

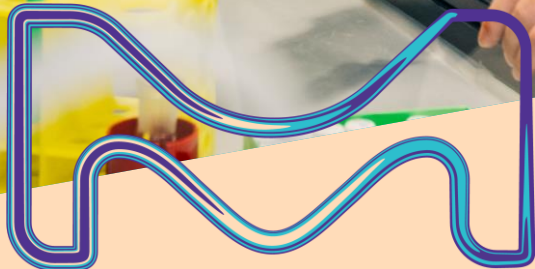


2021, A year of record growth and Margin expansion

**Merck KGaA, Darmstadt, Germany
FY 2021 results**

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Agenda

01 Executive summary

02 Strategic review

03 Financial overview

04 ESG update

05 Outlook & Guidance



EXECUTIVE SUMMARY

01



Highlights 2021



Operations

Life Science:

- Record growth (+21% org.) driven by strong core business (~12pp.) and COVID-19 demand (~9pp)
- Largest sales contribution to group (org. +€1.6 bn)
- Process Solutions main driver; all business units grow well above mid-term guidance

Healthcare:

- +8.5% org. growth (+€565 m) vs. impacted comps
- +144% org. growth in Bavencio[®] and +33% org. Mavenclad[®] ramp up amid muted high efficacy market
- Fertility recovery drives growth in established portfolio despite China VBP impact

Electronics:

- Semiconductor Solutions growing +15% org. contributing ~ €280 m org. growth to the group
- Above mid-term guidance org. growth of +8% (+€259 m)



Financials

FY organic sales: growth of +13.8%

FY organic EBITDA pre: growing +27.0%
(+18.1% org. incl. 2020 reversal of Biogen provision)

Guidance delivered:

Net sales: €19.7 bn
EBITDA pre: €6.1 bn
EPS pre: €8.72

Net financial debt to EBITDA pre:

Declines further to 1.4 on December 31, 2021



Guidance delivered

2021 guidance

2021 results

net sales

€19.3 – 19.85 bn

€19.7 bn



EBITDA pre

€6.00 – 6.30 bn

€6.10 bn



EPS pre

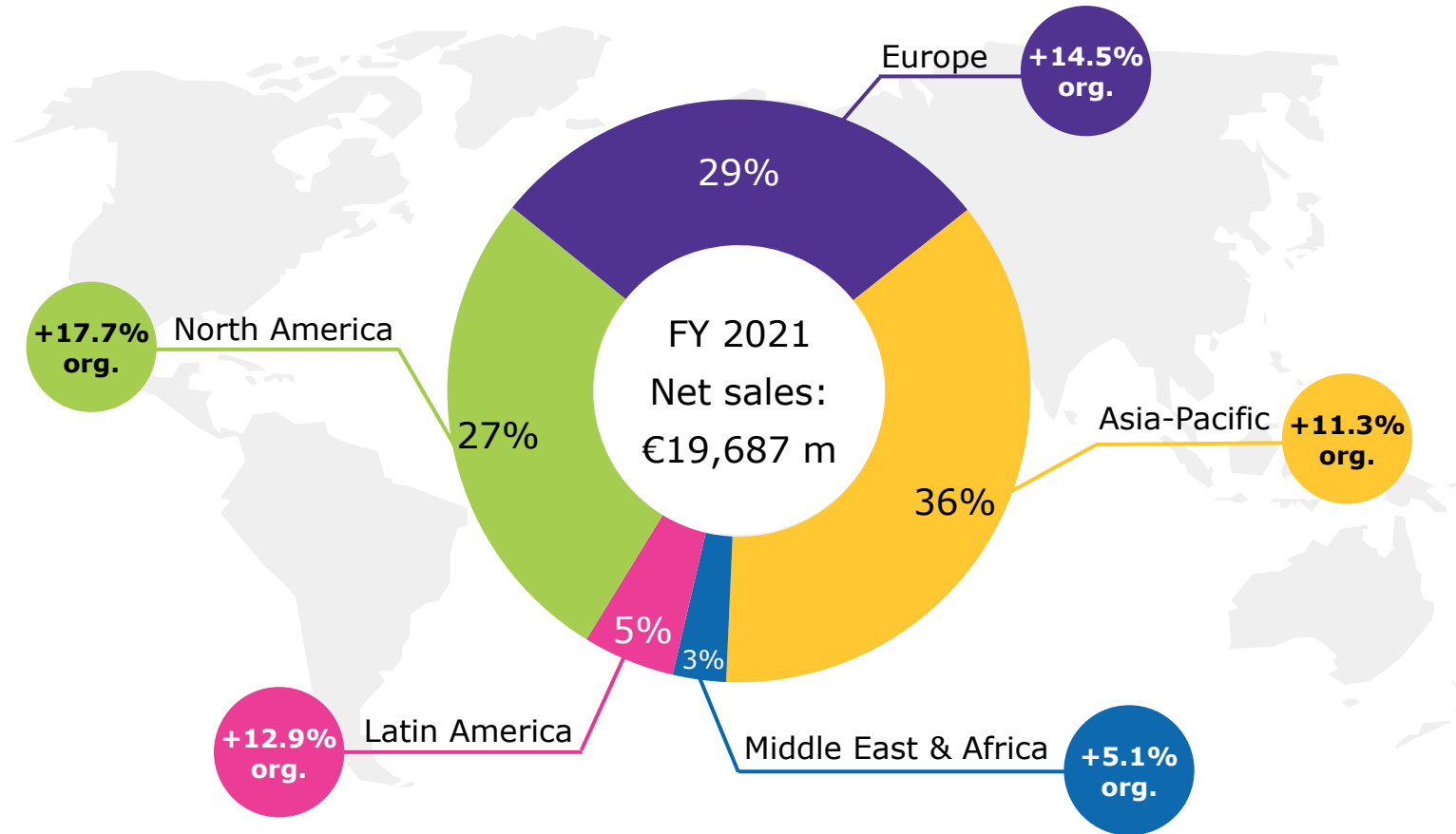
€8.50 – 9.00

€8.72



Strong Life Science continues to be primary growth driver across all regions

Regional breakdown of net sales [€m]



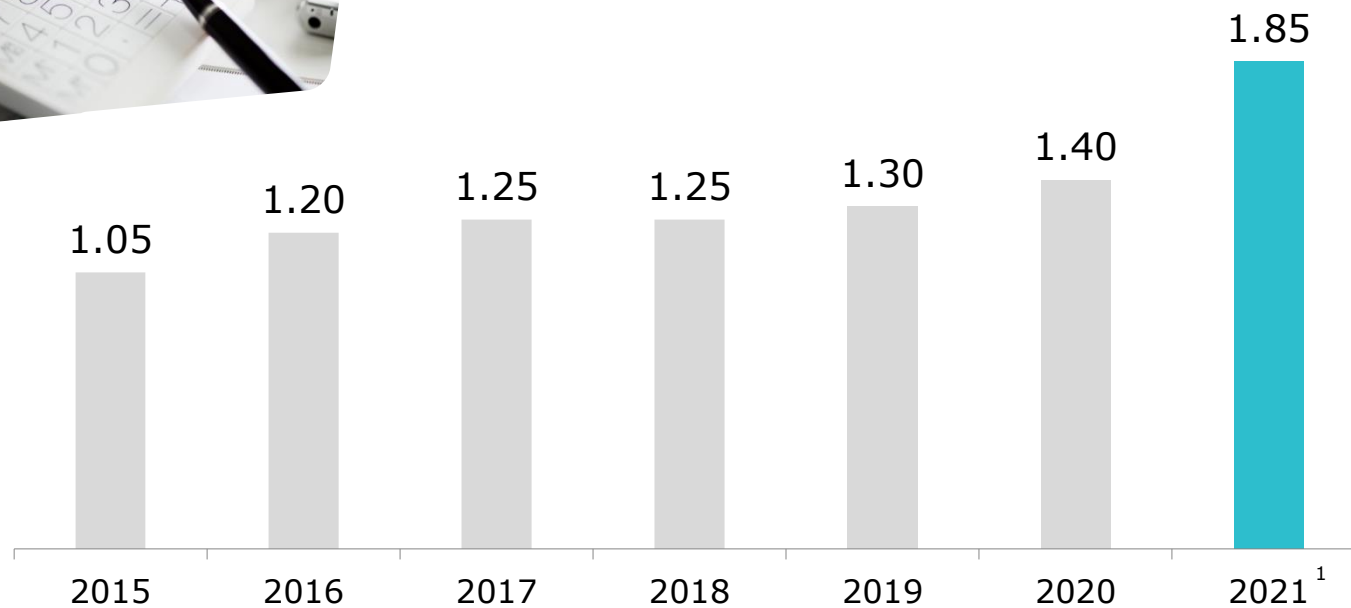
Regional organic development

- APAC: Process & Semiconductor Solutions, drive +11% growth
- Europe: Process Solutions and Research Solutions remain primary growth drivers, Fertility and recent Healthcare launches also contributing
- North America: Process Solutions, Research Solutions, and Bavencio® top three growth drivers, further supported by Fertility & Semiconductor Solutions
- LATAM growth driven primarily by CM&E, Applied Solutions and Fertility
- Fertility continues driving ME&A growth



Strong company performance drives all time high payment to shareholders

Dividend¹ development 2015 - 2021



2021 dividend

- Dividend of €1.85 (+32% YoY) per share proposed¹ for 2021
- Payout ratio of 21.2% of EPS pre in 2021; aiming for 20% to 25%
- Dividend yield² of 0.8%

¹Final decision is subject to Annual General Meeting approval

²Calculated with 2021 year-end share price of €227.00 per share.



02

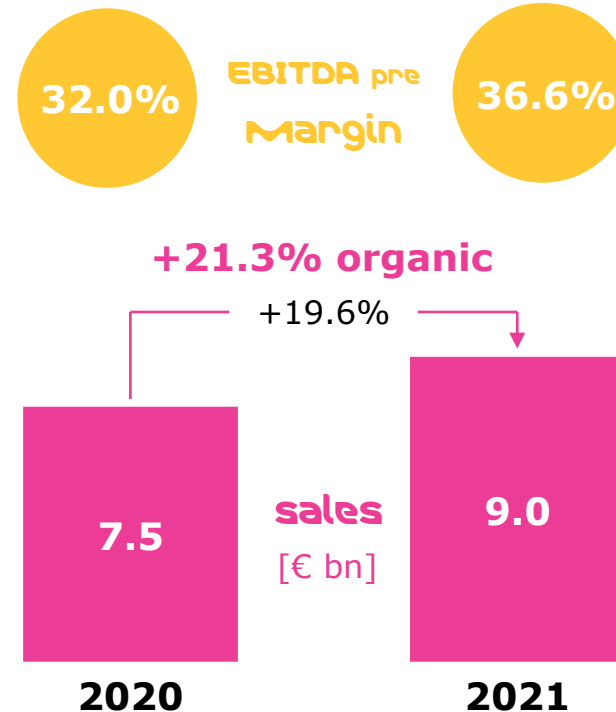
strategic
REVIEW



Life Science: +12% org. growth from core business driven by strong industry position, further supported by +9% org. growth from COVID-19

Business performance

- Successfully delivering record sales (+21% org.) and EBITDA pre (+38% org.) with Process Solutions as key driver
- Strong core business drives majority of growth in 2021 (+12% org.), supported by double-digit performance in all businesses
- Additional business from COVID-19, almost tripling y-o-y to total sales of €1.15 bn, growth leveling out in H2 as anticipated
- Strong EBITDA pre growth and exceptional margin level reflect favorable mix, positive pricing, and operating leverage
- Margin slightly lower in H2 amid planned ramp-up of strategic investments



Sector focus

- Continuous **focus on key growth trends** as leading diversified life science player
- **Strengthening the core**
 - Significant capacity and regional network expansion to enable growth of key portfolios
 - Driving productivity to maximize output from existing assets amid surging demand
 - Go-to-market optimization including upgraded e-commerce platform and collaboration centers
- **Expanding in high growth segments**
 - Organic & inorganic scale up to become leading multimodality CDMO (mAbs, ADCs, hp-APIs, viral vectors, mRNA); Amptec & Exelead¹ M&A
 - Increasing focus on innovation and digital to complement holistic offering (e.g. AI, Bio4C)
 - Driving growth in emerging regions, esp. China

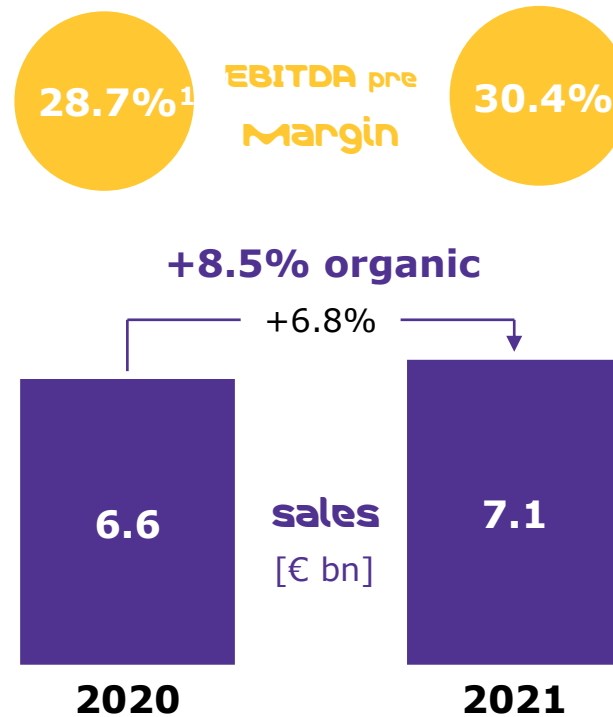


Healthcare: +8.5% org. growth driven by recent launches, complemented by strong Fertility recovery



Business performance

- Strongest organic growth in past 5 years
- Oncology up +28% org. mainly driven by Bavencio® mUC 1L and supported by strong Erbitux performance
- Mavenclad® drives slight Neurology & Immunology franchise growth, despite continued Rebif® decline and suppressed dynamic high-efficacy market
- Established portfolio up +3% org. as Fertility recovery more than offsets Rebif®; around flat CM&E business with fading China VBP impact (as of Q4)
- Sales growth, Bavencio® milestones and stringent cost management drive +17% EBITDA pre growth and margin expansion¹



