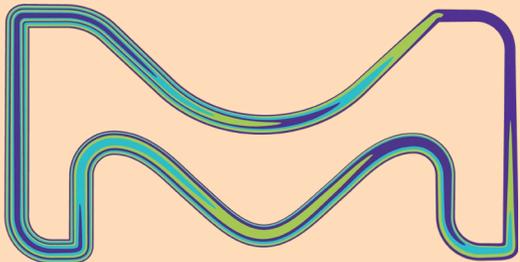


strong performance in a turbulent year

FY 2020 results
Presentation for the media

Stefan Oschmann, Chairman of the Executive Board & CEO
Marcus Kuhnert, CFO

March 4, 2021



Merck KGaA
Darmstadt, Germany

Disclaimer

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 from drug pricing by the divested Generics Group; risks in human resources; 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.

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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.



Agenda

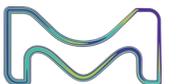
01 Executive summary

02 Strategic review

03 Financial overview

04 ESG update

05 Outlook & Guidance



EXECUTIVE SUMMARY

01

Highlights 2020



Operations

Healthcare: Mavenclad® 71% org. growth; Bavencio® 57% org. growth post Q3 U.S. launch in UC 1L; Fertility back to growth in Q4 post COVID-19 hit in Q2

Life Science: record 12% org. growth, fueled by 22% org. growth in Process Solutions amid COVID-19, Research (+5% FY; +16% in Q4) and Applied Solutions (+3% FY; +10% in Q4) at elevated year-end levels post COVID-19 dip in Q2

Electronics¹: Semi above strong market (+14% org.); even stronger finish of +20% in Q4 marking first quarter of post-trough Electronics growth (+8% org.); Display and Surface decline slowing further to -5% and -3% in Q4



Financials

FY organic sales: growth of +6.0%

FY organic EBITDA pre: growing +16.8%
(+8.4% org. excluding release of Biogen provision)

Guidance delivered:

Net sales: 17.5 bn

EBITDA pre: 5.2 bn (incl. Biogen €365 m)

EPS pre: €6.70 (incl. Biogen €0.63)

Net financial debt to EBITDA pre further down to 2.1 on December 31, 2020 – continued focus on deleveraging

¹Previously: Performance Materials



Guidance delivered

2020 guidance

2020 results

net sales

€17.1 – 17.5 bn

€17.5 bn



EBITDA pre

€5.05 – 5.25 bn

€5.20 bn



EPS pre

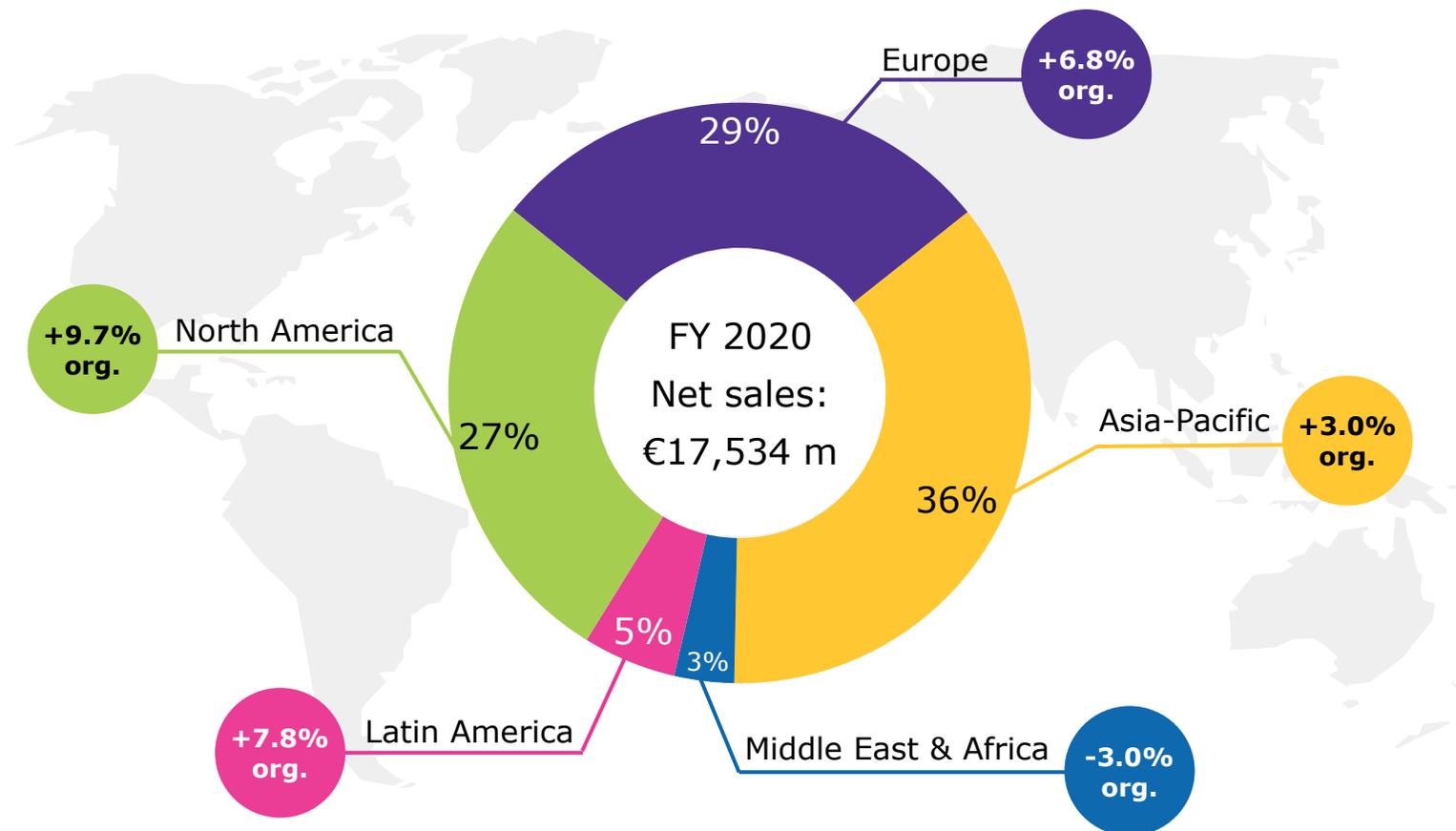
€6.50 – 6.80

€6.70



All major regions growing amid persisting pandemic impacts

Regional breakdown of net sales [€m]



