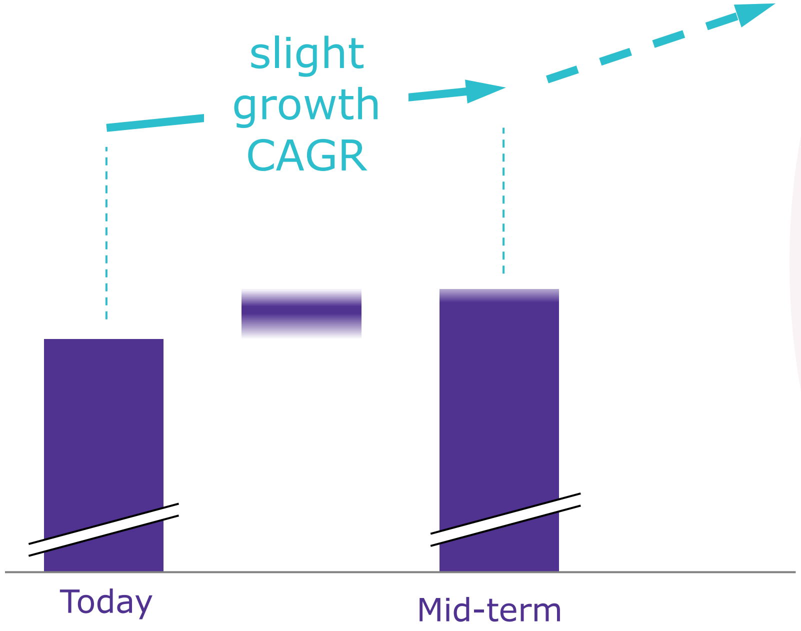
Life Science Services

- CTDMOs as strategic partners across all phases of development
- CDMO with clear focus on Novel Modalities, e.g. mRNA, VV, ADCs

Acronym(s): **SLS** = Science and Lab Solutions; **PS** = Process Solutions; **LSS** = Life Science Services; **CTDMOs** = contract testing, development and manufacturing organization; **CDMO** = contract development and manufacturing organization; **mRNA** = messenger RNA; **VV** = viral vector; **ADCs** = antibody-drug conjugate

Healthcare
Solid growth in CM&E and Fertility, long-term growth led by innovation

Global specialty innovator



Illustration

Ambition: Return to MSD growth CAGR long-term, supported by External Innovation

Mid-term growth drivers

- CM&E and Fertility portfolio as **resilient backbone** leveraging regional diversification
- Within the **Innovative Franchises** growth of Bavencio® and Mavenclad® maturing
- Pimicotinib[1] launch opportunity

Long-term growth led by innovation

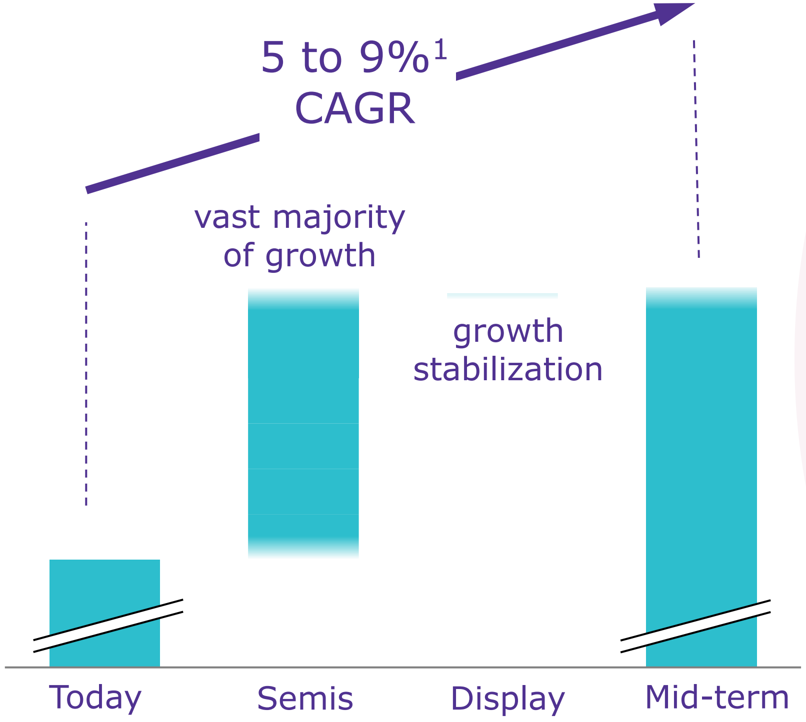
- **Expanding in N&I,** developing cladribine capsules in gMG, enpatoran passing futility
- **Executing Oncology strategy** with early phase DNA damage assets and ADCs