Sector focus

- **Well positioned** in a dynamic environment, **focused leadership in R&D**
- **Pipeline with transformative potential**
 - Novel mechanisms with potential to redefine SoC in MS, Lupus and several cancer types
 - 14 clinical development programs underway
 - Evobrutinib and Xevinapant PhIII assets with first-in-class opportunities
- **Recent Launches**
 - Significant opportunity to drive further growth of Bavencio® in mUC 1L
 - Mavenclad® holding or gaining share in most markets amid muted high-efficacy market
- **Established Portfolio**
 - Resilient CM&E business across diversified geographies; strengthened Fertility leadership & China resume growth

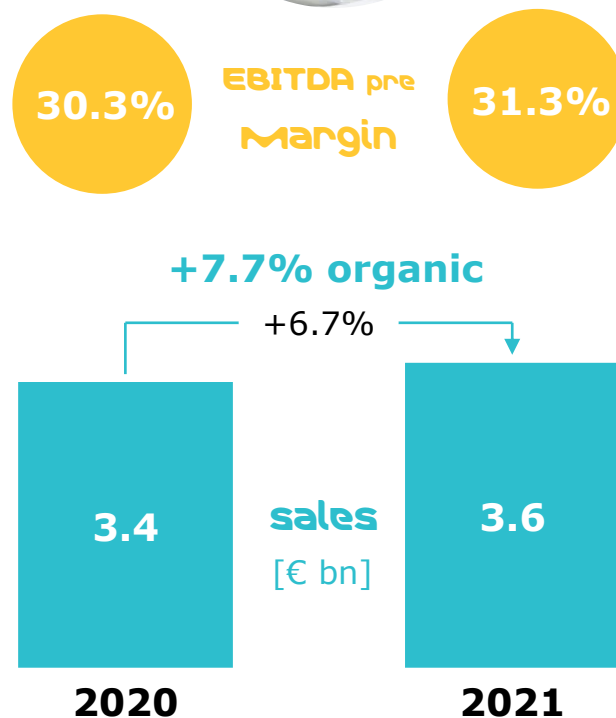
¹Excluding €365 m Biogen Provision Release, the reported margin is 34.1%;
 Acronyms: mUC = metastatic urothelial cancer, CM&E = Cardiology Metabolism & Endocrinology, HE = High Efficacy



Electronics: Shifting to accelerated growth ambitions

Business performance

- Strong organic sales growth of +8% delivers on “Bright Future” turn-around commitment
- Semiconductor Solutions growth accelerating above mid-term guidance well into double-digits, with additional support from DS&S project business
- Display Solutions rate of decline nearly halves to -6% org. vs. COVID-19-impacted LY; OLED increasingly compensates decline
- Surface Solutions with double-digit organic growth amid market recovery
- Margin expansion to 31% supported by Versum synergies, despite raw materials & logistic headwinds in H2



Sector focus

- Successful “Bright Future” transformation; **€85 m Versum cost synergies** 2022 target already **delivered in 2021**
- **Ready for growth** with “Level Up” program
- **Fueling accelerated growth ambitions**
 - Aiming to invest more than €2 bn capex from 2021 to 2025, primarily to support capacity expansion of Semi customers
 - Driving profitable innovation & partnerships accelerating use of Big Data, AI & IoT
 - Strengthening manufacturing sites and opening new facilities to continue localizing footprint close to customers
 - Supporting node transitions and accelerating customer innovations in leading edge technologies



03

Financial Overview



FY 2021: Overview

Key figures

[€m]	FY 2020	FY 2021	Δ	(Excl. Biogen provision reversal)	
				FY 2020	Δ
Net sales	17,534	19,687	12.3%		
EBITDA pre	5,201	6,103	17.3%	4,836	26.2%
Margin (in % of net sales)	29.7%	31.0%	1.3pp	27.6%	3.4 pp
EPS pre	6.70	8.72	30.1%	6.07	43.7%
Operating cash flow	3,477	4,616	32.7%		

[€m]	Dec. 31, 2020	Dec. 31, 2021	Δ
Net financial debt	-10,758	-8,753	-18.6%
Working capital	3,938	4,207	6.8%
Employees	58,096	60,335	3.85%

Comments

- Sales up +12%, driven by strong growth across all sectors, particularly Life Science
- 340 bps uplift in underlying EBITDA pre margin¹ fueled by strong Life Science performance and operating leverage
- EPS pre growth of +44%¹ mainly driven by EBIT pre contribution, further supported by better financial result
- Operating cash flow up +33% supporting strong net debt reduction of €2 bn
- Sound working capital management ensures growth significantly below sales
- Headcount mainly driven by Life Science

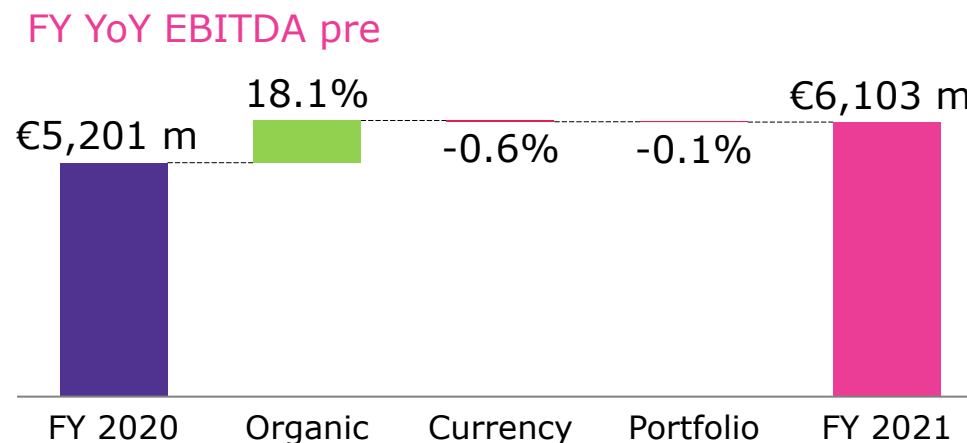
¹Excluding €365 m Biogen Provision Release



FY 2021: +14% org. growth mainly driven by double-digit growth of Life Science, supported by strong Healthcare and Electronics performance

FY YoY Net Sales	Organic	Currency	Portfolio	Total
Life Science	21.3%	-1.6%	0.0%	19.6%
Healthcare	8.5%	-1.4%	-0.3%	6.8%
Electronics	7.7%	-0.9%	0.0%	6.7%
Group	13.8%	-1.4%	-0.1%	12.3%

- Life Science: Record growth across all business units; +31% org. in Process Solutions driven by strong core business and COVID-19 demand; Research and Applied grow +15% org. and +9% org.
- Healthcare: Recent launches up +60% org. on top of growing established portfolio (+3% org.) supported by Fertility recovery; driving strong +8.5% org. growth in the sector
- Electronics: Double digit growth of Semiconductor Solutions (+15% org.) and Surface recovery (+13% org.) more than offset Display decline (-6% org.), driving +8% org. growth overall



- EBITDA pre up +18% org. (+27% org. excl. 2020 Biogen provision reversal), ahead of sales
- Life Science operating leverage main driver for margin expansion, supported by stringent cost management across the enterprise
- Slight negative FX effects driven primarily by USD, JPY & TRY, partly offset by positive effects from CNY



FY 2021: Reported figures – comps impacted by Biogen provision reversal

Reported results

[€m]	FY 2020	FY 2021	Δ
EBIT	2,985	4,179	40.0%
Financial result	-354	-255	-28.1%
Profit before tax	2,630	3,924	49.2%
Income tax	-637	-859	34.9%
<i>Effective tax rate (%)</i>	24.2%	21.9%	-2.3pp
Net income	1,987	3,055	53.7%
EPS (€)	4.57	7.03	53.8%

Comments

- EBIT growth of +40% mainly driven by leveraged business growth, understated by €365 m for Biogen provision reversal in 2020
- Improved financial result reflects lower interest expenses driven by continuous deleveraging
- Lower effective tax rate due to favorable country mix, primarily in Life Science
- Net income and EPS reflect EBIT growth and improved financial result



Life Science Q4: Sequential growth drives another record quarter; 14% org. growth normalizing but still well above mid-term guidance

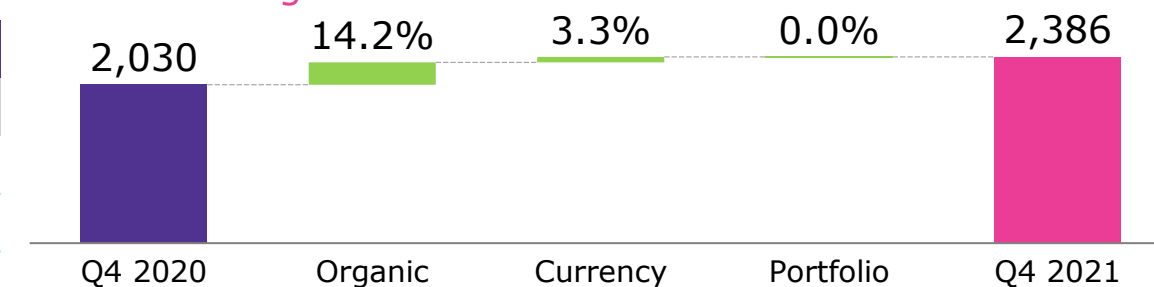
Life Science P&L

[€m]	IFRS		Pre	
	Q4 2020	Q4 2021	Q4 2020	Q4 2021
Net sales	2,030	2,386	2,030	2,386
M&S*	-531	-584	-529	-582
Admin	-76	-85	-73	-89
R&D	-87	-101	-86	-99
EBIT	451	628	457	643
EBITDA	650	837	-	-
EBITDA pre	653	840	653	840
(in % of net sales)	32.2%	35.2%	32.2%	35.2%

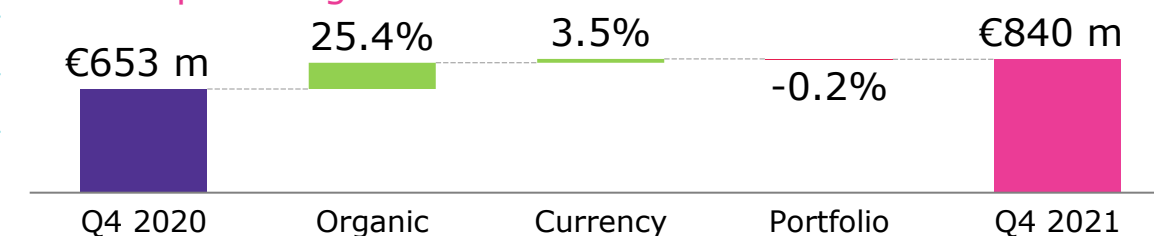
Comments

- Process Solutions: Strong organic growth of +25%, majority of growth driven by robust core business performance, continuously supported by COVID-19 demand; comps also include significant COVID-19 business
- Research Solutions: Slight organic growth of +1.5% against strong comps, elevated by Q4 2020 post lockdown laboratory rebound and additional COVID-19 business
- Applied Solutions: +7% organic growth ahead of mid-term guidance, despite no significant COVID-19 tailwind

Net sales bridge



EBITDA pre bridge



- M&S in % of sales declining from 26% to 24% due to strong top line leverage, higher in absolute terms with logistics being the largest driver
- Higher R&D spend in absolute terms with continued focused investments in high growth and emerging segments, e.g. next gen bioprocessing
- Strong EBITDA pre growth (+25% org.) again exceeding sales growth driven by strong performance, favorable product mix & pricing; margin expansion vs. LY sequentially levelling out as anticipated



Healthcare Q4: Continued strong Bavencio[®] ramp up and strong growth in Fertility drive +4.7% organic growth in the sector

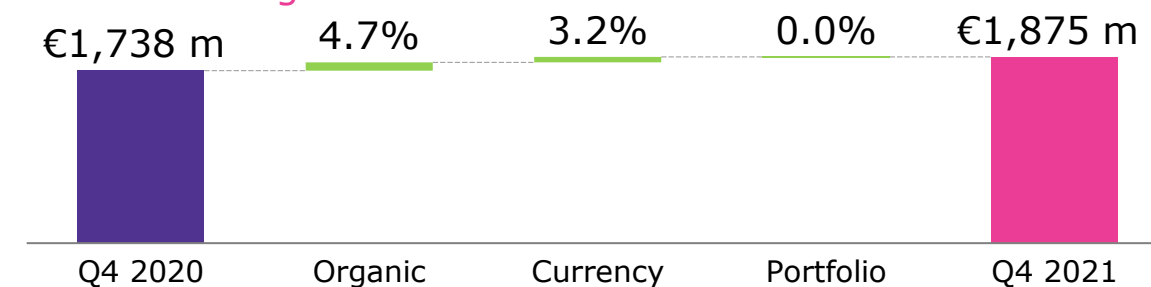
Healthcare P&L

[€m]	IFRS		Pre	
	Q4 2020	Q4 2021	Q4 2020	Q4 2021
Net sales	1,738	1,875	1,738	1,875
M&S*	-449	-452	-414	-453
Admin	-84	-84	-80	-79
R&D	-479	-395	-454	-392
EBIT	305	424	397	407
EBITDA	433	518	-	-
EBITDA pre	525	498	525	498
(in % of net sales)	30.2%	26.6%	30.2%	26.6%

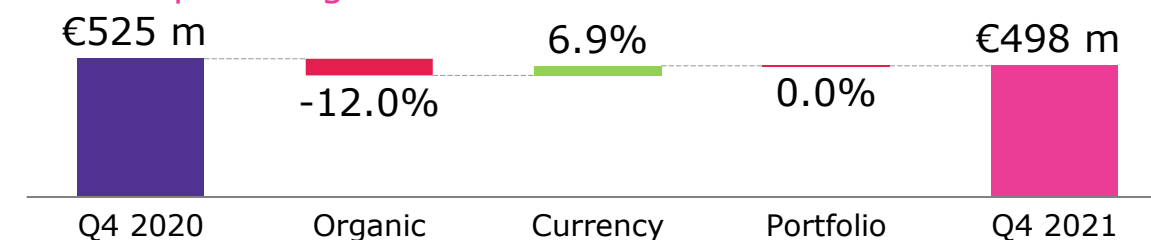
Comments

- Oncology up +21% org., primarily driven by continuous strong uptake of Bavencio[®] (+132% org.) supported by ongoing Europe launch
- Mavenclad[®] growing organically amid suppressed dynamic market, not fully offsetting Rebif[®] org. decline of -12%
- CM&E returning to growth (+3% org.) post VBP impact, continuous strong growth in Fertility (+9% org.)
- M&S increase driven by ramp up of promotional activities vs. pandemic-related lower activity level in prior year
- Bintrafusp study termination and related provisions in Q3 main driver for lower absolute R&D level
- EBITDA pre and margin decline driven by phasing in other operating expenses & income from BD deals and missing bintrafusp income, as well as production yield fluctuations, in parts compensated by +7% FX