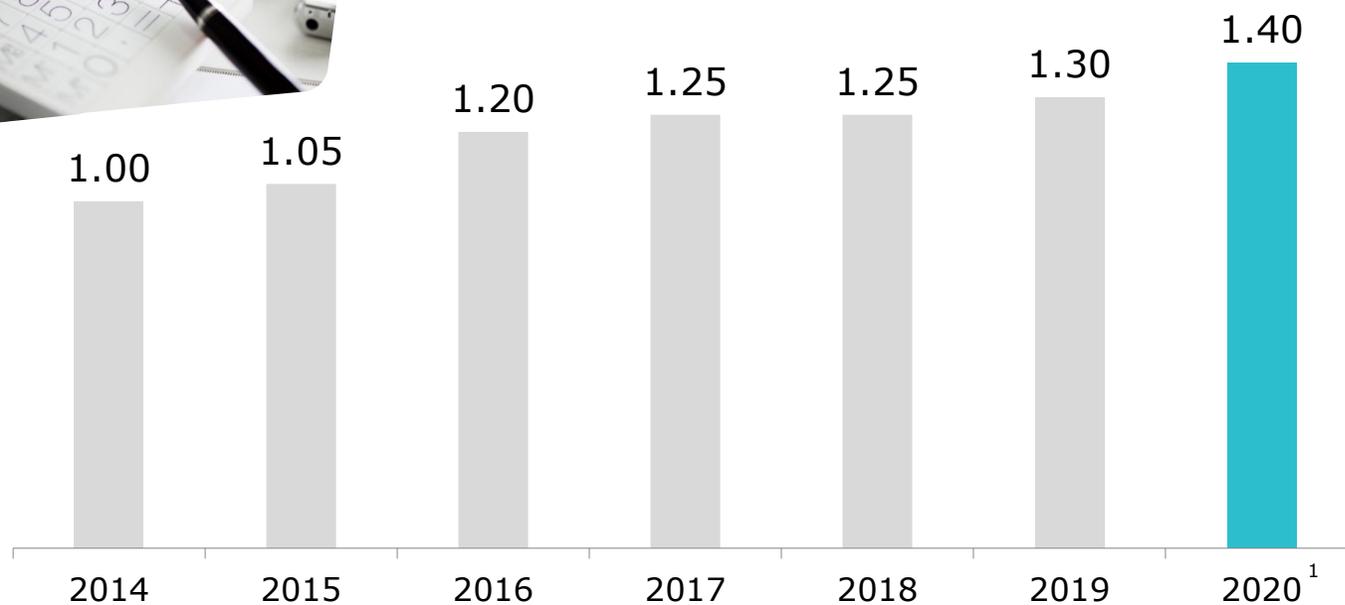
Regional organic development

- APAC: Double-digit growth in Life Science and Semiconductor Solutions overcompensates declines in Display Solutions, Fertility & Surface Solutions
- Europe: Growth in Process Solutions and Mavenclad[®] ramp-up more than offsets negative effects of COVID-19 on Fertility and Surface Solutions
- North America: Strong Healthcare driven by Mavenclad[®] ramp-up; double-digit growth in Life Science
- Strong General Medicine performance driving growth in LATAM; General Medicine not fully mitigating negative COVID-19 impact in ME&A



Sustainable dividend growth

Dividend¹ development 2014 -2020



2020 dividend

- Dividend of €1.40 (+8% YoY) per share proposed¹ for 2020
- Payout ratio of 23.1% of EPS pre² in 2020; aiming for 20-25% of EPS pre
- Dividend yield³ of 1.0%

¹Final decision is subject to Annual General Meeting approval

²Excluding Biogen provision release, including the provision release the ratio is 20.9%

³Calculated with 2020 year-end share price of € 140.35 per share.



strategic REVIEW

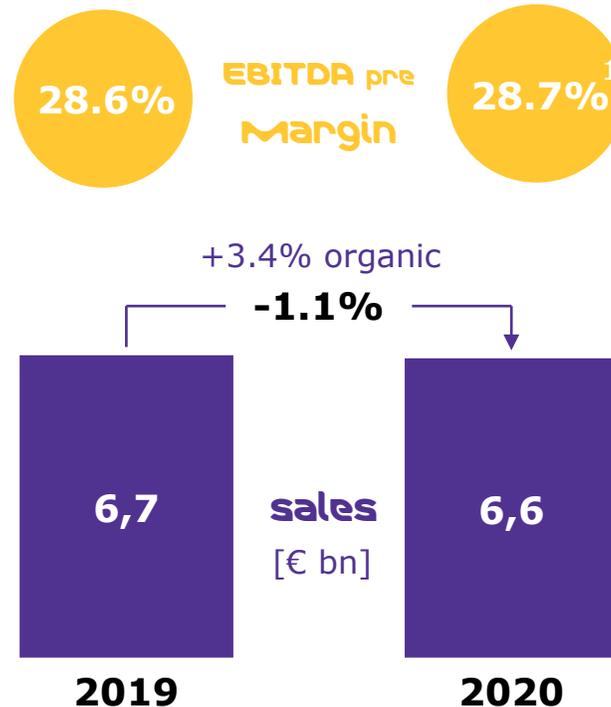
02

Healthcare: Delivering on both pipeline and core business commitments



Business performance

- Solid organic sales growth of 3.4% despite significant COVID-19 impact on Fertility and launch ramp-ups
- Swift Mavenclad® recovery from COVID-19 drives 71% organic growth FY and 7% overall Neurology & Immunology growth
- Core business remains about stable in 2020 as General Medicine growth overcompensates heavy COVID-19 impact on Fertility
- Sales growth, stringent cost management and COVID-19 cost-saving tailwinds drive 8% org. EBITDA pre growth (excl. provision release of €365 m)



Sector highlights

- **Highly resilient core business**
 - Fertility: Well-managed return to pre-pandemic levels as of Q3 2020
 - Rebif®: Temporary benefit from fewer switches amid pandemic
 - General Medicine: Growth despite first China VBP impact on Glucophage® and Concor®
- **On track for ~€2 bn pipeline sales by 2022**
 - Mavenclad®: Renewed global momentum and market share growth
 - Bavencio®: U.S. launch in 1L UC in June driving acceleration of sales growth²
 - Tepmetko®: First-in-class approval in Japan³
- **Significant growth potential beyond 2022**
 - Bintrafusp alfa: Several non-correlated studies across various tumor types ongoing
 - Evobrutinib: Phase III RMS studies on track
 - DDR: Leading portfolio with 3 DDR mechanisms enabling broad optionality