1) Sponsor: Abbisko Therapeutics Co. Ltd., Merck KGaA, Darmstadt, Germany holds exclusive license rights to commercialize in China, Hongkong, Macau and Taiwan with option for ROW
Acronym(s): **MSD** = mid-single digit; **CM&E** = Cardiovascular Metabolism & Endocrinology; **N&I** = Neurology and Immunology; **gMG** = generalized myasthenia gravis; **ADC** = antibody drug conjugate

Electronics
Accelerating growth by enabling AI and advanced nodes

Ecosystem relevant portfolio

Pure-play Electronics business accelerates growth with more gravity in Semis



Illustration

Semiconductors
CAGR of 7% to 11% driven by +200 to +400bps[2] growth above MSI (5% to 7%)

Display
Around stable as growth areas balance declining LCD business beyond 2025

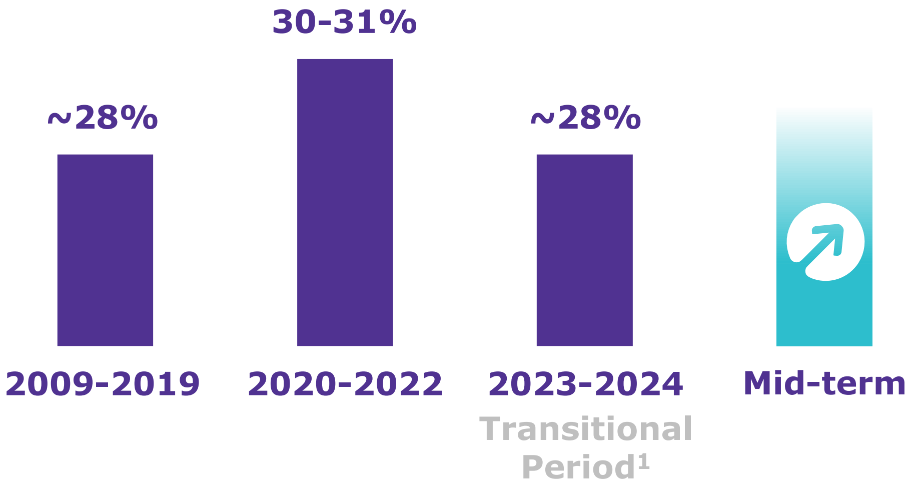
Growth drivers
- High-growth Semiconductors business now ~80% of sales[3]
- Thin-film portfolio enabling AI and advanced nodes
- OLED, AR/VR and optical 3D metrology[4] drive growth areas in Display

1) Mid-term ambition excludes Surface Solutions, which is assumed to be divested in H2'25; 2) Basis points; 3) ~80% =76% of Electronics excluding Surface Solutions, based on sales in FY23 and ~78% based on H1'24; 4) deal signed to acquire UnitySC on 18.07.2024, not included mid-term ambition at this point with AR/VR upside also in longer-term
Acronym(s): **AI** = artificial intelligence; **MSI** = million square inches of silicon wafers; **LCD** = liquid crystal displays; **OLED** = organic light emitting diodes; **AR/VR** = augmented and virtual reality