Net sales bridge



EBITDA pre bridge



Electronics Q4: +24% growth in Semi continues to drive double-digit organic sales growth for the sector

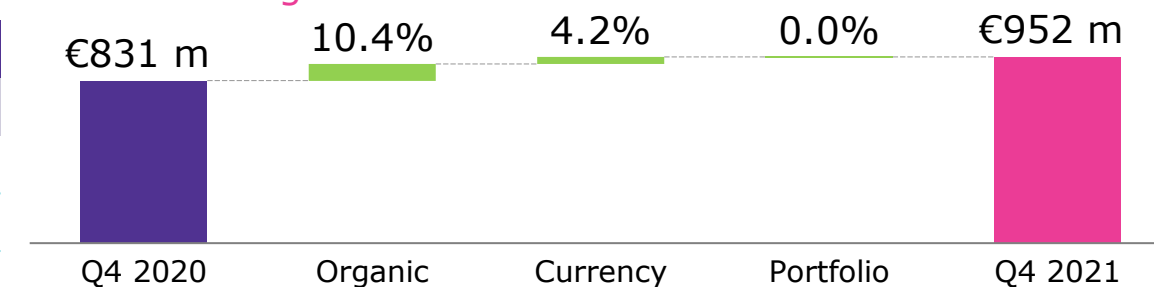
Electronics P&L

[€m]	IFRS		Pre	
	Q4 2020	Q4 2021	Q4 2020	Q4 2021
Net sales	831	952	831	952
M&S*	-136	-154	-132	-152
Admin	-41	-35	-34	-33
R&D	-68	-72	-66	-72
EBIT	79	140	108	166
EBITDA	228	282	-	-
EBITDA pre	246	300	246	300
(in % of net sales)	29.6%	31.5%	29.6%	31.5%

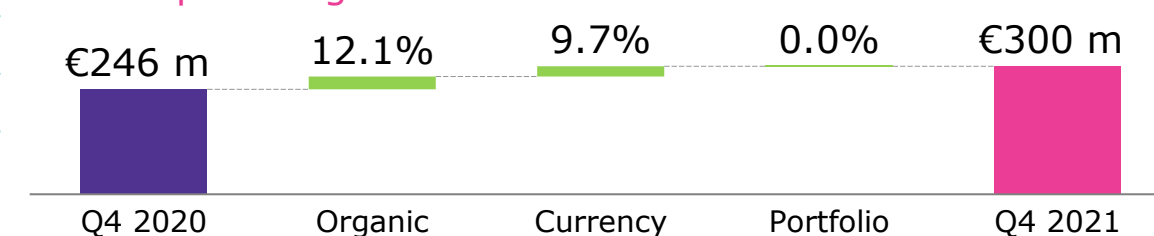
Comments

- Semiconductor Solutions: Record organic sales growth of +24% fueled by over +20% org. growth in materials; additional DS&S project business expected to last throughout all of 2022
- Display Solutions: Strong OLED performance and growth in remaining portfolio party offset LC decline (-10% org. overall)
- Surface Solutions: Slight organic growth of +1% against higher comps amid business recovery onset in prior year quarter

Net sales bridge



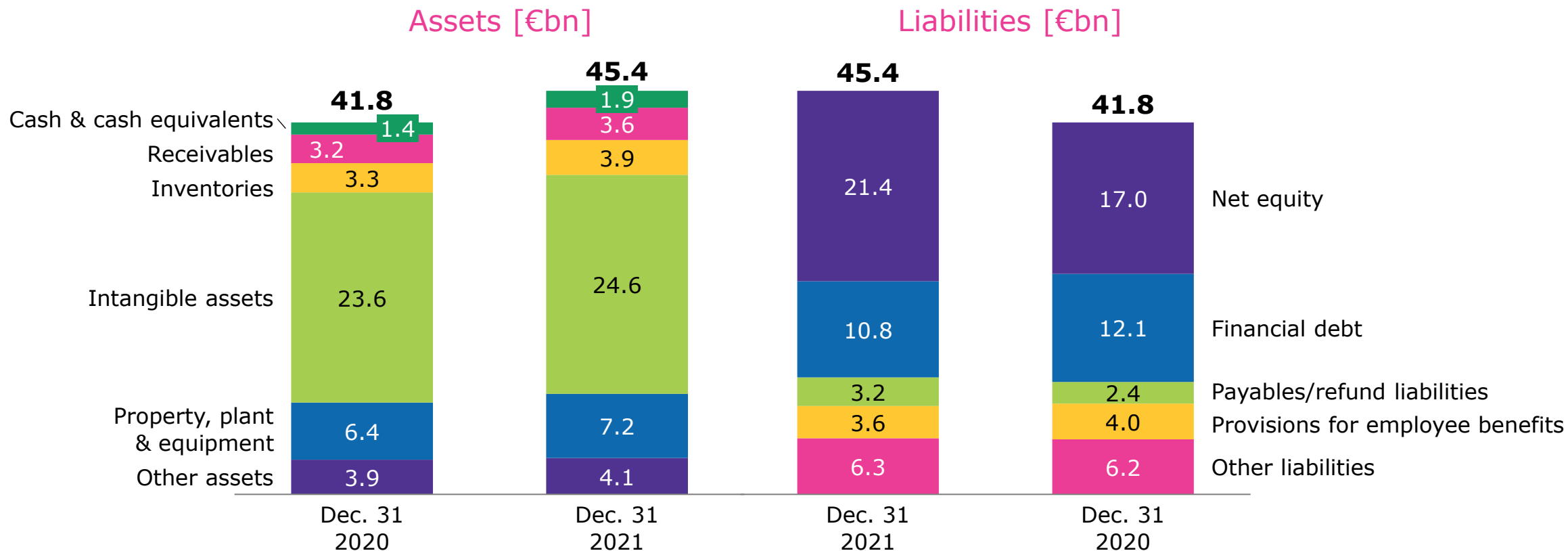
EBITDA pre bridge



- M&S flat as percentage of sales, absolute growth mainly driven by higher logistic cost from price and volume increases
- R&D with absolute increase driven by investments in Semiconductor Materials business
- EBITDA pre growth and margin expansion driven by strong business performance (+12% org.) and favorable FX development (+10%)



Balance sheet



- Higher cash level driven by strong operating cash flow
- Receivables & inventories driven by strong sales growth and FX effects
- Increase in intangible assets primarily driven by FX effects
- PP&E reflects ongoing investments supporting growth ambitions
- Lower financial debt reflects deleveraging driven by strong performance
- Reduction in provisions for employee benefits driven by actuarial gains from higher interest rates
- Equity ratio up to 47% (vs. 41% in 2020) driven by retained earnings and translational FX effects



Cash flow statement

Q4 2021 – Cash flow statement

[€m]	Q4 2020	Q4 2021	Δ
Profit after tax	440	807	366
D&A	496	475	-21
Changes in provisions	185	-50	-235
Changes in other assets/liabilities	-48	-192	-144
Other operating activities	-60	16	76
Changes in working capital	275	-11	-285
Operating cash flow	1,288	1,045	-243
Investing cash flow	-98	-352	-254
thereof Capex on PPE	-609	-199	409
Financing cash flow	-1,381	-319	1,062

Cash flow drivers

- +83% growth in profit after tax driven by strong business performance, lower tax rate and improved financial result
- Changes in provisions primarily driven by lower restructuring provisions
- Other assets & liabilities mainly driven by Life Science tax prepayments in U.S.
- Working capital primarily driven by higher inventories to support sales and supply security in Life Science and Electronics
- Lower operating cashflow reflects working capital and tax prepayment
- 2020 investing cash flow suppressed by reversal of Q3 temporary excess cash investment, 2020 PPE elevated by Burlington and Tempe purchases
- LY financing cash flow reflects bank loans and commercial paper repayment



04

ESG
update



Delivered on all 2021 goals; optimally positioned to accomplish 2030 ESG ambition

Tasks

Development In place

Results



Analysis of requirements: Strategy, business, regulation, stakeholders

Ongoing due to developing field of ESG stakeholder expectations and new regulations



Build effective **data platform** for **internal steering**

Feed in internal & external data, industry benchmarks, **modelling projects** in 2021



Develop **SBV tool**¹ to measure **product sustainability value**

SBV tool **developed and tested** in 8 cases by 2021



Develop ESG **KPIs** for **reporting**

ESG KPIs developed and evaluated for reporting in 2021



Link ESG² to **Board compensation** with 20% sustainability factor from 2022 on

Approved by AGM, qualitatively included, **quantitative factor developed in 2021**



Further incorporate ESG in R&D, Controlling, M&A and Supply Chain

ESG-Framework M&A/Capex in 2021, progress in supply chain, controlling, R&D



Decide on **dedicated investments** and **initiatives** to achieve targets

Business strategies and priorities: **decisions & budgeting** in 2021

¹Sustainable Business Value: Dive in deeper and read the research article on the [SBV method](#); ²ESG: Environmental, Social, Governance



Improved transparency on sustainability following major standards



LTIP: Long-Term Incentive Plan
GRI: Global Reporting Initiative
TCFD: Task Force on Climate-related Financial Disclosures
SASB: Sustainability Accounting Standards Board
SBTi: Science-based Target initiative



05

outlook &
guidance



Group

Full-year 2022 guidance

Net sales:

Strong organic growth
Positive FX of 1% to 4% YoY

EBITDA pre:

Strong organic growth
Positive FX of 2% to 5% YoY



Group 2022 business sector guidance¹

Life Science



Net sales

- Strong organic growth
- Strong core business, Process Solutions COVID-19 sales of up to ~€900 m
- Process Solutions as main growth driver

EBITDA pre

- Strong organic growth
- Slight to moderate positive FX

Healthcare



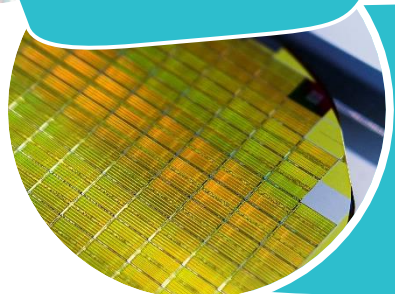
Net sales

- Solid organic growth
- Mainly driven by Mavenclad[®] and Bavencio[®]
- CM&E back to growth post VBP

EBITDA pre

- Moderate to solid organic growth
- Mainly driven by Mavenclad[®] sales
- Solid to strong positive FX

Electronics



Net sales

- Solid to strong organic growth
- Strong contribution by Semiconductor Solutions
- Continuous strong OLED performance

EBITDA pre

- Solid organic growth
- Solid to strong positive FX



Appendix



Additional financial guidance 2022

Further financial details

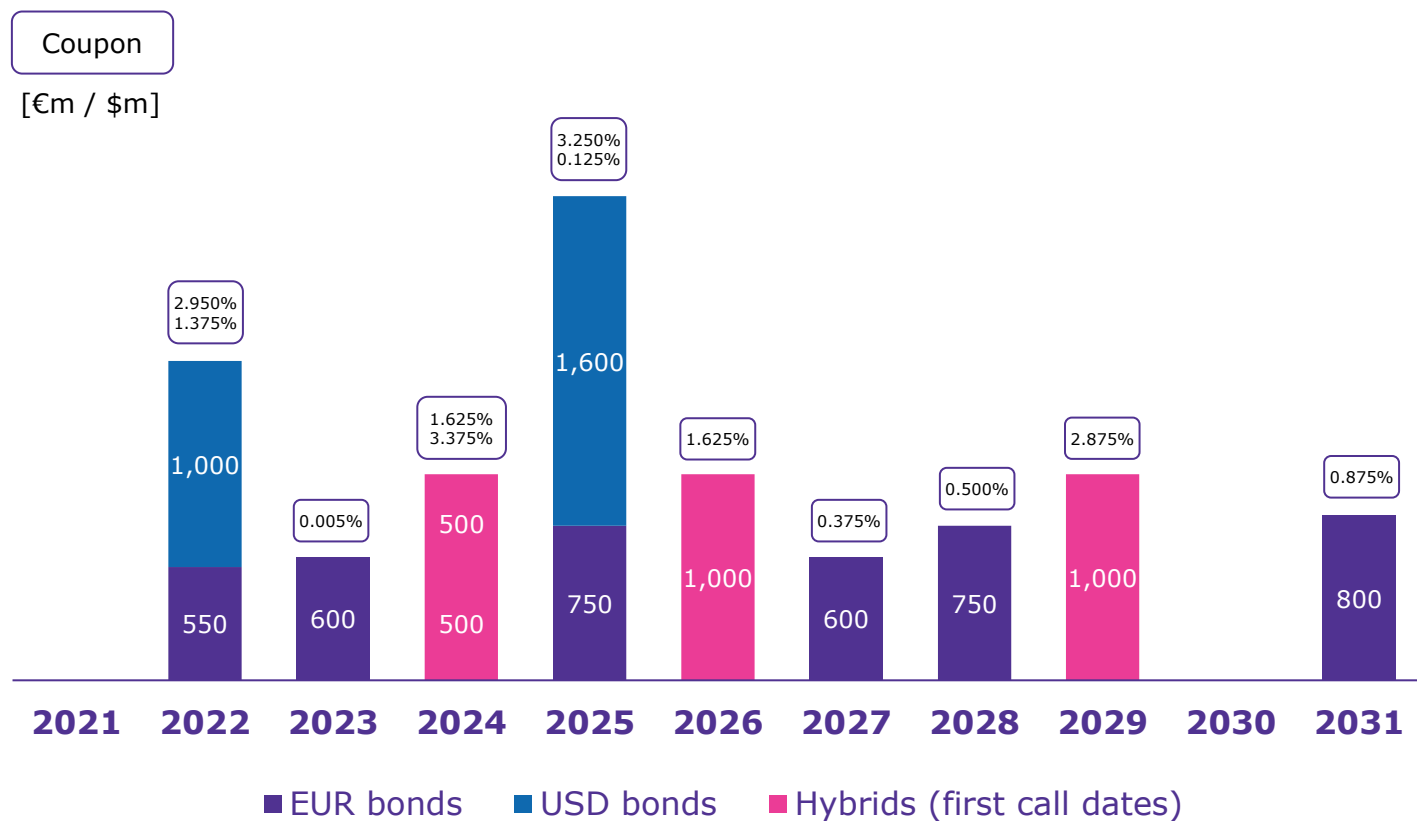
Corporate & Other EBITDA pre	Slightly higher costs driven by hedging
Interest result	~ €-150 to -190 m
Effective tax rate	~22% to 24%
Capex on PPE ¹	~€1.6 to 1.7 bn
Hedging/USD assumption	FY 2022 hedge ratio ~50% at EUR/USD ~1.16
2022 Ø EUR/USD assumption	~1.11 to 1.16