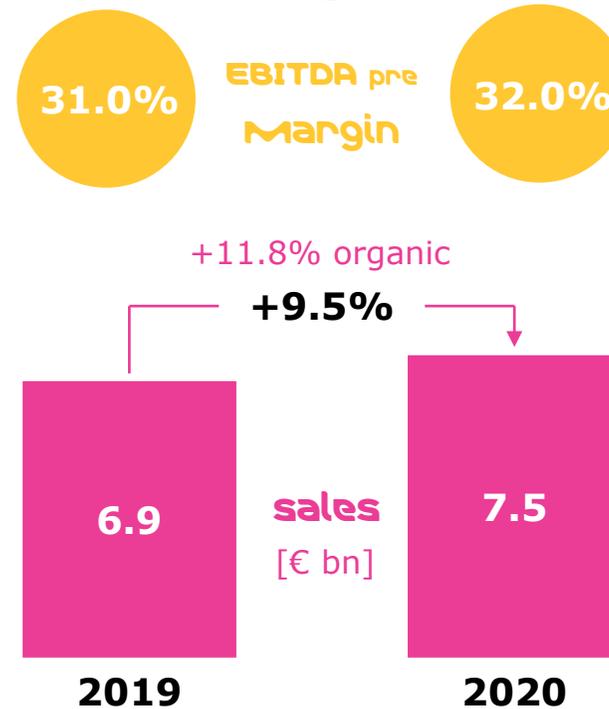
¹Excluding €365 m Biogen Provision Release, the reported margin is 34.1%; ² followed by approval by the European Commission on January 25, 2021, and Japan on February 24, 2021; ³ followed by US FDA approval on February 3, 2021; Acronyms: DDR = DNA Damage Response, UC = Urothelial Cancer, RMS = Relapsing Multiple Sclerosis



Life Science: Leveraging strong position to support global efforts against COVID-19 on top of underlying growth

Business performance

- Unprecedented level of growth driven by global effort to battle COVID-19 pandemic
- Very strong growth trajectory, albeit more volatile and differentiated across customer and product segments
- Acceleration of capacity expansions in response to COVID-19 demand surge
- Continued strong organic growth, with Process Solutions up 22%, Research Solutions up 5% and Applied up 3%
- Robust growth in core business despite lockdowns, plus significant COVID-19 related business (mainly in Process)
- EBITDA pre growth and exceptional margin expansion reflect favorable mix & leverage



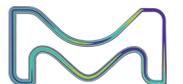
Sector highlights

- Successful increase in **capacity utilization** with flexible shift models to address surging demand
- Major ongoing **capacity expansion projects**¹
 - €140 m in Darmstadt, new membrane production plant for aseptic filters
 - €100 m in Carlsbad, more than doubling current viral & gene therapy capacity
 - €59 m in Madison, among largest single-digiting containment HPAPI² and ADC³ production
 - €40 m in Danvers and Jaffrey, ~700 additional single-use & filtration production staff
- Significant **innovations/launches**
 - Bio4C™ ProcessPad & Orchestrator, VirusExpress™, Blazar™, LANEXO™, BrightLab™, M Lab™ Shanghai

¹ Total committed amounts stated

² High-potent active pharmaceutical ingredients

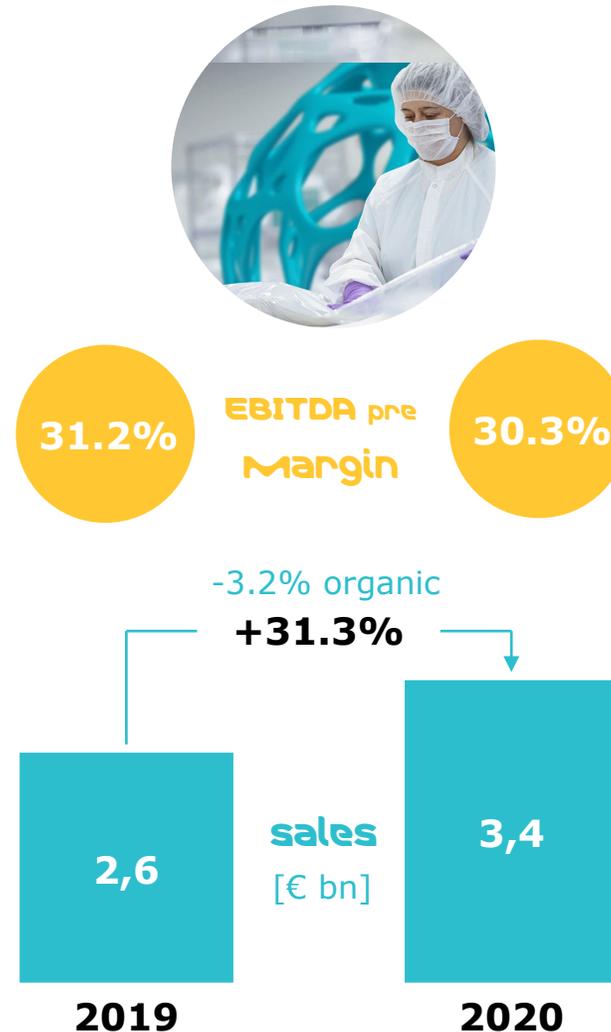
³ Antibody Drug Conjugates



Electronics: Enabling the future in a data-driven world

Business performance

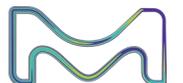
- Semiconductor Solutions now accounts for nearly 60% of sector net sales and continues to outperform a particularly strong market
- Successful integration of Versum despite pandemic challenge, leading to significant further synergy increase and acceleration
- Display Solutions down 12% driven by COVID-19 impact & high H1 Liquid Crystals comps; stabilization visible in Q4 (-5% org.)
- Confirmed commitment to remain around 30% EBITDA pre margin, despite pandemic impact on Display and Surface Solutions