03
Leveraging value compounding

Strengthening profitability as utilization rates increase

EBITDA pre %

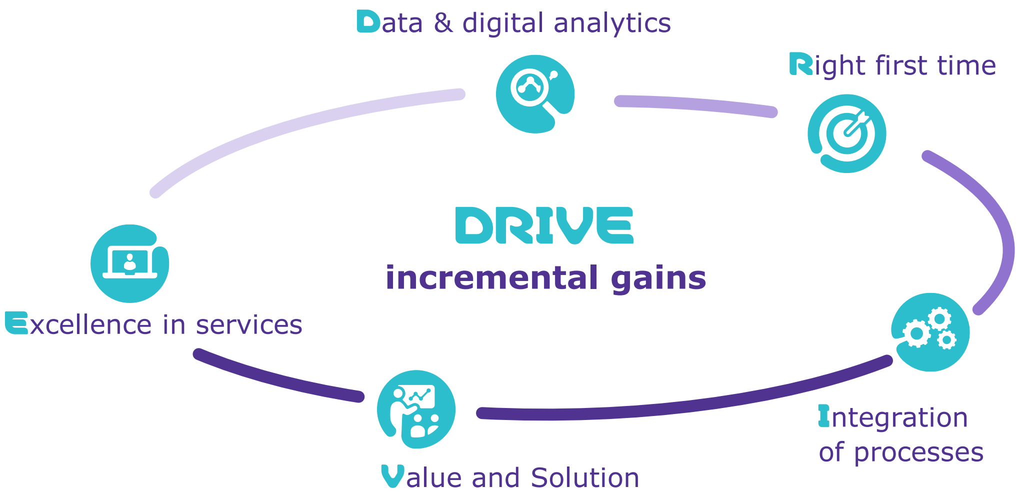


Scope to expand margins with sales increasing faster than costs

- **Structural margin expansion** in Life Science enhanced group margins in recent years
- **Idle costs from lower utilization** seen in both Life Science and Electronics during transitional period
- **Investing for structural growth** via network and capacity expansions, with additional cost burden in transitional period
- **Strong incremental margins** as sales recover and utilization rate rises

1) Transitional period 2023/24 characterized by idle costs from lower utilization in Life Science and Electronics. 2024 includes guidance given in August 2024

Relentless focus on Driving incremental gains from continuous process improvements



Ensuring profitable growth

Further evolution of Group Business Services[1]

- Further productivity savings of €30m FY21-24, with streamlined functions and role relocations
- Scope increased to over 3000 people, located across 3 global hubs and 2 service centres
- Elevate automation and processes to the next level as a true value and solution provider
- Accelerate progression of data quality, accuracy and master data governance to ensure a solid foundational for AI, ML and robotic automation
- Goal: deployment of AI industrialized use cases rapidly, in a scalable manner, across the Group

1) Merck KGaA, Darmstadt, Germany Business Services is the brand name for the Share Service function 2) €80m permanent savings achieved between 2016 to 2021 as per CMD21
Acronym(s): **AI** = artificial intelligence; **ML** = machine learning

Leveraging greater use of digital business

Life Science E-commerce initiative

- **Digital Sales:** eCommerce enhances product accessibility and procurement efficiency
- **Improved Customer Tools:** flexible, customer-centric digital services for life sciences
- **Digital Strategy:** Aligns digital transformation and smart manufacturing goals

Utilizing Data & Digital

- **Improve digital spine:** Smart manufacturing, digitalizing plants and commercial platforms
- **Pooling data for innovation:** helps customers to improve yield and enhances AI discovery[1]
- **Stand-alone digital business:** strengthen position in ecosystems, leverage platforms like Athinia

Increased share of digital business

Sales ↑
- Data and digital projects broaden scope
- Increasing e-commerce opportunities

EBITDA ↑ ↑
- Digital sales scaling with lower overheads
- Digital initiatives create productivity opportunities

Capital intensity ↓
- Digital business models come with lower working capital requirements

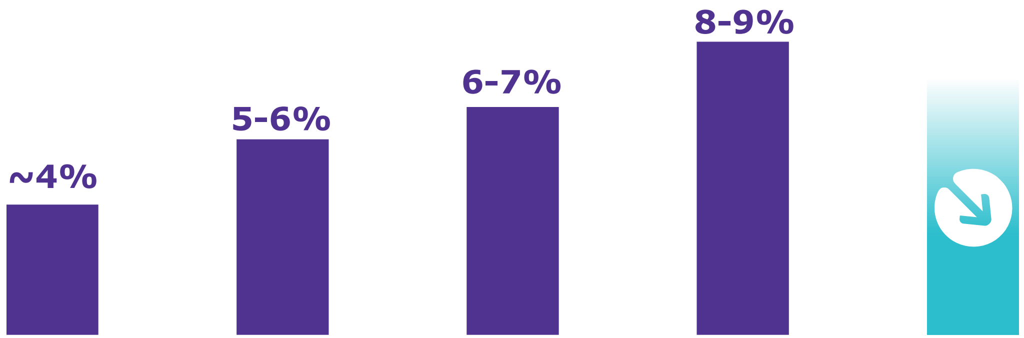
Digitalization is a core part of Company’s value compounding strategy

1) Merck KGaA, Darmstadt, Germany is leveraging AI to accelerate the discover of new molecules and materials across the business areas
Acronym(s): **AI** = artificial intelligence