¹Based on gross additions to PPE on balance sheet in fiscal year, to reflect planned Capex expansion more accurately



Credit details

Maturity profile as of Dec 31, 2021



Credit rating information

	LT Rating	Since	Outlook	ST Rating
Moody's	A3	21.10.21	Stable	P-2
S&P Global	A	29.05.13	Stable	A-1
SCOPE	A-	11.10.21	Positive	S-1



Clear Metrics to drive execution and progress towards 2030 ambition

Goal	Metric	2021 (2020)	Target
1	Percentage of newly published patent families with positive sustainability impact	from 2022	n.a.
	People treated with our Healthcare products*	2021 (April)	1 bn people ambition ¹ : HC
2	Percentage of women in leadership positions	36% (35%)	Gender parity by 2030 ²
	Percentage of employees trained on sustainability	from 2022	n.a.
	Percentage of relevant suppliers covered by valid sustainability assessment*	21% ^{3a} /65% ^{3b} (n.a.)	visible increase until 2024 ³
	Environment, Health and Safety (EHS) Incident Rate	3.9 (3.4) ⁴	As low as possible
	Violations of Global Social and Labor Standards Policy	41 (29) ⁵	n.a.
	Lost Time Injury Rate (LTIR)	1.2 (1.3)	<1.0 by 2025 ⁶
3	Greenhouse gas emissions Scope 1+2*	1,843 kt (2,028 kt)	-50% by 2030 ⁷
	Greenhouse gas emissions Scope 3	5,716 kt (5,030 kt)	-1,500 kt CO ₂ e by 2030 ⁸
	Percentage of purchased electricity from renewable resources	30% (27%)	80% by 2030
	Company Waste Score (WS)	2021 (April)	-5% by 2025 ⁹
	Company Water Intensity Score (WIS)	from 2022	-10% by 2025 ¹⁰
	Wastewater quality: no harmful emission residues	from 2022	100% completion by 2030 ¹¹

*LTIP relevant

¹92 mio HC + 90.5 mio Prazi in 2020

²considers room for non-binary people

³by a)number, b)purchase volume

⁴incidents + severity vs. man-hours

⁵confirmed violations

⁶accidents with min. 1 day of missed work per 1 mio. man-hours

⁷vs. 2020 ~2,100 kt CO₂e

⁸to be updated after validation of new SBTi commitment

⁹vs. 2016 WS 443

¹⁰vs. 2020 (updated) WIS considering local availability of water and no. of man-hours

¹¹below scientifically defined threshold



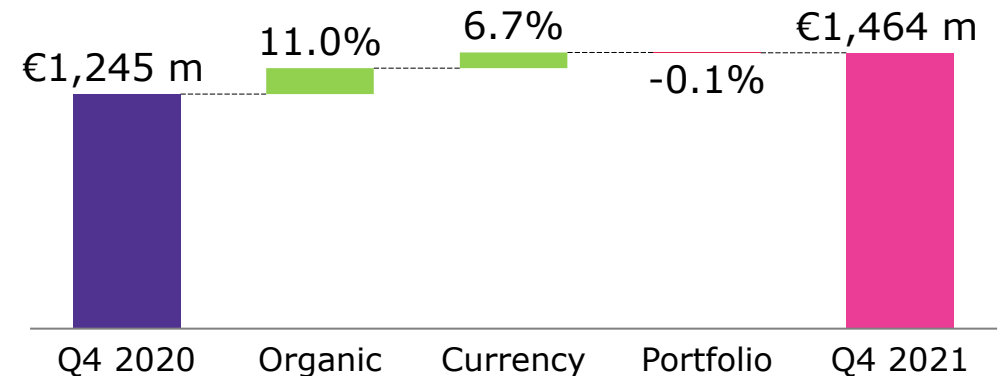
Q4 2021: Double-digit growth of Sales and EBITDA pre, Life Science business performance remains main contributor

Q4 YoY Net Sales

	Organic	Currency	Portfolio	Total
Life Science	14.2%	3.3%	0.0%	17.5%
Healthcare	4.7%	3.2%	0.0%	7.9%
Electronics	10.4%	4.2%	0.0%	14.7%
Group	9.9%	3.4%	0.0%	13.4%

- Double-digit org. sales growth of +14% in Life Science, mainly driven by outstanding +25.5% organic growth of Process Solutions
- Healthcare up +4.7% organically, driven by Oncology (+20.6% org) and Fertility recovery (+8.8% org.)
- +24% organic growth in Semiconductor Solutions and favorable FX development partially offset by organic decline of -10.5% in Display Solutions, resulting in +14.7% growth in Electronics

Q4 YoY EBITDA pre



- EBITDA pre growing +11% organically driven by higher EBIT and decrease in D&A
- Margin expansion mainly due to strong Life Science performance
- Favorable FX responsible for +6.7% growth



Q4 2021: Overview

Key figures

[€m]	Q4 2020	Q4 2021	Δ
Net sales	4,599	5,213	13.4%
EBITDA pre	1,245	1,464	17.6%
<i>Margin (in % of net sales)</i>	27.1%	28.1%	1.0pp
EPS pre	1.57	2.06	31.2%
Operating cash flow	1,288	1,045	-18.9%

[€m]	Q4 2020	Q4 2021	Δ
Net financial debt	-10,758	-8,753	-18.6%
Working capital	3,938	4,207	6.8%
Employees	58,096	60,335	3.85%

Comments

- Net sales up +13%, driven by strong org. performance across all sectors, particularly Life Science
- EBITDA pre up +18%, driven primarily by Life Science and Electronics
- EBIT pre contribution main driver for EPS pre improvement
- Operating cash flow down -19% from tax cash-out and inventory build up to serve sales and ensure supply security
- Sound working capital management ensures growth significantly below sales growth



Q4 2021: Reported figures

Reported results

[€m]	Q4 2020	Q4 2021	Δ
EBIT	611	1,039	70.0%
Financial result	-52	-47	-10.0%
Profit before tax	559	992	77.4%
Income tax	-119	-185	56.1%
<i>Effective tax rate (%)</i>	21.2%	18.7%	-2.6pp
Net income	436	802	84.1%
EPS (€)	1.00	1.84	84.0%

Comments

- Strong performance across all sectors, particularly in Life Science, drive +70% EBIT growth
- Improved financial result driven by ongoing deleveraging
- Income tax developing in line with profit before tax, tax rate temporarily below guidance corridor as FY closes above the lower end
- Higher net income and EPS reflect higher EBIT, improved financial result and lower tax rate



FY Life Science: Largest group contributor with +21.3% org. sales growth driven by all three business units

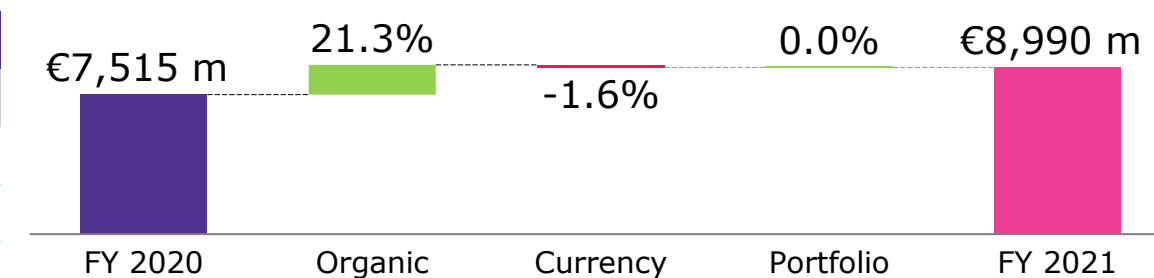
Life Science P&L

[€m]	IFRS		Pre adjustments	
	FY 2020	FY 2021	FY 2020	FY 2021
Net sales	7,515	8,990	7,515	8,990
M&S*	-1,995	-2,119	-1,992	-2,114
Admin	-354	-352	-322	-331
R&D	-313	-351	-312	-349
EBIT	1,599	2,479	1,619	2,519
EBITDA	2,387	3,257	-	-
EBITDA pre	2,405	3,286	2,405	3,286
(in % of net Sales)	32.0%	36.6%	32.0%	36.6%

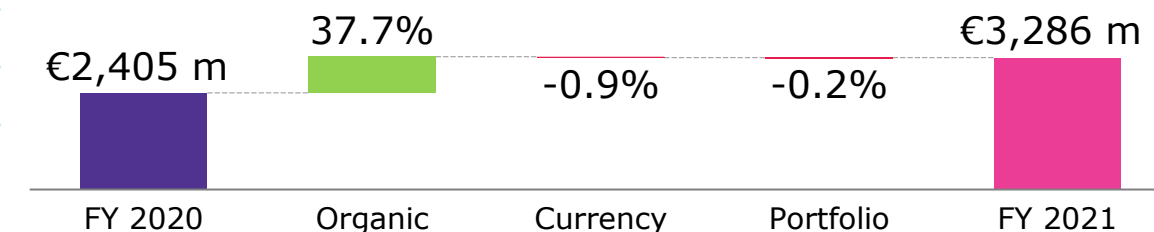
Comments

- +31% organic growth of Process Solutions with close to mid-teens growth in the core business and significant COVID-19 contributions; bioprocessing and formulation portfolios are the key drivers
- Research Solutions growing +15% org. due to strong core business and supported by additional growth opportunities from COVID in H1
- Applied Solutions growing +9% org. with robust performance across all business lines and customers segments

Net sales bridge



EBITDA pre bridge

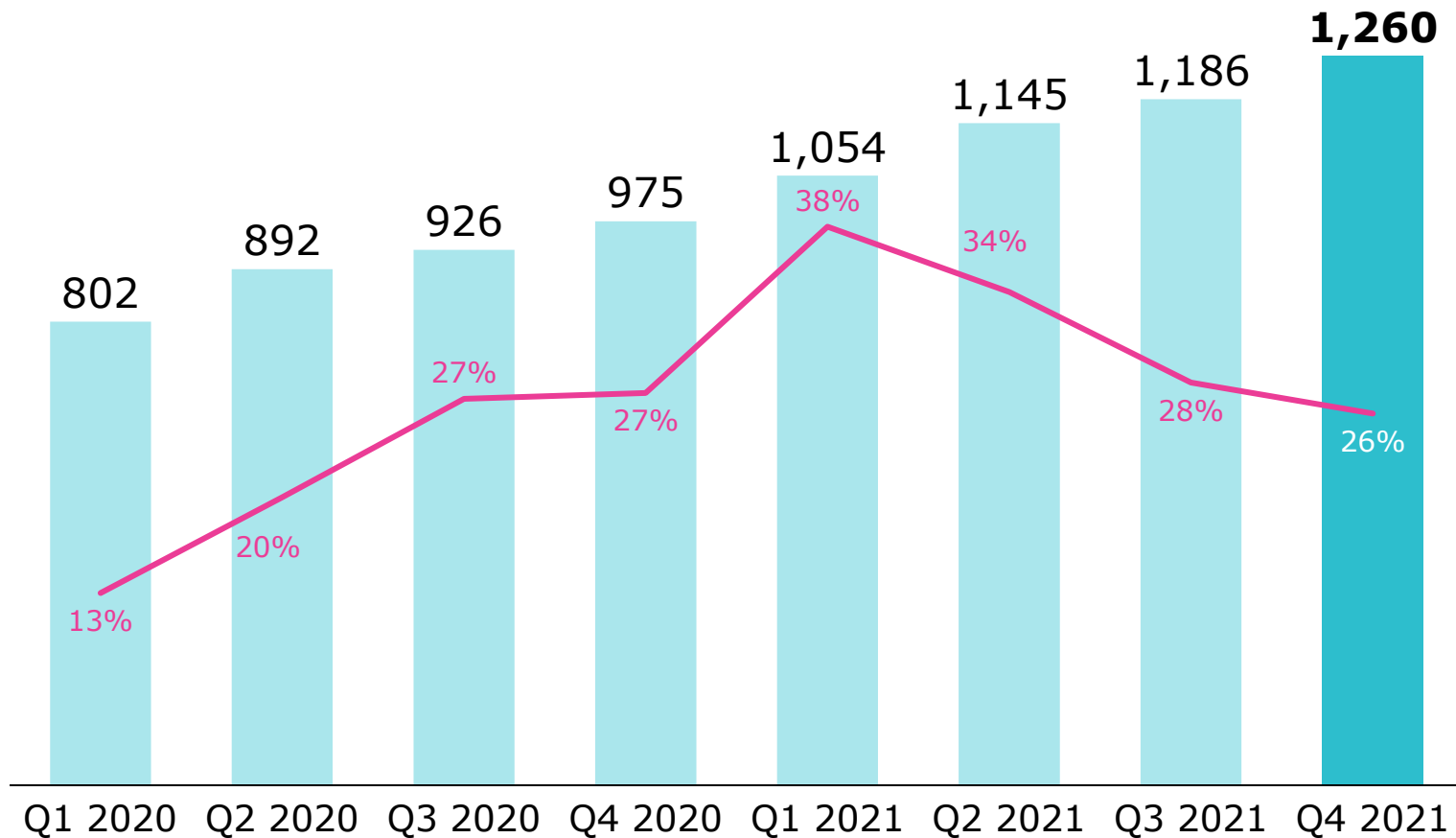


- M&S as a % of sales down from 27% to 24% due to strong operating leverage; absolute increase mainly driven by logistics cost
- Increased R&D costs primarily due to investments in strategic projects
- Outstanding operating leverage and favorable product mix lead to exceptional EBITDA pre margin level of 36.6%



BIG 3 - Process Solutions: Record Q4 2021 in absolute terms, declining growth rate against high comps