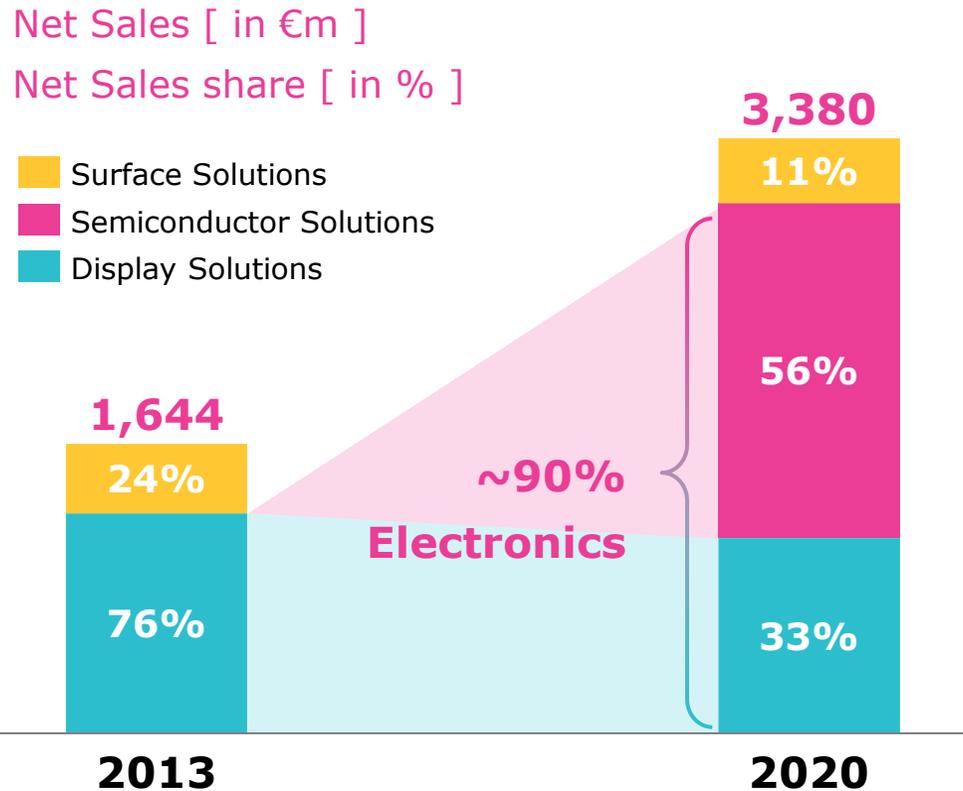
Sector highlights

- One of **most relevant portfolios** in industry
 - Over 100 PORs¹ won in Semi Materials in 2020 across all material categories
- **Driving innovation** to the next level
 - ~€25 m investment in next-gen Semi Materials center in Korea & €20 m OLED production expansion in Korea and China
 - Successful Big Data & machine learning projects with key customers
- Continuous focus on **customer centricity**
 - Over 15 supplier awards from semi industry leaders in 2020, some 5th consecutive time
 - Supplier awards from several leading OLED customers in 2020

¹ Process of Record; specifies series of operations a wafer must go through

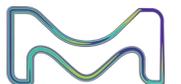


Electronics: Successful transformation into a business supplying a broad base of leading electronic players



Best-in-class portfolio of capabilities

- Transformed from **focused investments** and **acquisitions**
- Now close to 90% of business in electronics with **diversified portfolio**
- A **leading materials, services & equipment provider** to semi industry
- **Innovation & market leader** in LC and a leading materials supplier in OLED
- Transformation proofpoint: **return to growth (+8% org. in Q4)** post 6 quarters of decline

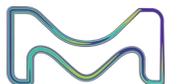


Innovation in electronics industry is driven at the atomic level enabling smaller, faster & more energy efficient solutions

Continued and growing materials importance in electronics industry

Proven, deep expertise warrants strong outlook

- Technology trends merely reinforced by work-from-home & learn-from-home
- Upgraded Electronics mid-term guidance to 3-4% CAGR at September Capital Markets Day
- Upgraded Versum synergy targets twice in 2020 & again today
- Even stronger outlook for 2021 reflected in today's guidance



Financial Overview

03

FY 2020: Overview

Key figures

[€m]	FY 2019	FY 2020	Δ	(Excl. Biogen provision release)	
				FY 2020	Δ
Net sales	16,152	17,534	8.6%		
EBITDA pre	4,385	5,201	18.6%	4,836	10.3%
Margin (in % of net sales)	27.1%	29.7%	2.5pp	27.6%	0.4 pp
EPS pre	5.56	6.70	20.5%	6.07	9.2%
Operating cash flow	2,856	3,477	21.7%		

[€m]	Dec. 31, 2019	Dec. 31, 2020	Δ
Net financial debt	-12,363	-10,758	-13.0%
Working capital	3,944	3,938	-0.2%
Employees	57,071	58,127	1.9%

Comments

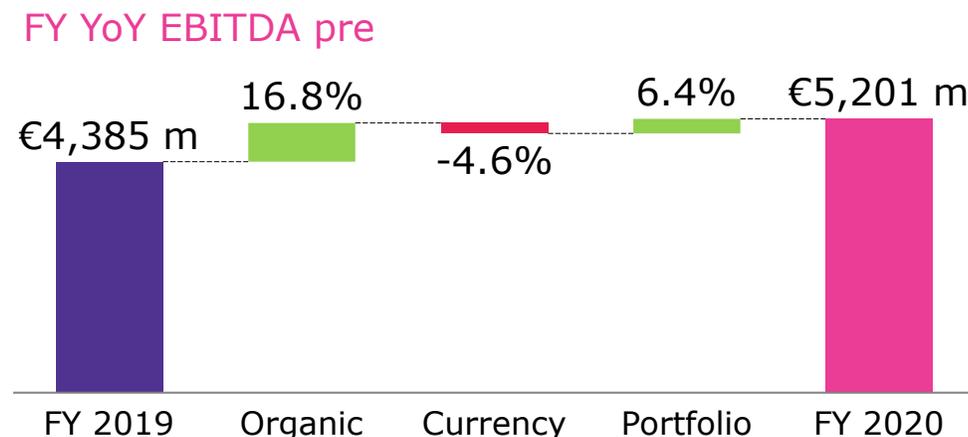
- Sales up 9%, driven by accelerating double-digit growth in Life Science, Versum portfolio & Healthcare pipeline
- Strong Life Science performance fuels underlying margin expansion excluding Biogen provision release
- Operating cash flow up 21.7%, supporting further net debt reduction
- EPS pre at € 6.70 (growing 9% excl. Biogen provision release)
- Working capital at prior year's level
- Headcount increase far below sales growth and largely in emerging markets



6% organic growth in 2020 driven by unprecedented Life Science growth, swift recovery from COVID-19 in Healthcare and strong Semi performance

FY YoY Net Sales	Organic	Currency	Portfolio	Total
Healthcare	3.4%	-3.6%	-0.9%	-1.1%
Life Science	11.8%	-2.3%	0.0%	9.5%
Electronics	-3.2%	-0.9%	35.4%	31.3%
Group	6.0%	-2.6%	5.3%	8.6%