Ready for a new phase of lower capital intensity

Reversing the trend of increasing capital investment

Capex to Sales %



2009-2015 HC larger share of portfolio

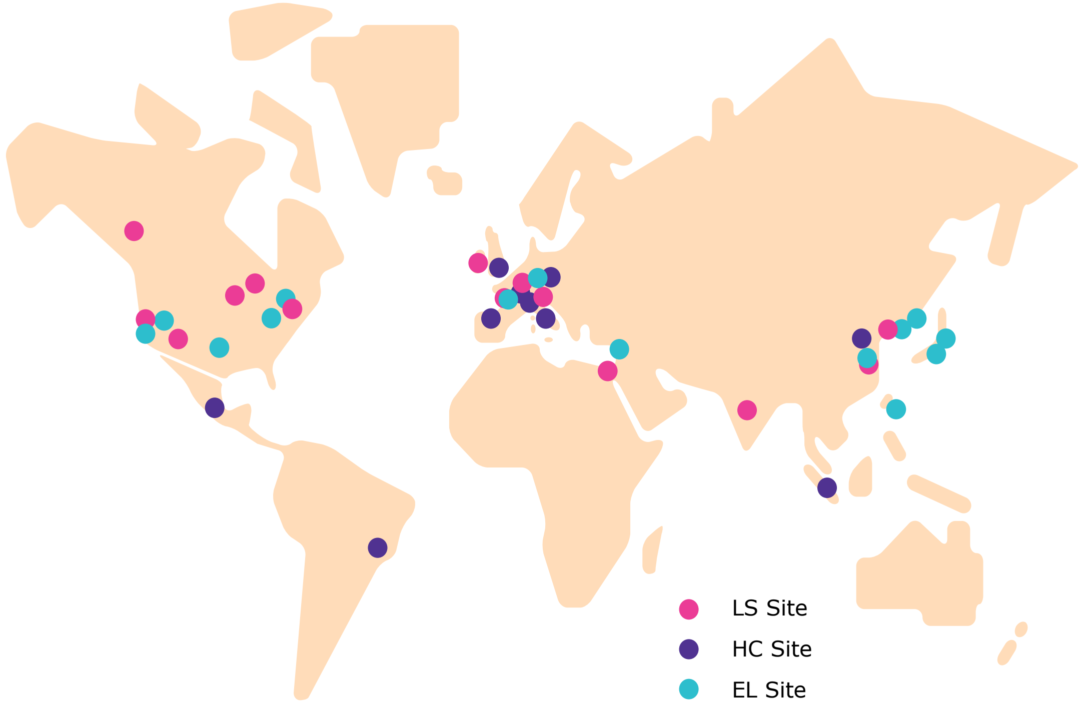
2016-2019 Growing LS business with higher capex needs

2020-2022 Step-up in capex to unlock growth

2023-2024[1] Continued investment for mid- to long-term growth with transitorily lower sales

Mid-term

Enhanced global footprint in place by end of 2025

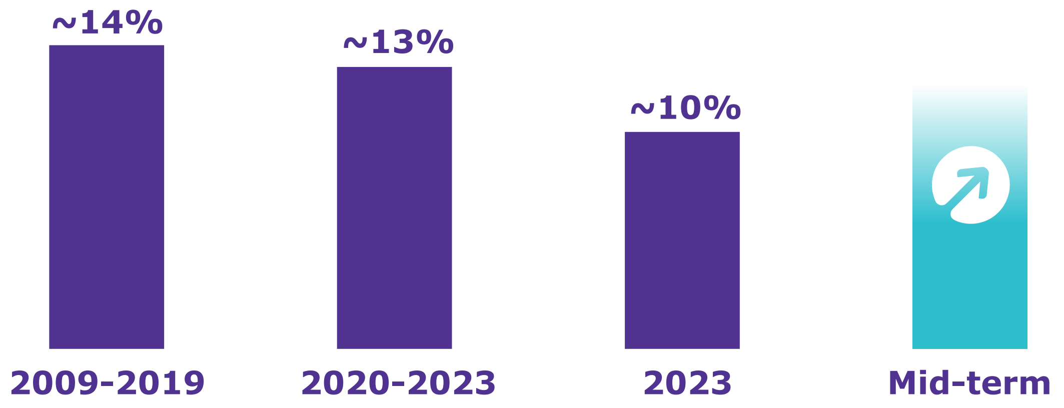


Normalizing investment needs with greater leverage as sales grow

1) 2024 includes indicative number based on Capex guidance of ~ €1.6 to 1.8 bn sales guidance of ~€20.7 – €22.1 bn given in August 2024
Acronym(s): **HC** = Healthcare; **LS** = Life Science; **EL** = Electronics

