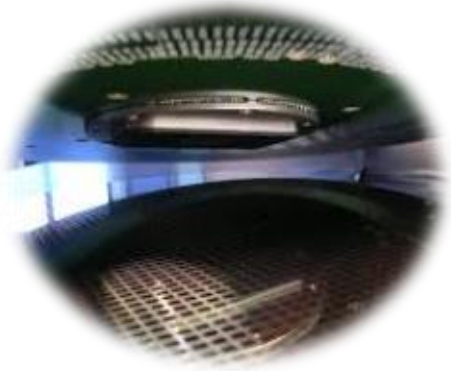

TECHNOPROBE
TOR VERGATA
UNIVERSITÀ DEGLI STUDI DI ROMA

Business Divisions

3 Operating Sectors

Probe Cards



Wafer-level probing solutions

Final testing

Revenues € 543.2m

EBITDA € 136.5m

Net Profit € 62.8m

Leader in designing and manufacturing probe cards

Vertically integrated business model and in-house production

Value creation through delivery of high-performance and tailor-made solutions

Vast portfolio including: TPEG Vertical MEMS Technology, Cantilever, Test Sockets and Pongo Pins, Vertical Probes and many more

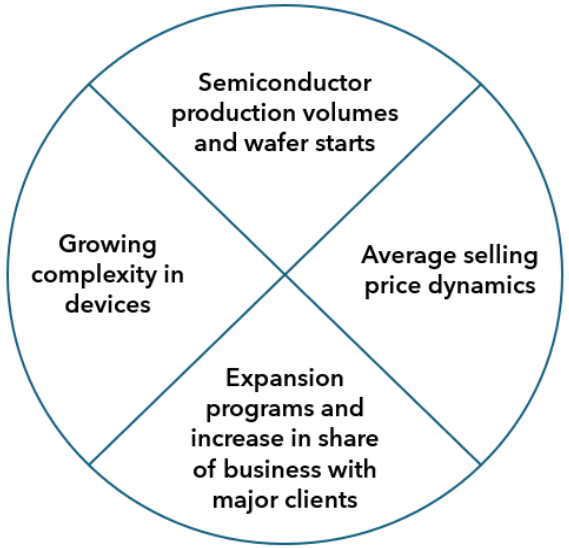
Customer-Centric Revenue Model

- Revenue primarily driven by structural increase in semiconductor device complexity and long-standing customer relationship.
- Testing intensity rising with AI, HPC and advanced logic nodes.

Growth: technology-led.

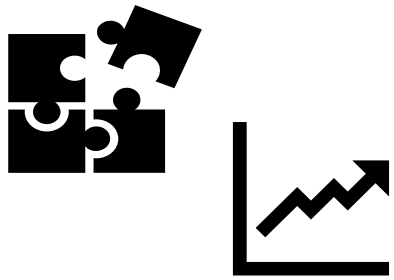
- Portfolio aligned with advanced-node demand, not legacy volume markets.