- Mavenclad® ramp-up and Bavencio® U.S. launch in UC 1L drive 3% organic growth in Healthcare, while core business remains approximately stable despite pandemic Q2 impact on Fertility
- Life Science record 12% organic growth as Process Solutions up 22%; Research and Applied delivering 5% and 3%, supported by particularly strong Q4
- Electronics declining 3%, with turnaround materializing in Q4 (+8% org.); Semi up 14% (+20% in Q4) Display & Surface declining, but stabilizing at lower rates of decline in Q4



- Organic EBITDA pre growth significantly faster than sales (8.4% excl. Biogen provision release)
- Margin expansion driven by strong Life Science performance & cost management across all sectors
- Margin accretive Versum visibly contributing to EBITDA pre growth (Q1-Q3 portfolio; Q4 organic)
- Increasing FX headwinds result in FY drag of 4.6%, mainly from USD, BRL and ARS



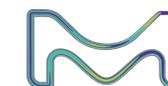
FY 2020: Reported figures

Reported results

[€m]	FY 2019	FY 2020	Δ	(Excl. Biogen provision release) FY 2020	Δ
EBIT	2,120	2,985	40.8%	2,620	23.6%
Financial result	-385	-354	-7.9%		
Profit before tax	1,735	2,630	51.6%	2,265	30.5%
Income tax	-440	-637	44.8%	-545	24.0%
<i>Effective tax rate (%)</i>	25.3%	24.2%	-1.1pp		
Net income	1,320	1,987	50.5%	1,713	29.8%
EPS (€)	3.04	4.57	50.3%	3.94	29.6%

Comments

- Top line-driven EBIT increase supported by Versum portfolio effect
- Financial result mainly driven by deleveraging
- Effective tax rate within guidance range of ~24-26%
- Net income and EPS reflect EBIT growth & better financial result, further elevated by provision release



FY Healthcare: Organic growth based on a strong Q1 and a swift recovery post Q2 dip; EBITDA pre further elevated by €365 m provision release

Healthcare P&L

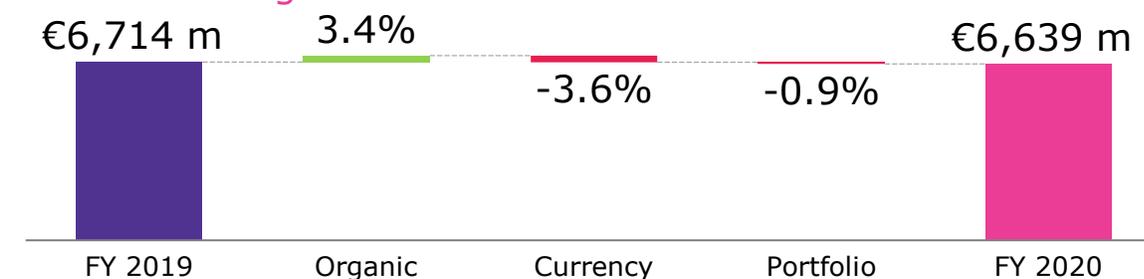
[€m]	IFRS		Pre	
	FY 2019	FY 2020	FY 2019	FY 2020
Net sales	6,714	6,639	6,714	6,639
M&S*	-2,305	-1,664	-2,303	-1,617
Admin	-344	-320	-329	-313
R&D	-1,666	-1,640	-1,663	-1,616
EBIT	1,149	1,804	1,176	1,889
EBITDA	1,896	2,184	-	-
EBITDA pre (in % of net Sales)	1,922 28.6%	2,267 34.1%	1,922 28.6%	2,267 34.1%

Comments

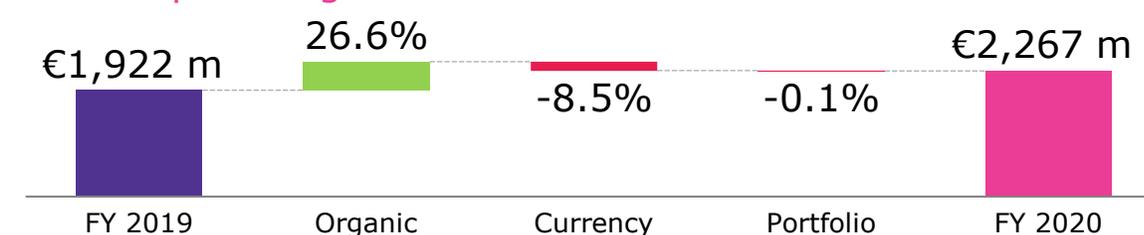
- Mavenclad[®] swiftly recovered from COVID-19 dip in Q2, back to expanding dynamic shares, however dynamic market remains suppressed; Rebif[®] above underlying trajectory towards year-end
- Fertility back to pre COVID-19 levels as of Q3 and growing again in Q4 but picture remains mixed across regions
- Erbitux[®] showing organic growth despite pandemic; Bavencio[®] ramping up, post U.S. launch in UC 1L and growing 57%

* Marketing and selling expenses

Net sales bridge



EBITDA pre bridge



- M&S decrease through rigorous cost management, supported by reduced face-to-face activities amid COVID-19 while expanding digital activities; expired amortization of Rebif[®]
- Lower R&D reflects ongoing stringent cost control while maintaining focus on priority programs
- Underlying EBITDA pre margin of 28.7% further elevated by €365 m Biogen provision release to 34.1%



FY Life Science: 12% increase mainly driven by 22% growth in Process Solutions as strong underlying growth is boosted by COVID-19 demand

Life Science P&L

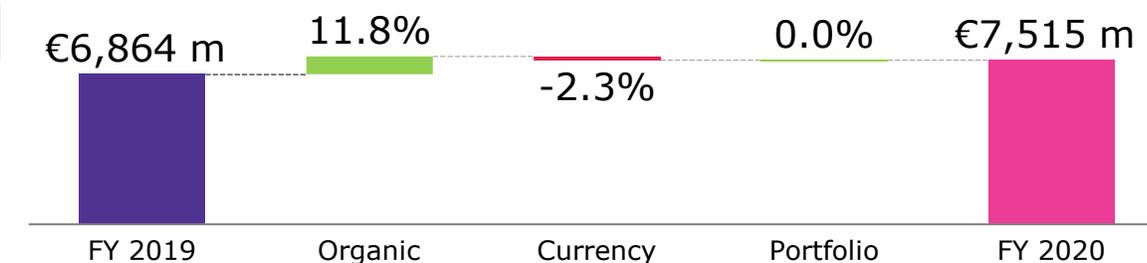
[€m]	IFRS		Pre adjustments	
	FY 2019	FY 2020	FY 2019	FY 2020
Net sales	6,864	7,515	6,864	7,515
M&S*	-1,924	-1,995	-1,922	-1,992
Admin	-341	-354	-307	-322
R&D	-276	-313	-276	-312
EBIT	1,280	1,599	1,340	1,619
EBITDA	2,070	2,387	-	-
EBITDA pre (in % of net Sales)	2,129 31.0%	2,405 32.0%	2,129 31.0%	2,405 32.0%