Driving enhanced FCF conversion

FCF as % of sales



FCF margin transitorily lower as Group continues to invest

Future shows expanded cash margins

- EBITDA pre margin expansion to improve with higher capacity utilization
- Drive incremental gains from process improvements
- Digitalization, increased share of digital business to enhance cash generation
- Expansion capex to normalize after FY25

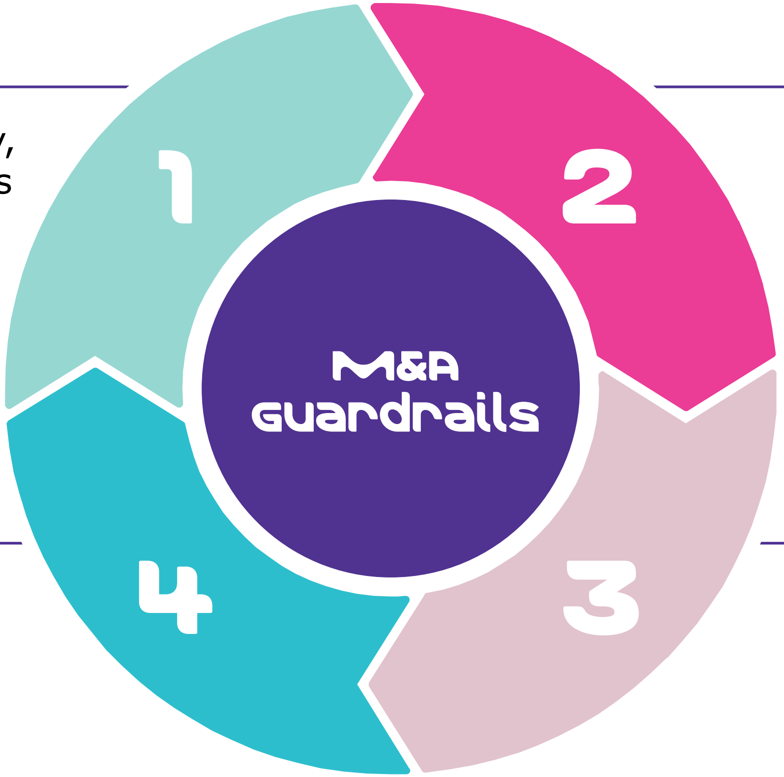
Improved cashflow to drive inorganic growth and fast deleveraging

Acronym(s): **FCF** = free cash flow

Rigorous application of the Group M&A playbook

Clear Financial criteria

- M&A supports profitable growth strategy, leveraging customer and market insights
- Strong investment grade ratings maintained[1]
- IRR above WACC
- EPS pre accretive



Financial Framework

- Strong financial capacity
- Patient deal origination
- Small or larger acquisitions – no prioritization
- Sustainable dividend policy in place[2]

Synergies and Integration

- Focus on deals with scope synergies
- Deep operational and financial due diligence to identify synergies and risk
- Processes for post-merger integration with people and culture prioritized

Financing Options

- Financing options by priority:

1 Cash
2 Debt
3 Hybrid
4 Divestments

Compounding value with a patient and disciplined approach to M&A

1) Moody's (A3) since 2021, S&P (A) since 2013 2) Dividend Policy: The current dividend constitutes the minimum level, assuming a stable economic environment. While Merck KGaA, Darmstadt, Germany aims to continuously develop dividends in line with business performance and earnings progression, dividend growth can deviate, e.g. in times of restructuring or because of significant global economic developments. Merck KGaA, Darmstadt, Germany also aims at a target corridor of 20-25% of EPS pre.
Acronym(s): **IRR** = internal rate of return; **WACC** = weighted average cost of capital; **EPS** = earnings per share

04 executive summary

Reacceleration of value compounding

	Track record[1]	FY23	Mid Term
1 Organic Growth	5% CAGR	-2% CAGR	restoring growth rate
2 Expand EBITDA pre	~28% margin	28% margin	margin upside
3 Strong FCF	~14% margin	10% margin	restoring FCF margins
4 M&A and Business Dev.	~3% CAGR		Upside on Deal by Deal basis

Accelerating EPS growth and returns

1) Track record from 2009 to 2023 from point when Merck KGaA, Darmstadt, Germany became a Life Science player following the acquisition of Millipore
Acronym(s): **FCF** = free cash flow

Executive summary

FOCUS
on efficient and scalable cost base

UNLEASH
era of lower capital intensity

PROPEL
profitable and cash generative growth

EXECUTE
well on M&A to drive value compounding