Sales development [€m] - org. growth [%]

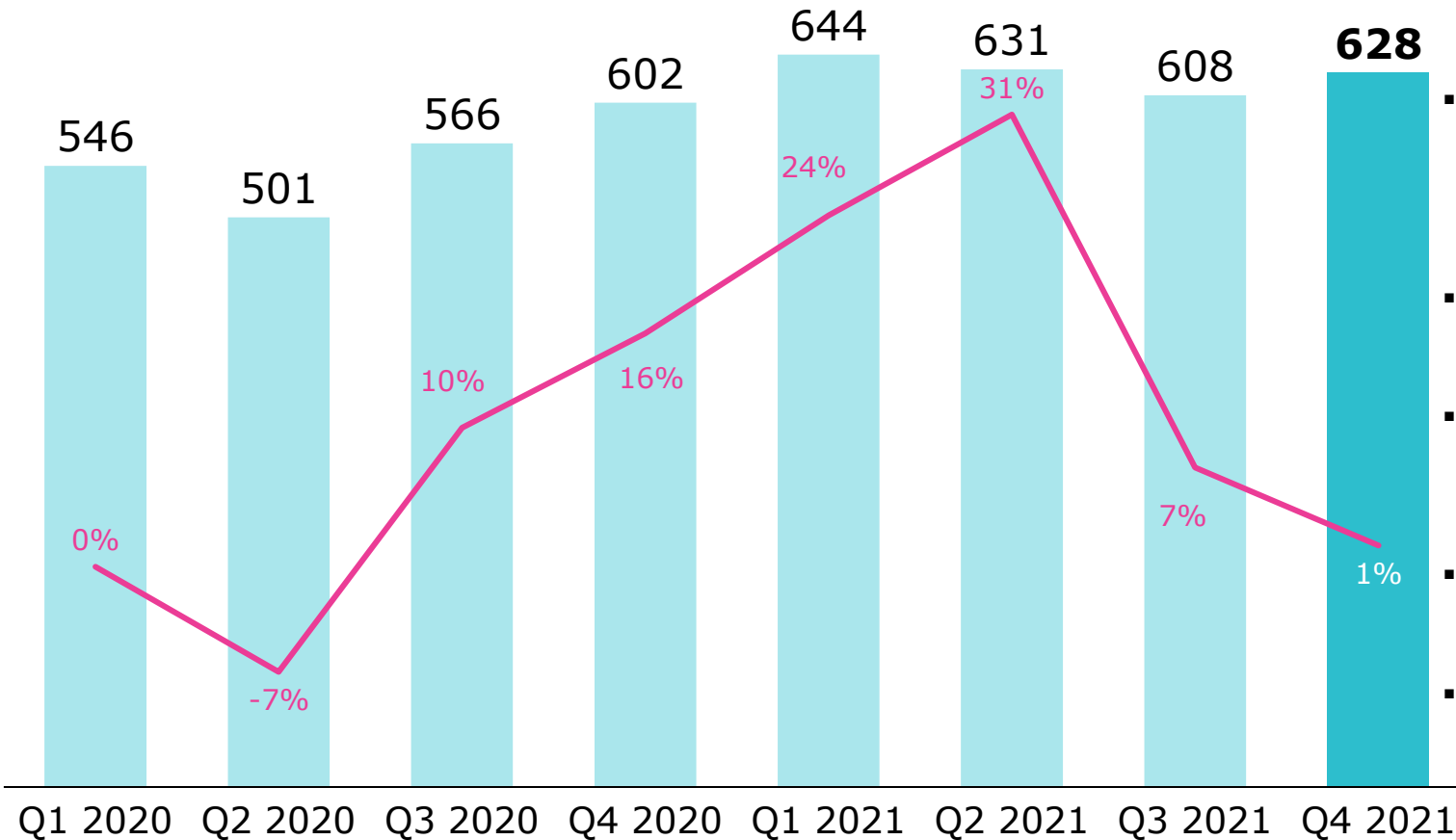


- Continued **strong core business** explaining >50% of Q4 growth; **additional COVID-19 demand** (mainly vaccine related) fading sequentially and facing tougher comps
- **BioProcessing remains biggest growth driver**, followed by formulations (e.g. lipids for mRNA)
- **Growth moderating further** as expected **amid rising comps**, including significant COVID-19 business
- Sequentially higher sales as output increases on the back of **ongoing productivity gains and successful capacity ramp-up**
- **Order intake growth** slowing further sequentially in Q4; slightly up Y-o-Y amid normalization against tough comps



Research Solutions: normalizing growth against rising comps

Sales development [€m] - org. growth [%]

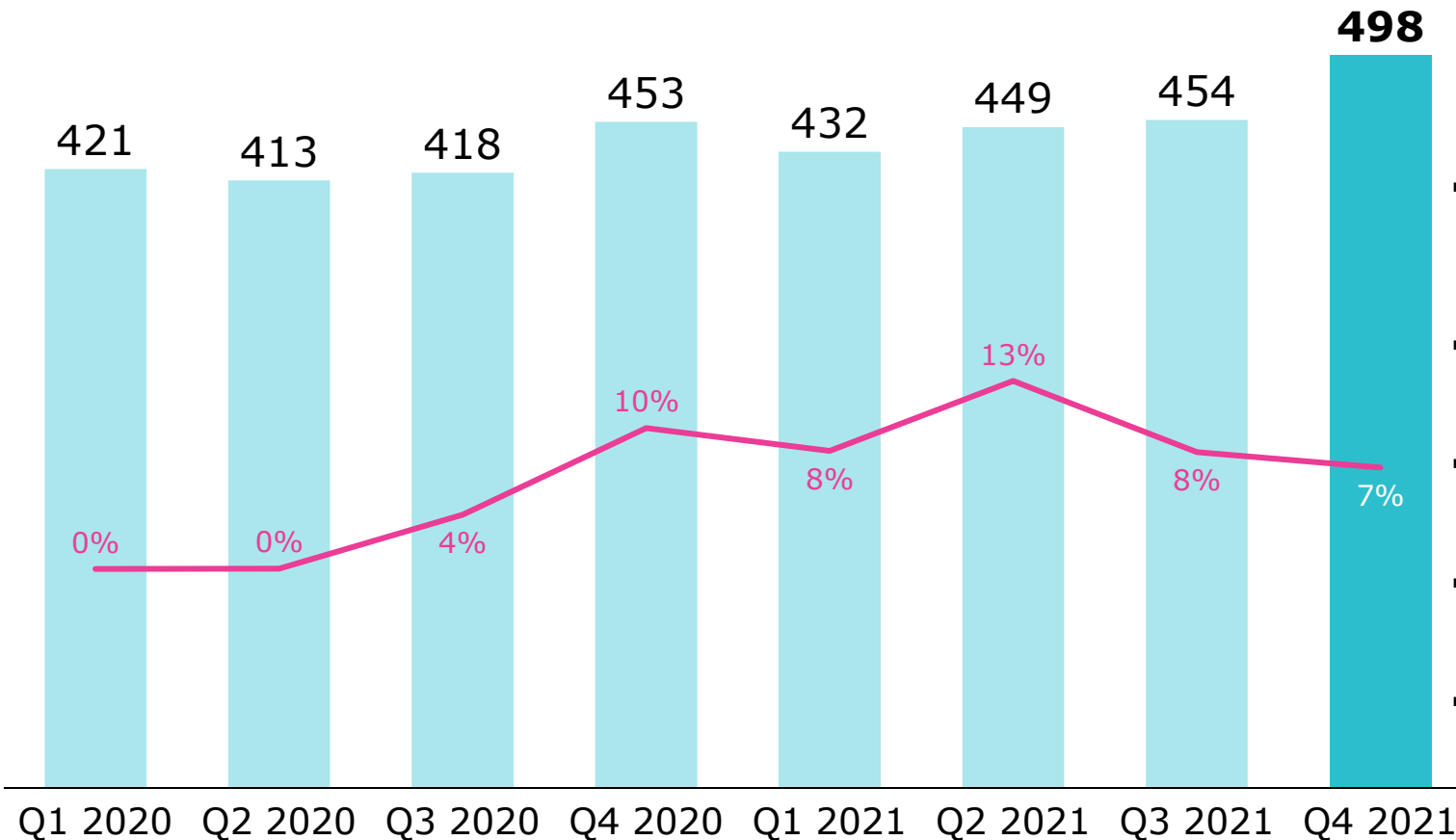


- **Organic growth slowing to +1.5% against strong comps** as Q4 2020 was elevated by post lockdown laboratory rebound and additional COVID-19 demand
- **Core business slightly growing** despite strong comps given recovery in Q4 2020
- **COVID-19 sales** (diagnostics raw materials) weighing on growth and **fading further** sequentially albeit at reduced pace
- **Stable development in NA and Europe**, all other regions growing
- **Industrial & Testing** and **Pharma & Biotech growing**, mitigated by declines in other customer segments



Applied Solutions: Record absolute sales and robust growth despite strong baseline

Sales development [€m] - org. growth [%]



- **Strong finish** with robust growth despite high comps with Q4 2020 benefitting from post-lockdown recovery
- **Core business as main driver** with broad-based performance across business lines
- **Small COVID-19-related sales contribution**, below Q4-2020
- All regions contributing to growth in Q4 with **North America** and **APAC** as key drivers
- All customer segments growing, led by **Diagnostics**



FY Healthcare: 8.5% org. growth driven by recent launches and Fertility recovery; underlying EBITDA pre growing +17% organically

Healthcare P&L

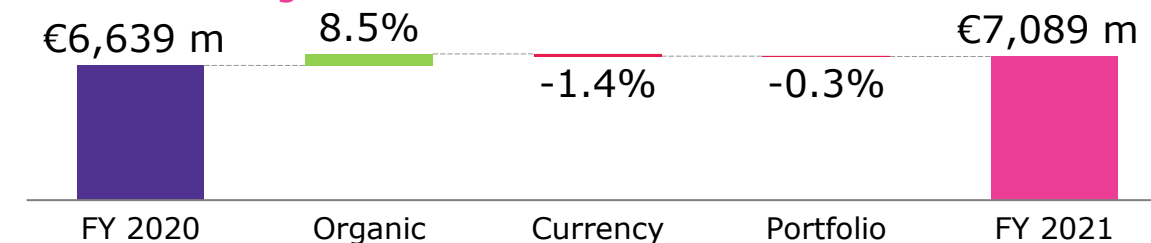
[€m]	IFRS		Pre	
	FY 2020	FY 2021	FY 2020	FY 2021
Net sales	6,639	7,089	6,639	7,089
M&S*	-1,664	-1,600	-1,617	-1,593
Admin	-320	-313	-313	-302
R&D	-1,640	-1,712	-1,616	-1,707
EBIT	1,804	1,823	1,889	1,836
EBITDA	2,184	2,146	-	-
EBITDA pre	2,267	2,153	2,267	2,153
(in % of net sales)	34.1%	30.4%	34.1%	30.4%

Comments

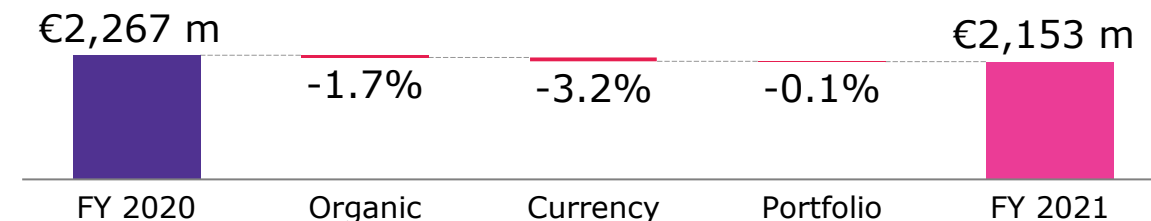
- Sales of Bavencio® more than double, growing +144% org. driven by ramp-up in the U.S., EU and Japan. Erbitux® up +12% organically, boosted by ~€60 m Eli Lilly supply agreement
- Mavenclad® growing +33% organically, offsetting Rebif® decline despite a suppressed dynamic market driving slight org. growth in N&I overall
- Established portfolio growing +3% org., as +26% org. growth in Fertility from a strong recovery more than offsets CM&E VBP impact

¹Excluding €365 m Biogen Provision Release, the reported 2020 margin would have been 28.7%

Net sales bridge



EBITDA pre bridge



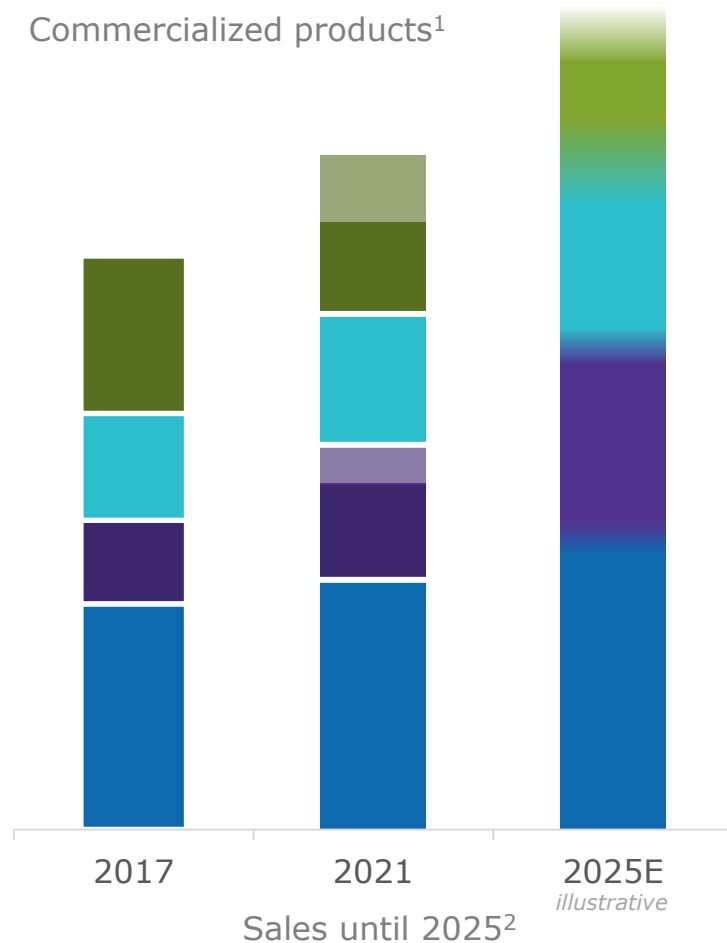
- Ongoing rigorous cost management drives absolute M&S decrease despite higher level of activities vs. 2020
- Increase in R&D primarily driven by Bintrafusp termination provision set up in Q3 2021
- EBITDA pre impacted by Biogen provision reversal; underlying EBITDA pre growth of +17.1%¹ driven by sales growth and stringent cost management