Comments

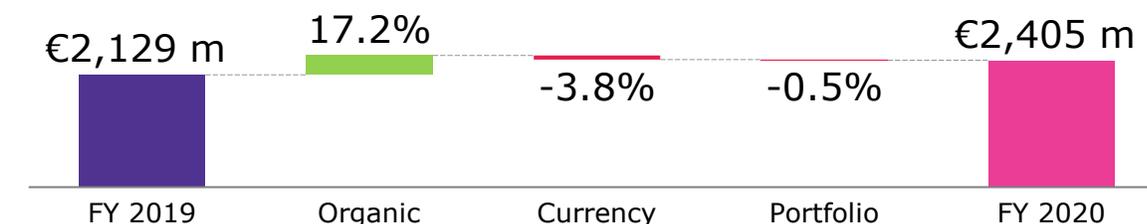
- 22% organic growth of Process Solutions mainly driven by downstream and single use, elevated by additional COVID-19 demand
- Research Solutions growing 5% as Q3 recovery is further supported by a particularly strong Q4 (diagnostics exposure & COVID-19 recovery)
- Applied Solutions growing 3% slightly below our mid-term guidance as negatives outweigh positives in the context of COVID-19
- M&S flat in absolute terms as cost-consciousness and lower travel expenses offset increased freight cost in M&S
- Admin increase driven largely by pandemic-related cost for additional safety precautions, however below sales growth
- Investments in strategic projects in R&D
- Outstanding operational leverage and favorable mix from additional COVID-19 demand boost EBITDA pre margin to 32%

* Marketing and selling expenses

Net sales bridge



EBITDA pre bridge



FY Electronics: Versum portfolio effect in Q1-Q3 and continuous organic Semiconductor growth far outweigh declining Display and Surface

Electronics P&L

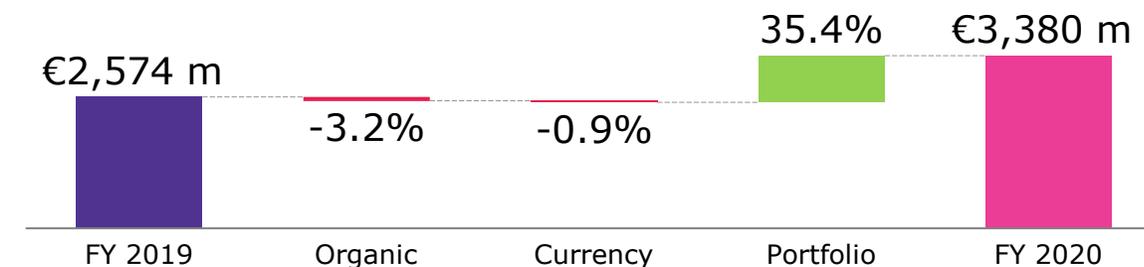
[€m]	IFRS		Pre adjustments	
	FY 2019	FY 2020	FY 2019	FY 2020
Net sales	2,574	3,380	2,574	3,380
M&S*	-329	-539	-323	-530
Admin	-118	-162	-107	-144
R&D	-267	-274	-241	-272
EBIT	307	240	481	463
EBITDA	637	925	-	-
EBITDA pre	803	1,024	803	1,024
(in % of net Sales)	31.2%	30.3%	31.2%	30.3%

Comments

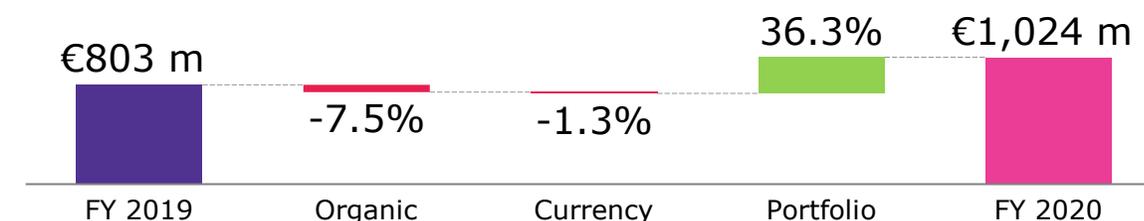
- Sales growth of 31% mainly due to portfolio effect from Versum overcompensates organic decline in Display and Surface
- Semiconductor Solutions: Persistent strong organic growth with a particularly strong year-end
- Display Solutions: COVID-19 impact eased further in Q4 but still weighing on LC's negative underlying trajectory particularly against still elevated comps in 2019; OLED also impacted FY