Key Revenue Drivers



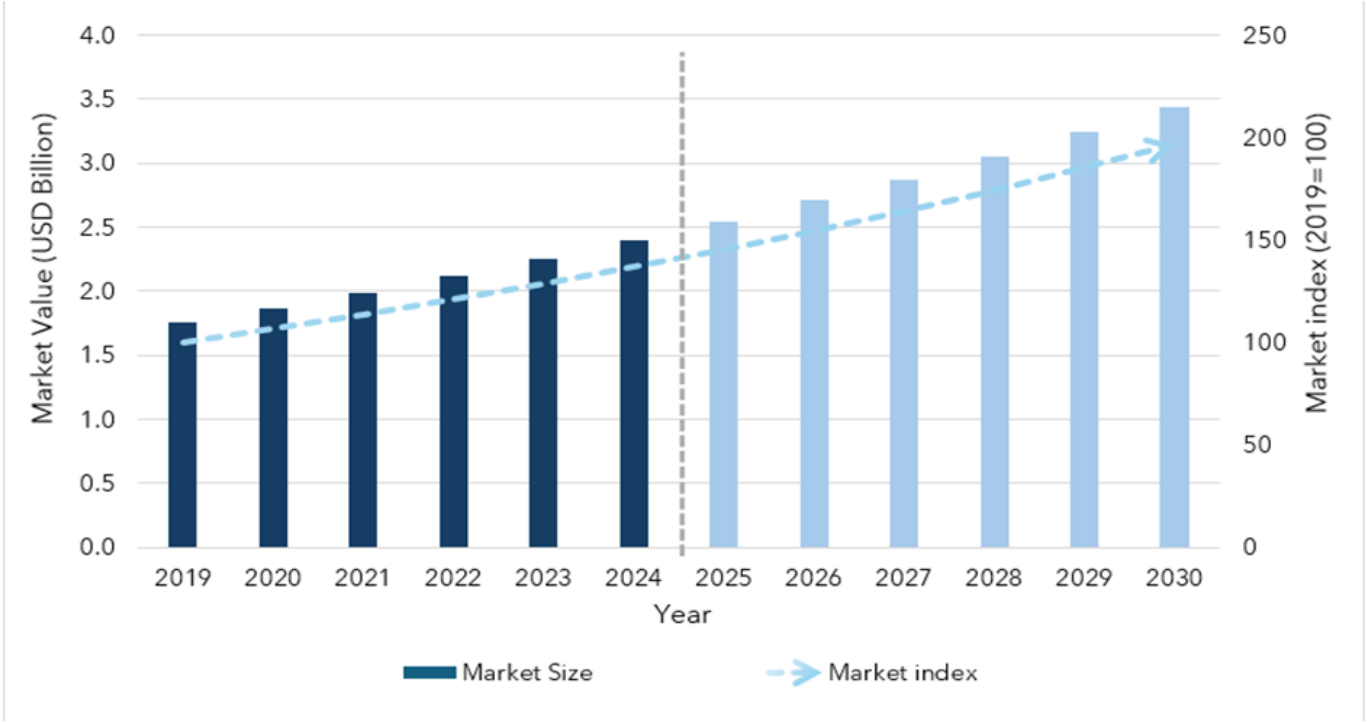
Converting innovation into earnings

Maintaining control over yield and performance



Industry Outlook

Semiconductor Probe Card Market Size (2019-2030)



CAGR% 2019-2024: 6.50%

CAGR % 2025-2030: 6.20%

Market characteristics

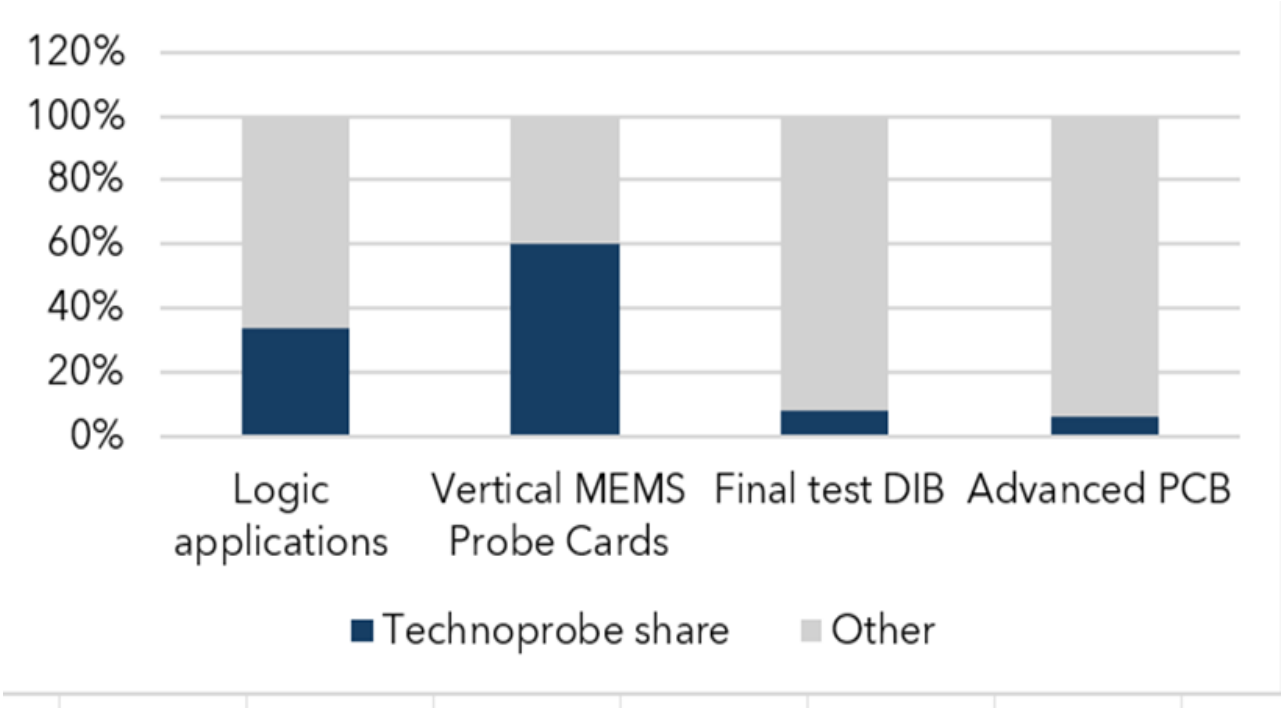
- High barriers to entry
- Strict quality and reliability standards
- Long client qualification cycles
- High Initial CAPEX
- High customization costs