* Marketing and selling expenses
Totals may not add up due to rounding

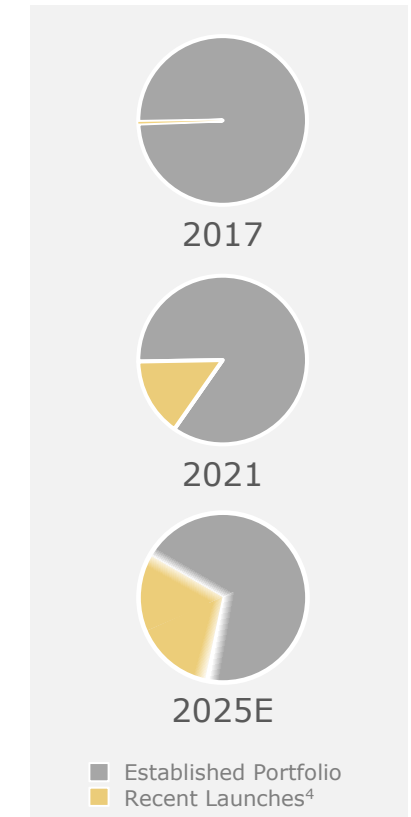


Today's commercialized products foundation for growth until 2025, fueled by recent launches; not yet reflecting further pipeline potential

Commercialized products¹



N&I		
Mavenclad® MS	▶	▪ On its way to become a blockbuster product. In the short-term, headwind as suppressed dynamic market
Rebif® MS	▶	▪ Decline in line with interferon market
Fertility	▶	▪ Mid single-digit growth, capitalizing on increasing awareness and access to treatment
Oncology		
Bavencio® UC, RCC, MCC	▶	▪ Strong growth driven by mUC 1L
Tepmetko® METex14 NSCLC	▶	▪ Targeted launch in niche indication
Erbix® mCRC, SCCHN	▶	▪ Stable outlook ³ , leading in mCRC continuum of care
CM&E	▶	▪ Mid single-digit growth ▪ Increasing prevalence of diabetes and cardiovascular diseases ▪ Mitigate VBP pressure in China through EM growth, life cycle management and portfolio expansion

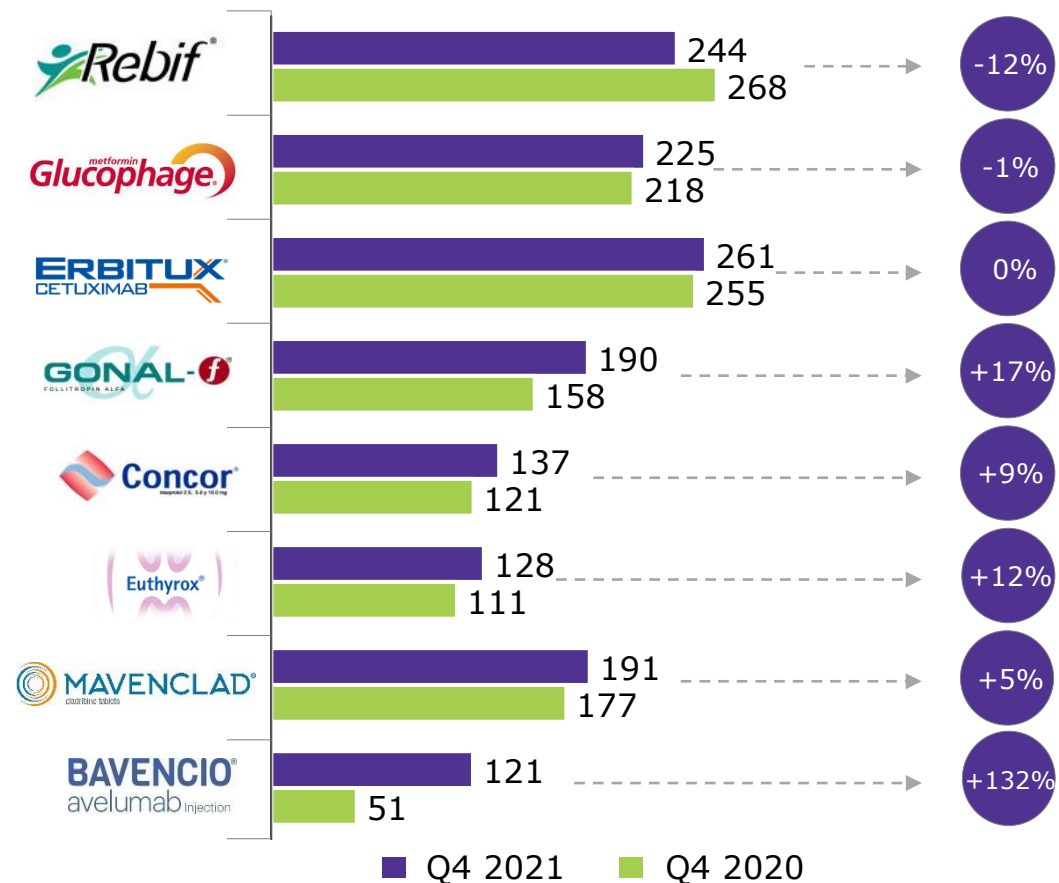


¹ Commercialized products = Established Portfolio + Recent Launches, excludes future launches/indications until 2025; ² Graph excludes Consumer Health Business, Biosimilars Business and others; ³ Sales in 2021 fueled by 59 m€ due to Eli Lilly supply agreement; ⁴ Includes Bavencio® (UC, RCC, MCC), Mavenclad®, and Tepmetko® METex14

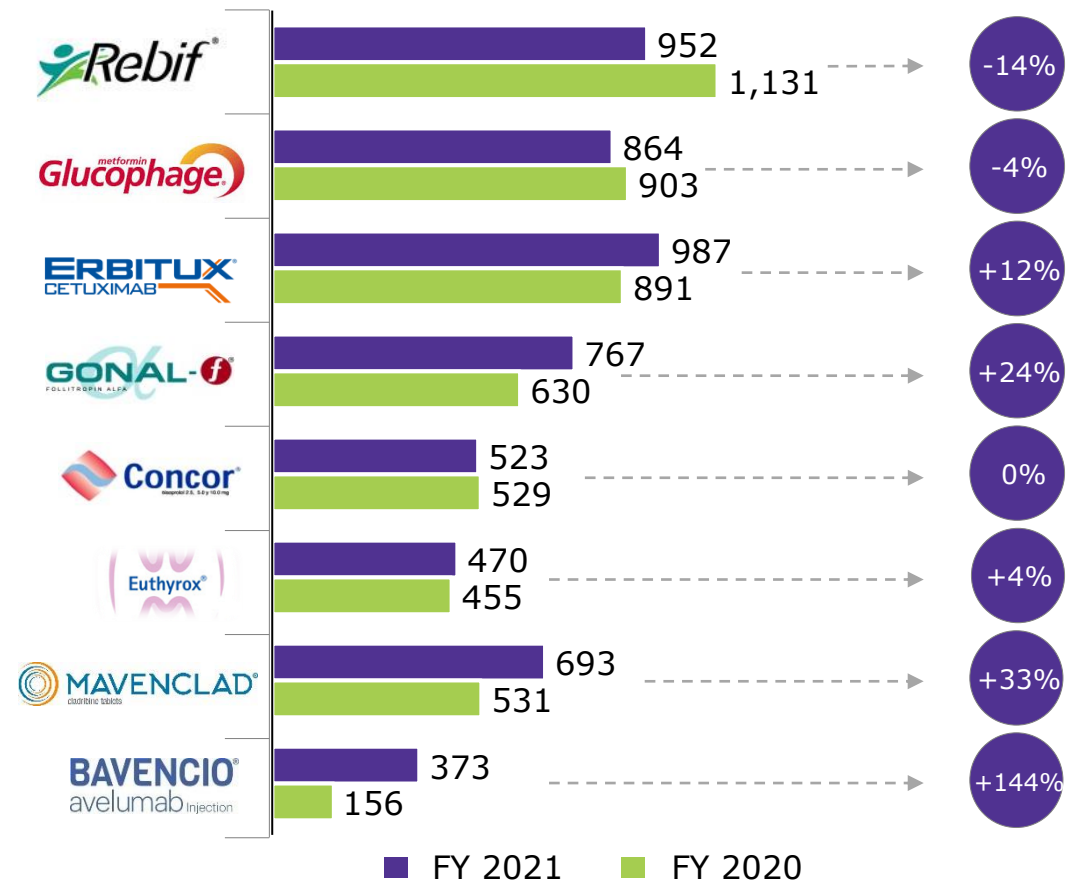


Healthcare organic growth by product

Q4 2021 organic sales growth [%]
by key product [€m]

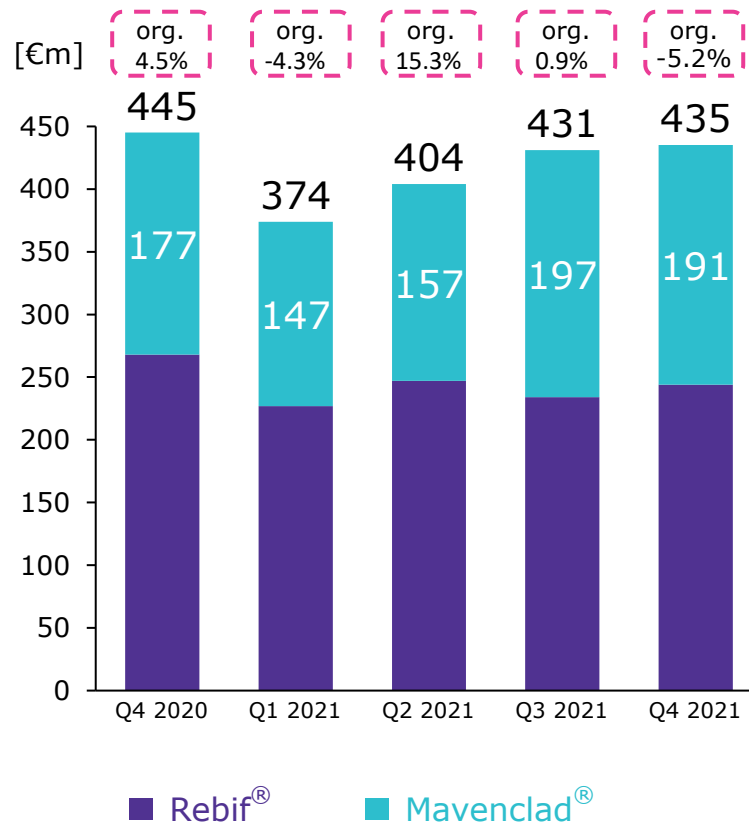


FY 2021 organic sales growth [%]
by key product [€m]

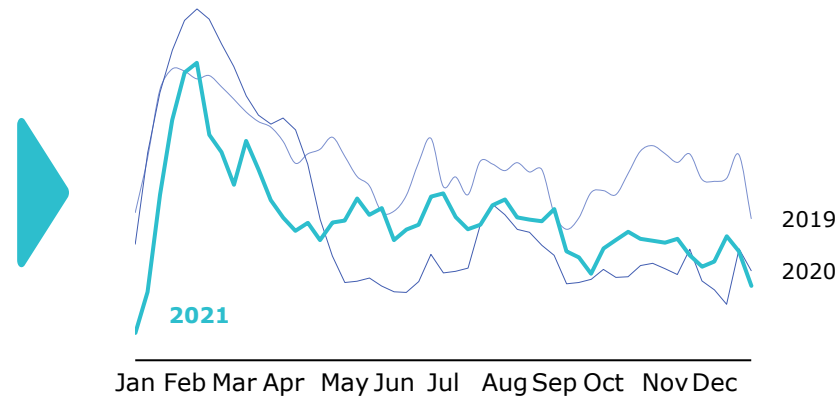


Neurology & Immunology: FY Mavenclad[®] sales up +33% organically, dynamic market volume remains challenging

Sales development N&I, [€m]

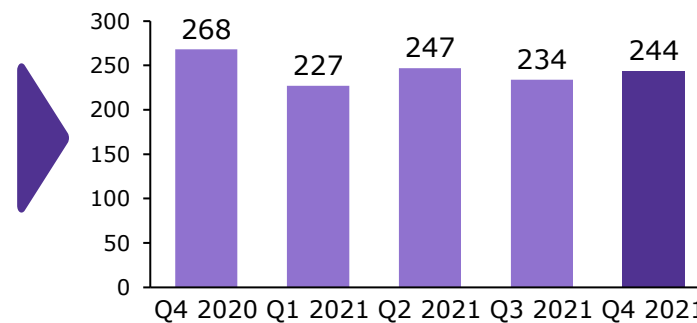


Dynamic market volume [R3W]¹



- U.S. dynamic market further suppressed as COVID 19 Omicron wave soaring
- Mavenclad[®] sales flat QoQ when excl. Q3 accrual impact
- Mavenclad[®] share remains stable within the HE market

Rebif[®] net sales, [€m]