* Marketing and selling expenses

Net sales bridge



EBITDA pre bridge



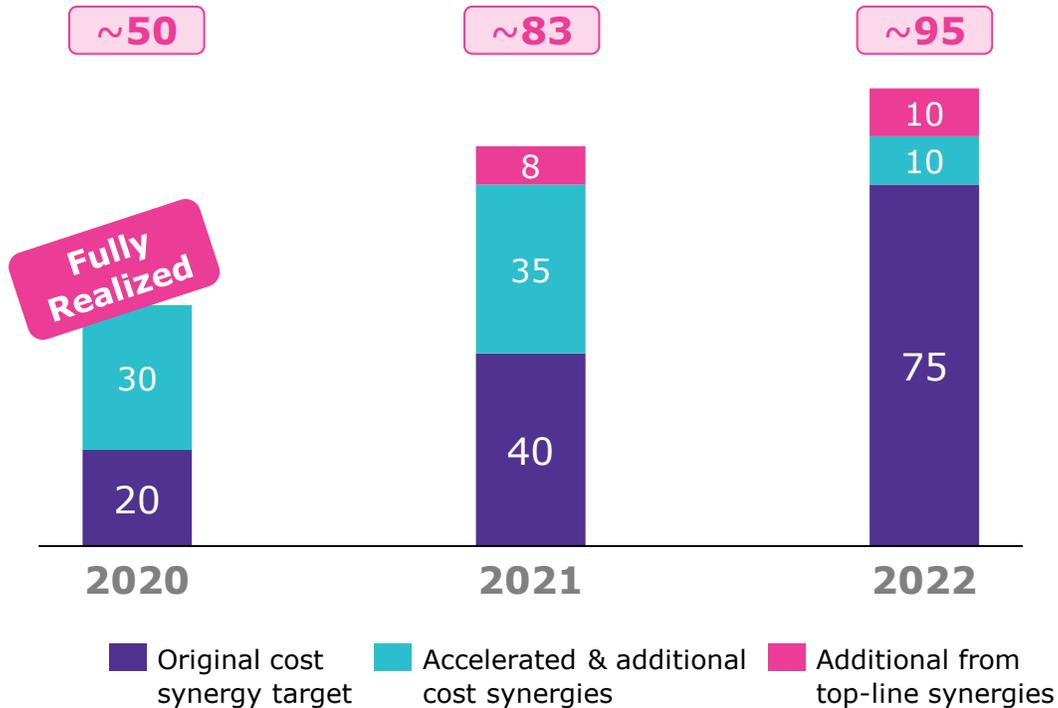
- Surface Solutions: Heavy COVID-19 impact on automotive and cosmetic end markets resulting in business decline, but easing towards Q4
- M&S and Admin reflect consolidation of Versum acquisition and diligent underlying cost management as part of the Bright Future transformation
- R&D 9M 2020 include Versum consolidation and show underlying Bright Future cost management
- EBITDA pre growth driven by additional gross profit from Versum

Totals may not add up due to rounding



Successful integration drives substantial synergy upgrade and acceleration

EBITDA pre impact of synergy ramp-up [€ m]

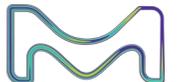


Sources of synergies

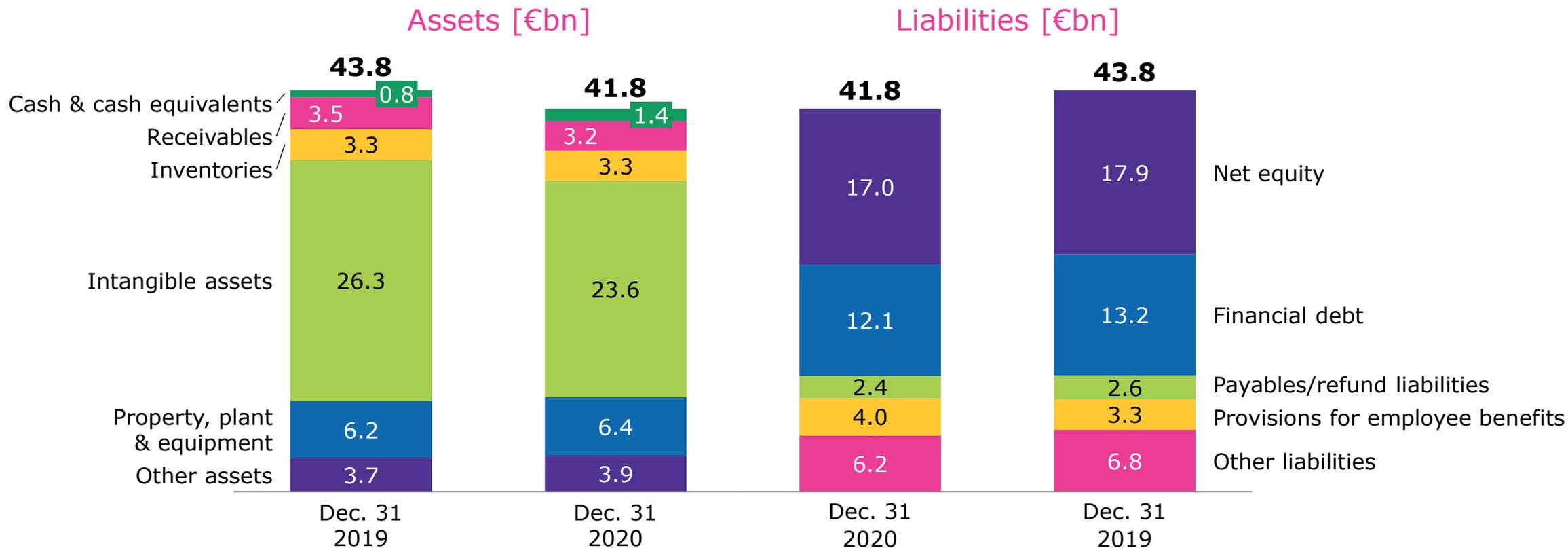
- business optimization**
 - Transform country setup
 - Streamline duplicate structures
- procurement and supply chain**
 - Optimize production and supply chain network
 - Achieve savings through joint procurement
- corporate and administrative functions**
 - Integrate corporate & administrative functions
 - Cost savings due to U.S. company delistings

Original target for 2022 is now being addressed for 2021

*Top-line synergies from cross-selling, new products introductions and overarching initiatives
 Q4 20 Results Presentation | March 4, 2021



Balance sheet



- Significant decline in intangible assets, primarily driven by FX
- Higher cash level in order to secure liquidity in the face of the COVID-19 pandemic and related uncertainties, driven by strong operating cashflow

- Stable equity ratio of 41%
- Strong operating cash flow in 2020 drives financial debt reduction of more than €1 bn



FY 2020: Cash flow statement

FY 2020 – cash flow statement

[€m]	FY 2019	FY 2020	Δ
Profit after tax	1.324	1.994	670
D&A	1.944	1.938	-6
Changes in provisions	153	-110	-263
Changes in other assets/liabilities	-391	-123	267
Other operating activities	-4	-59	-55
Changes in working capital	-169	-162	7
Operating cash flow	2.856	3.477	621
Investing cash flow	-6.153	-1.340	4.813
thereof Capex on PPE	-782	-1.377	-595
Financing cash flow	1.902	-1.522	-3.424

Cash flow drivers

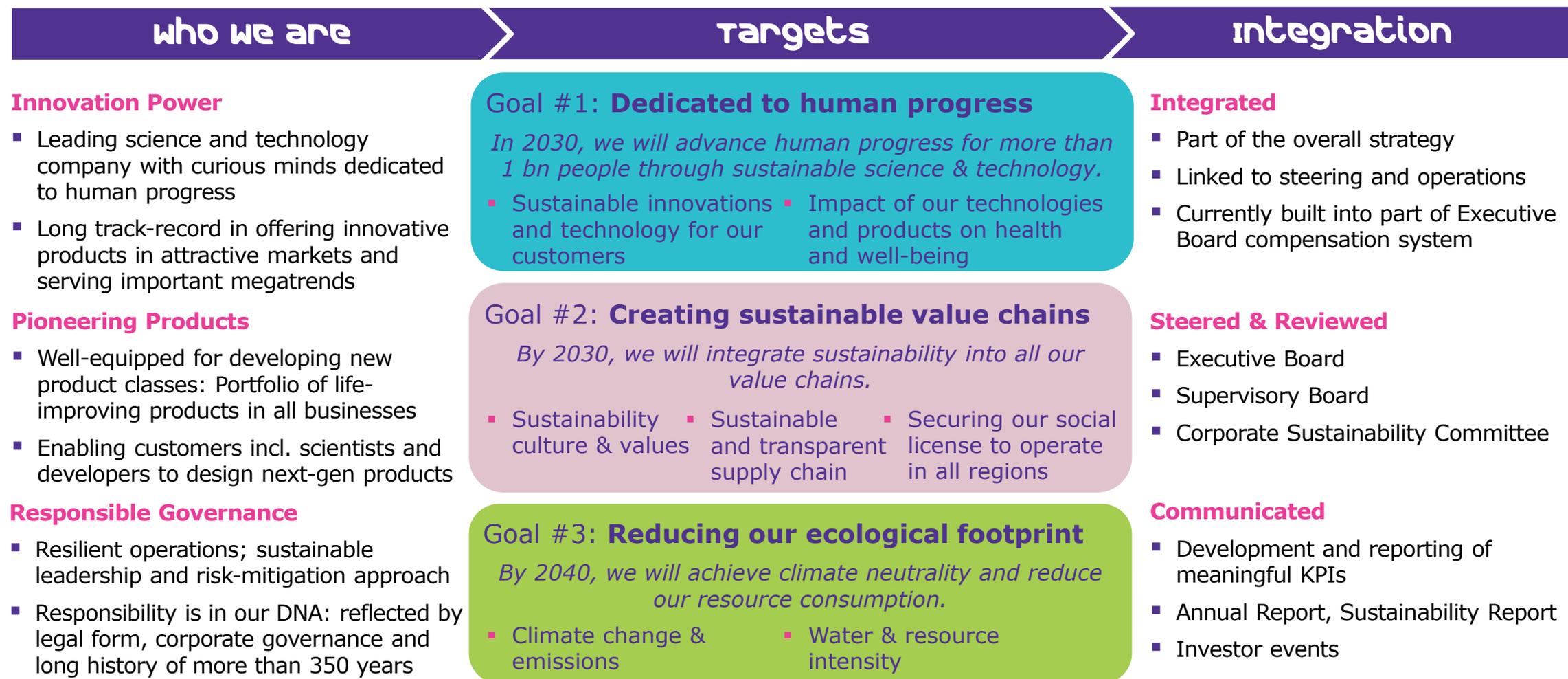
- Higher profit after tax driven by strong operational performance particularly in Life Science
- Stable D&A as higher depreciation (primarily from Versum) balances lower amortization (Rebif®)
- Biogen provision release primary driver of delta in changes in provisions
- Stable increase in working capital in line with COVID-19 driven inventory and higher sales-driven receivables
- >20% growth in operating cash flow
- 2019 investing cash flow reflects Versum
- 2019 financing cash flow reflects Versum while 2020 reflects strong deleveraging



ESG
update

04

Sustainability strategy enhanced, leveraging strengths with clear commitment to new targets



Reduce our environmental footprint: Environmental targets 2020 have been achieved, new targets set

Achievements 2020

Reduce scope 1+2 emissions



Emissions target 2020 achieved!

- ✓ 25% overall reduction for Scope 1 and 2 emissions in 2020 relative to 2006 (planned: 20%)

Reduce water in stressed areas



Water target 2020 achieved!

- ✓ Water use in stressed areas reduced by 27% in 2020 vs. 2014 (planned: 10%)
- ✓ By 2020, all production sites⁴ successfully implemented sustainable water management system

Reduce Waste Score



Waste target ongoing & on track!

- ✓ Based on Waste Score, reduced environmental impact by 4.6% vs. 2016 (planned: 5% by 2025)

¹versus 2006 baseline, excluding Versum Materials

²versus 2014 baseline

³versus 2016 baseline

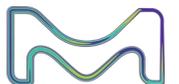
⁴Sites > 70.000 m³/a

New targets from 2021

- Aiming for **climate neutrality** (scope 1 to 3 emissions) **by 2040**
- **Lower scope 1 and 2 GHG⁵ emissions by 50%** and to source 80% of purchased electricity from renewable sources until 2030 vs. 2020 baseline
- **Absolute reduction of 1,500 kt⁶ scope 3 CO₂ equivalents by 2030**
- Enhancing water efficiency and **improve the new water intensity score by 10% by 2025** vs. 2019 baseline
- Minimize negative environmental impacts, **harmful emission residues should be lowered** below a scientifically defined threshold by 2030

⁵GHG = Greenhouse Gas

⁶corresponds to ~30% of 2019 scope 3 emissions (current estimation incl. Versum Materials)



outlook & guidance

05

Underlying COVID-19 assumptions for 2021 guidance

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- **Increasing penetration of vaccination** across large populations **in all major regions** as of summer
- **Global gradual easing of lockdowns**; virus mutations **not to significantly invalidate vaccination efforts**
- **Overall improvement in the course of 2021**; however, **higher degree of forecast uncertainty**



Healthcare assumptions

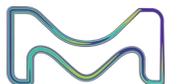
- **Confirm ~ stable (org.) base business and pipeline sales target**, despite higher uncertainty
- Pandemic **impact on ramp-ups** (particularly in suppressed MS high efficacy market) expected to ease significantly, but **remains a watch out**
- **Fertility** expected to **continue recovery**

Life Science assumptions

- **Continued additional demand in Process Solutions**
- **Research and Applied Solutions** more volatile and differentiated across customer and product segments, but **overall neutral to positive**

Electronics assumptions

- **Neutral to positive impact on Semiconductor Solutions** end markets
- **Display and Surface Solutions** to **return to underlying trajectories**



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Qualitative full-year 2021 guidance

Net sales:

Strong organic growth
Adverse FX of -2% to -5% YoY

EBITDA pre:

Organic: high single-digit to low teens growth (excl. Biogen¹)
Adverse FX of -2% to -5% YoY

¹ Q3 20 Reversal of the provisions for the patent dispute proceedings for Rebif in the amount of ~€365m;
Guidance incl. Biogen: slight to moderate organic growth