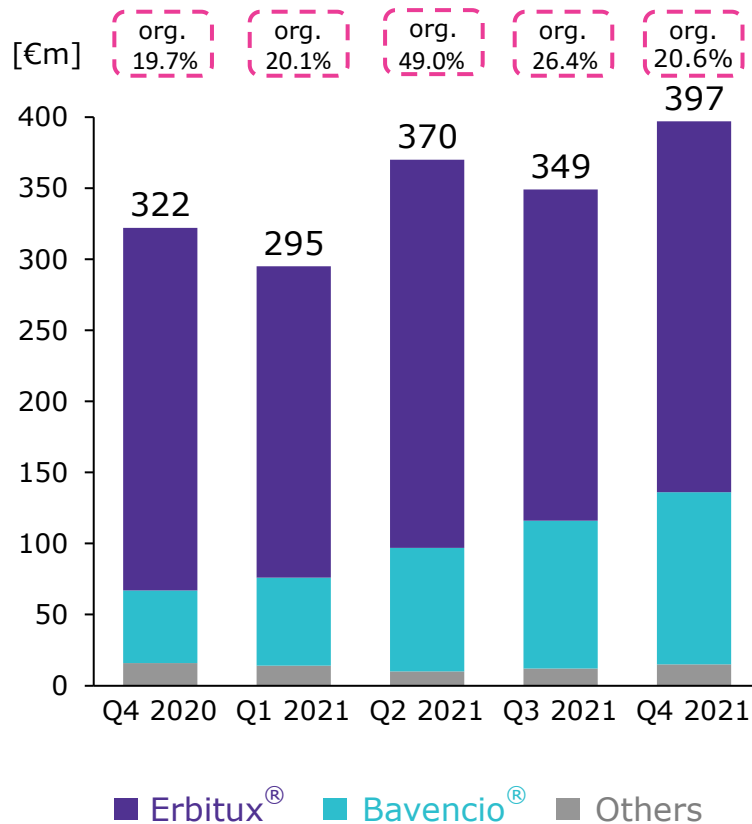


- Stable N&I franchise for FY and QoQ (+1% org.)
- Rebif[®] decline in line with U.S. interferon market trend

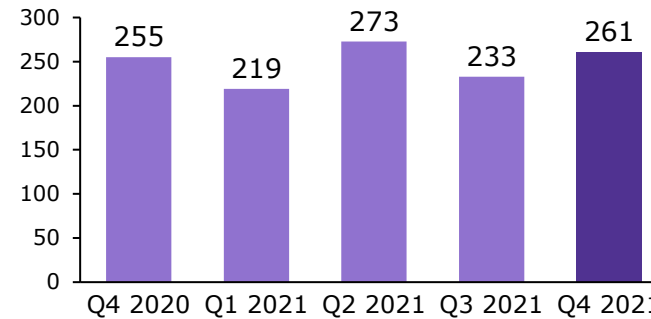


Oncology: Bavencio® mUC 1L ramp-up drives 132% Q4 organic growth

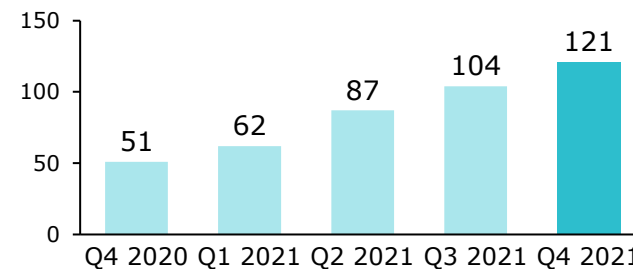
Sales development Oncology, [€m]



Erbitux® net sales, [€m]



Bavencio® net sales, [€m]



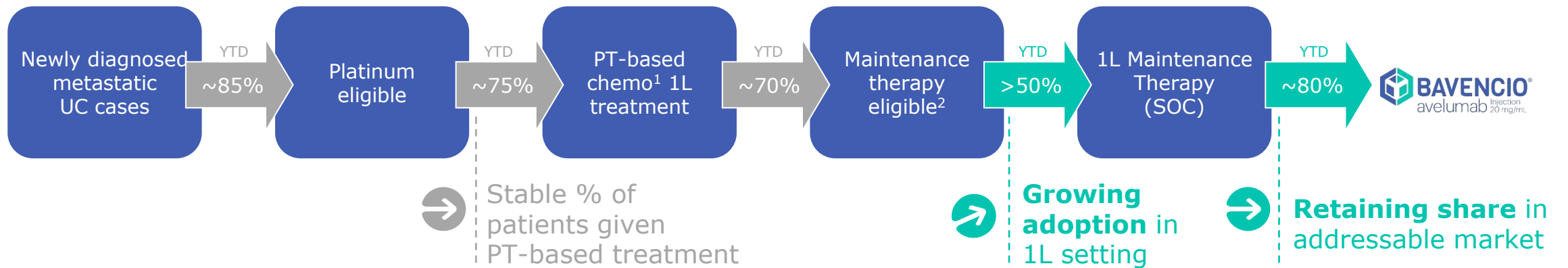
- Growth across all major regions, mCRC supported by Erbitux/Braftovi BRAFmt combination therapy
- Tough comps vs. prior year, Eli Lilly supply agreement impacted Q4 2020 +€32 m, while Q4 2021 +€10 m

- Sales more than double (+132% org. growth)
- ~17% QoQ growth driven by mUC 1L launch ramp-up in Europe, further supported by the U.S. and Japan



Bavencio® UC 1L launch: Adoption of BAVENCIO in 1L maintenance continues to grow in both U.S. and ex-U.S.

 **U.S. – > 1.5 years into launch, adoption of BAVENCIO in 1L maintenance still increases:**



  **Europe & Japan – Almost a year into launch, BAVENCIO already standard of care in key markets**

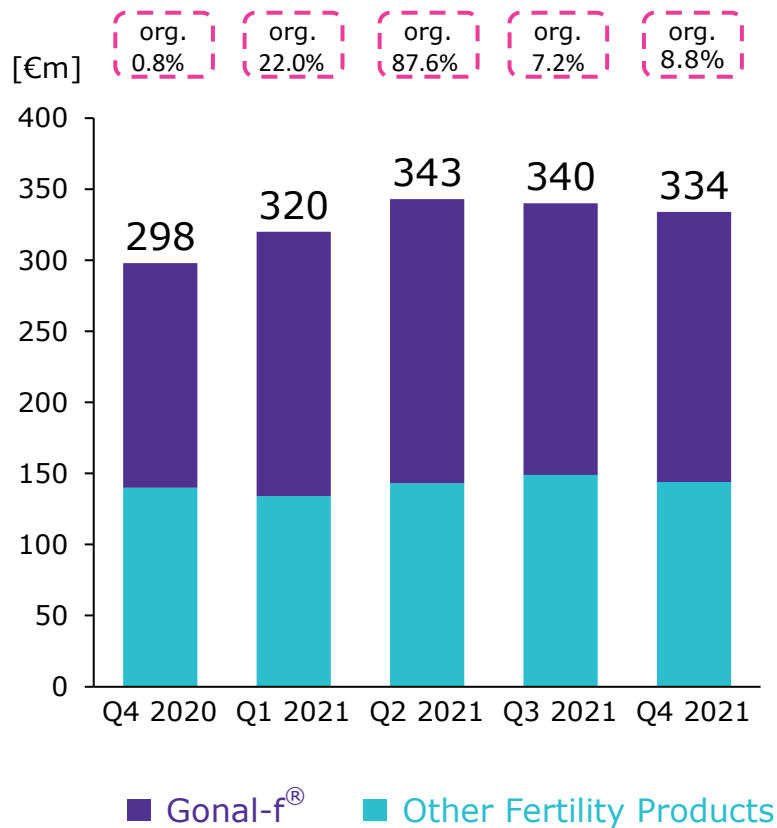
- Now **approved in 55 markets** and **reimbursed in ~1/3** globally with further reimbursement decisions to support growth
- **Strong adoption of BAVENCIO** in 1L maintenance in key markets (e.g. Japan, France, Germany) supported by treatment **guideline recommendations** and **KOL support**

1: Carboplatin or Cisplatin, 2: Complete / partial response or stable disease based on clinical trial data; Acronyms: PT = Platinum, SOC = Standard of care

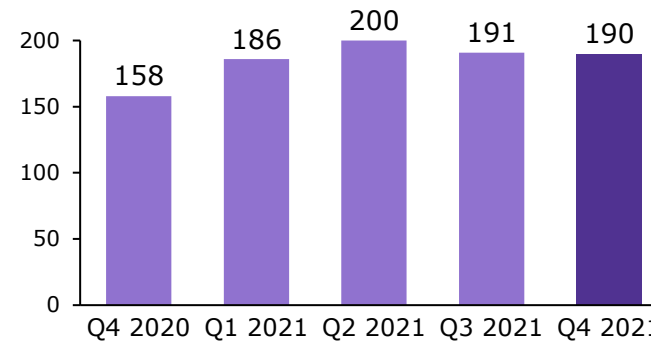


Fertility: Strong org. growth of +9% against softer comps, supported by +3% FX

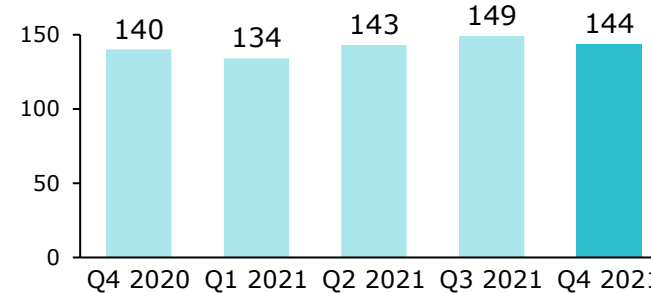
Sales development Fertility, [€m]



Gonal-f[®] net sales, [€m]



Other Fertility net sales, [€m]

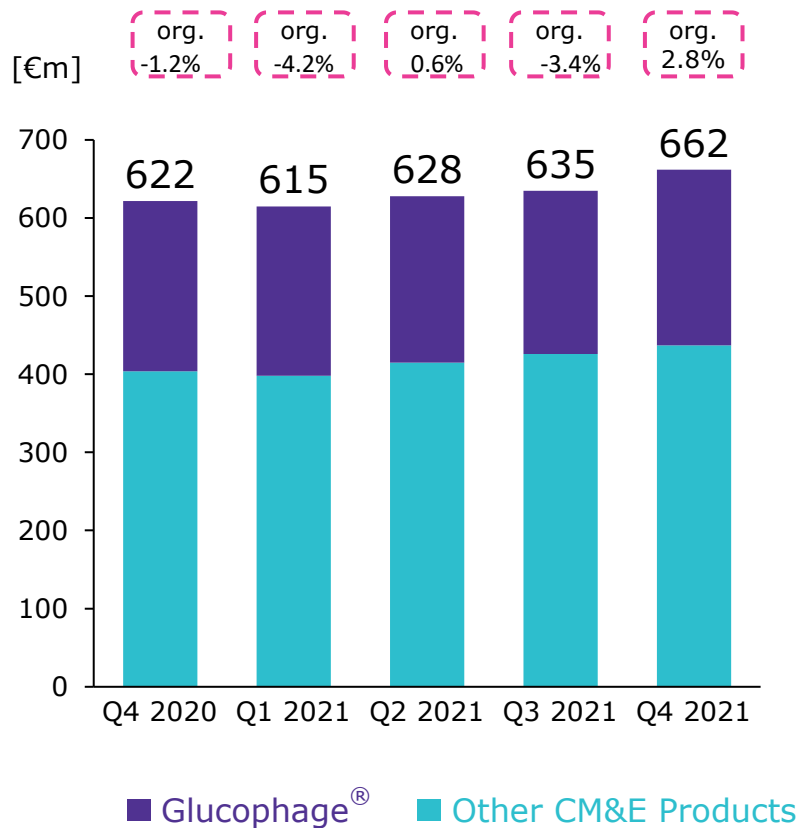


- Gonal-f[®] org. YoY growth in all markets
- Q4 in line with Q3 despite typical seasonality
- Fertility market back to pre-pandemic levels, no further rebound expected
- Franchise expected to capitalize on increasing prevalence and awareness of infertility

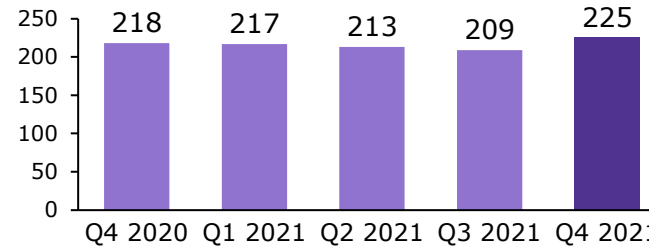


CM&E: Returning to growth (+2.8% org. QoQ) post China VBP¹ impact

Sales development CM&E, [€m]

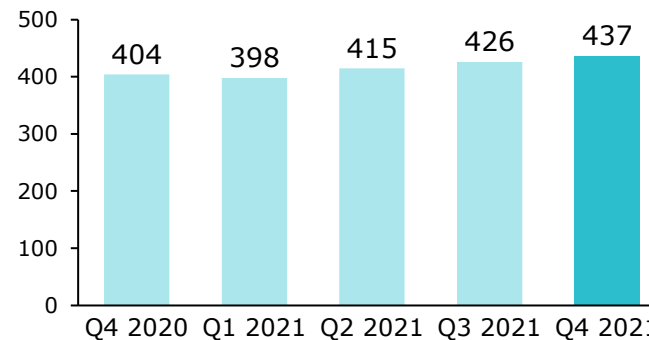


Glucophage[®] net sales, [€m]



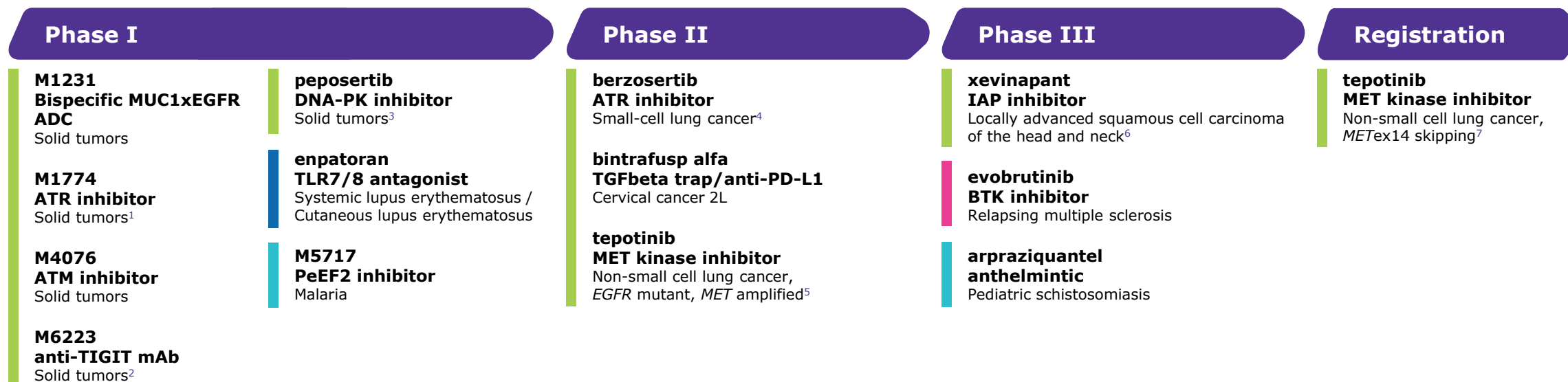
- Glucophage slight organic decline of -1.5% offset by +4.6% FX tailwinds
- First quarter of growth after impact from VBP

Other CM&E net sales, [€m]



- Other CM&E portfolio growth primarily driven by Euthyrox[®] and Concor[®]; Europe contributing ~40% of sales in Q4 2021, followed by APAC





- Oncology
- Immunology
- Neurology
- Global Health

ADC: Antibody drug conjugate; 1L: first-line treatment; 2L: second-line treatment

¹ Study as monotherapy and in combination with niraparib. ² Includes study in combination with bintrafusp alfa. ³ Study in combination with avelumab. ⁴ Includes studies (phase I/II) in collaboration with/ sponsored by external partners, e.g. US National Cancer Institute (NCI). ⁵ In combination with osimertinib. ⁶ In combination with cisplatin and radiotherapy in unresected LA SCCHN patients eligible for cisplatin.

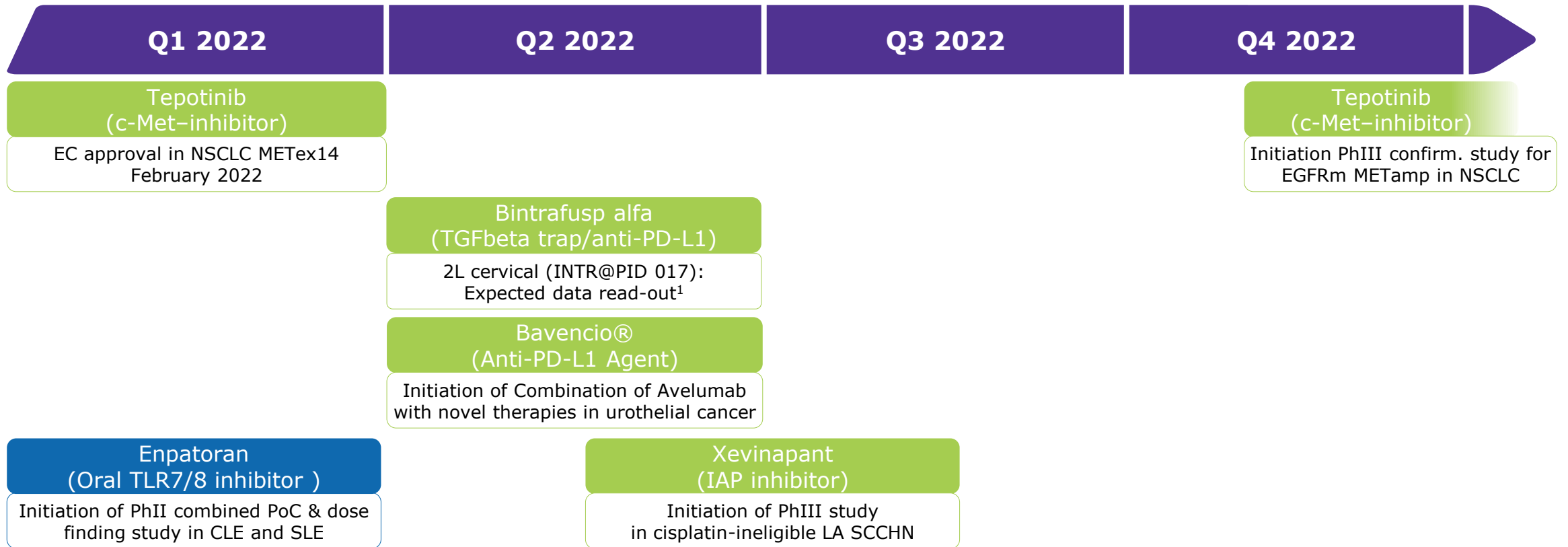
⁷ As announced on February 18, 2022, Tepotinib was approved by the European Commission as monotherapy for the treatment of adult patients with advanced non-small cell lung cancer harboring alterations leading to METex14 skipping, who require systemic therapy following prior treatment.

Unless noted otherwise, clinical programs conducted in collaboration with external partners are not shown unless Merck KGaA, Darmstadt, Germany has co-ownership of data. In such case the indication is shown in *Italics*.

Pipeline products are under clinical investigation and have not been proven to be safe and effective. There is no guarantee any product will be approved in the sought-after indication.



Healthcare catalysts



■ Oncology ■ Immunology

Acronyms: EMA = European Medicines Agency, LA = locally advanced, SCCHN = Squamous cell carcinoma of the head and neck, NSCLC = Non-small cell lung cancer, TLR = Toll-like receptor, 1: Clinical timelines are event-driven and may be subject to change



FY Electronics: organic top-line growth of +8% driven by strong Semiconductor Solutions performance & Surface Solutions recovery

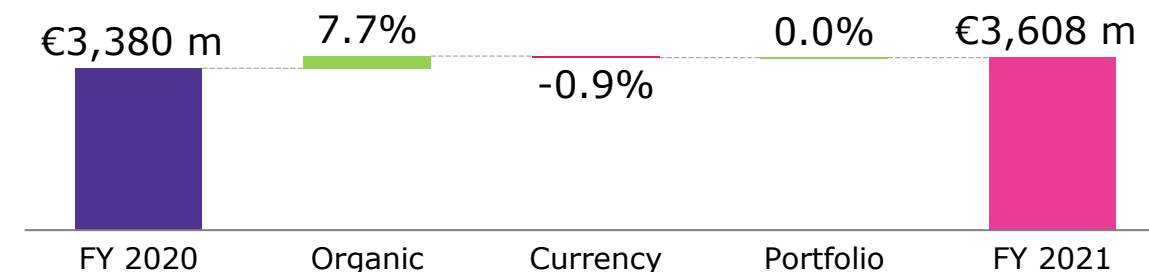
Electronics P&L

[€m]	IFRS		Pre adjustments	
	FY 2020	FY 2021	FY 2020	FY 2021
Net sales	3,380	3,608	3,380	3,608
M&S*	-539	-573	-530	-569
Admin	-162	-138	-144	-122
R&D	-274	-278	-272	-277
EBIT	240	509	463	600
EBITDA	925	1,070	-	-
EBITDA pre	1,024	1,128	1,024	1,128
(in % of net Sales)	30.3%	31.3%	30.3%	31.3%

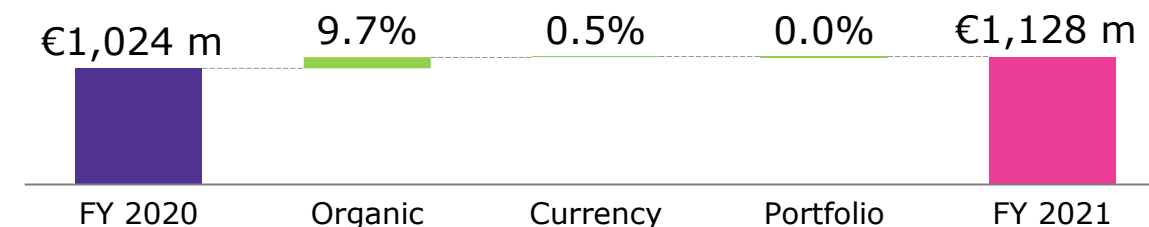
Comments

- Semiconductor Solutions: growing +15% org.; strong underlying demand for materials with double digit organic growth, further supported by DS&S project business
- Display Solutions: high OLED growth partially compensates LC decline with overall -6% org. growth in the business unit
- Surface Solutions: +13% org. growth mainly driven by market recovery after pandemic impact on automotive and cosmetic end markets in 2020
- M&S at a flat 16% of sales; logistic costs main driver for absolute increase in cost line
- R&D with absolute increase mainly driven by investments in Semiconductor Solutions
- EBITDA pre growing faster than sales at +9.7% org. despite first raw materials and logistics price pressures in H2

Net sales bridge

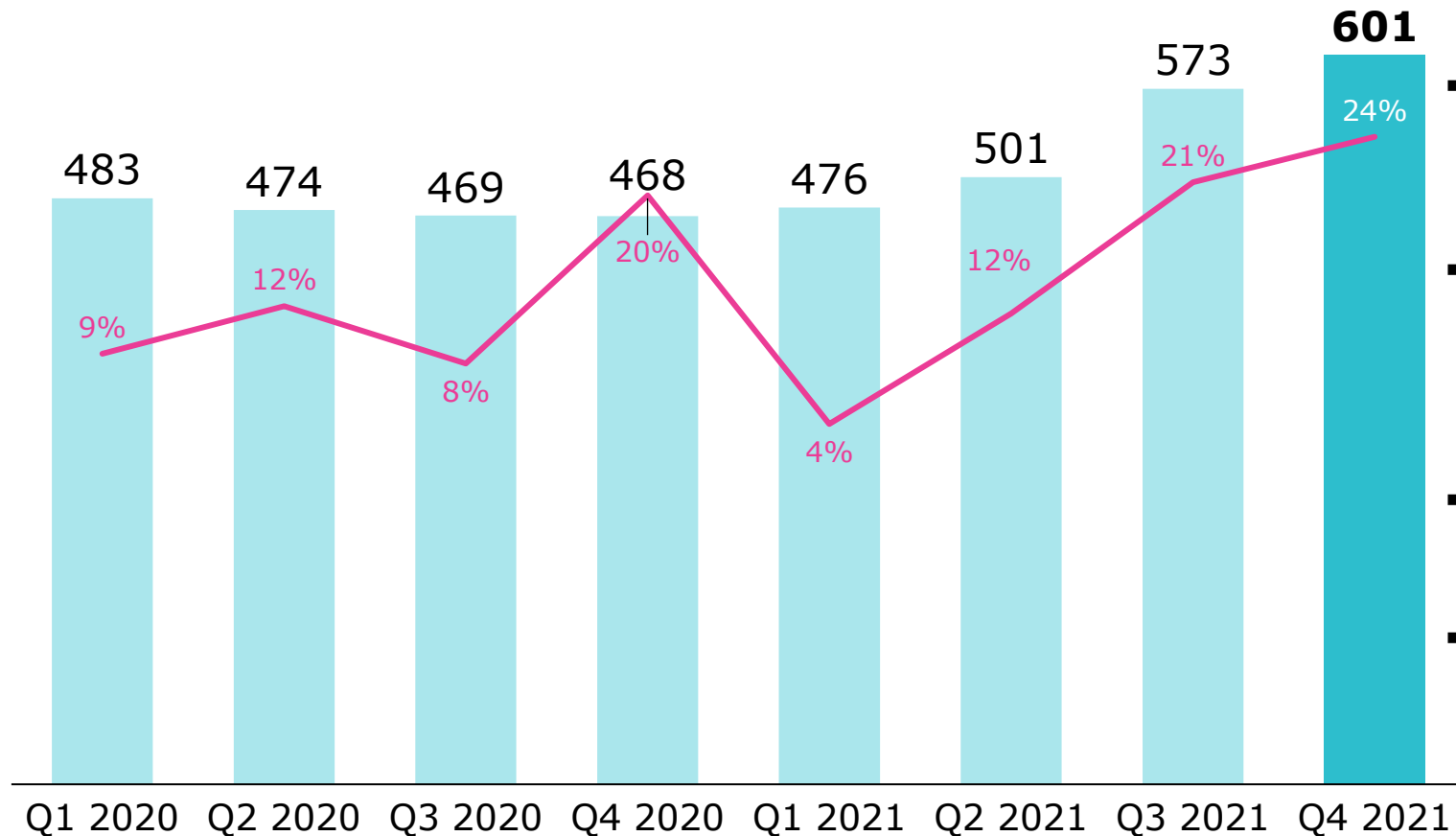


EBITDA pre bridge



BIG 3 - Semiconductor Solutions: Recording org. growth of +24%

Sales development [€m] - org. growth [%]



- **Another record quarter** for Semiconductor Solutions, both in terms of absolute sales and organic growth
- **Semiconductor Materials** biggest contributor to growth with double-digit organic growth rate amid continued strong underlying demand
- **Strong DS&S project business in H2**, expected to last throughout all of 2022
- **Continued strong confidence** in mid-term market outperformance reflected in initial 2022 Electronics guidance



Cash flow statement

FY 2021 – cash flow statement

[€m]	FY 2020	FY 2021	Δ
Profit after tax	1,994	3,065	1,071
D&A	1,938	1,762	-176
Changes in provisions	-110	196	305
Changes in other assets/liabilities	-123	-121	2
Other operating activities	-59	62	122
Changes in working capital	-162	-349	-186
Operating cash flow	3,477	4,616	1,138
Investing cash flow	-1,340	-1,578	-238
thereof Capex on PPE	-1,377	-1,059	318
Financing cash flow	-1,522	-2,504	-982

Cash flow drivers

- Operating cash flow growing €1.1 bn or +33% vs. FY 2020
- Increase in profit after tax driven by strong operational performance, particularly in Life Science
- Delta in changes in provisions driven primarily by Biogen provision reversal of €365 m in 2020
- Net working capital outflow driven by inventories to support Life Science and Electronics sales growth & supply security
- 2020 Capex on PPE elevated by building purchases in Burlington and Tempe
- Financing cash flow driven by ongoing strong deleveraging



Adjustments in Q4 2021

Adjustments in EBIT

[€m]	Q4 2020		Q4 2021	
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	93	0	-17	3
Life Science	6	3	14	11
Electronics	29	11	26	8
Corporate & Other	23	0	-49	1
Total	151	14	-26	23



Adjustments in FY 2021

Adjustments in EBIT

[€m]	FY 2020		FY 2021	
	Adjustments	thereof D&A	Adjustments	thereof D&A
Healthcare	85	2	14	6
Life Science	21	3	40	11
Electronics	223	123	91	33
Corporate & Other	79	0	65	3
Total	407	128	210	53



Financial Calendar



Date	Event
April 22, 2022	<i>Annual General Meeting</i>
May 12, 2022	Q1 2022 Earnings release
August 4, 2022	Q2 2022 Earnings release
November 10, 2022	Q3 2022 Earnings release
March 2, 2023	Q4 2022 Earnings release



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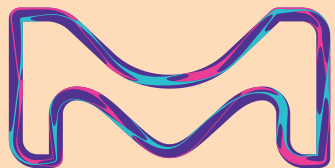


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