Growth drivers

- 5G, AI, IoT
- Autonomous driving
- Data-center investments
- Advanced Packaging
- Demand for HBM and DRAM
- Rising OAST activity and demand for MEMS

Market Positioning

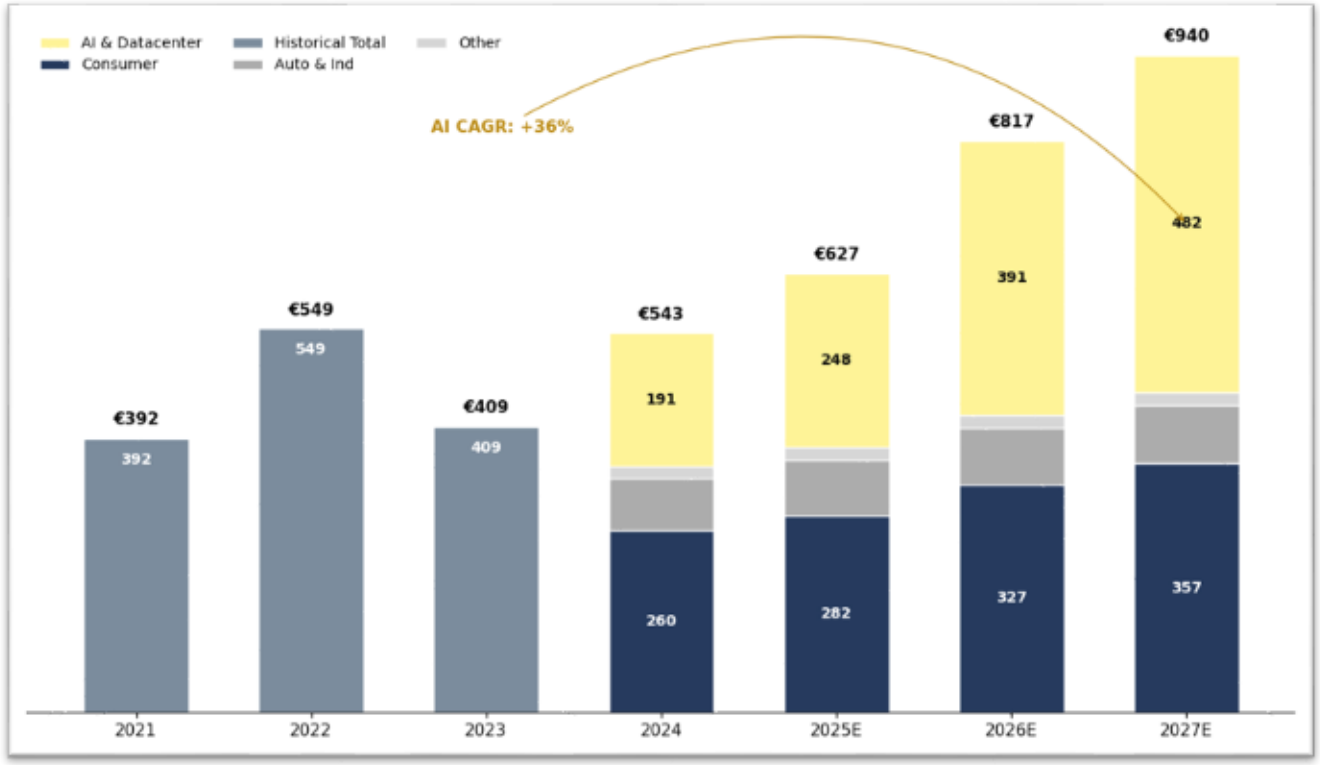
Technoprobe Market Size



Company's portfolio is concentrated on logic probe cards, with a strong emphasis on advanced MEMS-based solutions, particularly Vertical MEMS, while keeping selective exposure to final testing through Burn-In Boards and Device Interface Boards.

Technoprobe's market share profile indicates a concentrated positioning in segments that exhibit both higher historical growth and sustained absolute expansion.

Revenue Analysis: An Overview



Consolidated revenues drop to 409M (-26%) as of FY 2023

Due to market destocking and consumer market cyclicality

Revenues surge as of FY24 and FY25

Driven by increasing AI testing and adoption of AI in

Revenue mix shifting structurally toward higher-quality streams AI

Strategic Relationships

Growth is being fueled by a "lockstep" relationship with industry titans like **TSMC.**

CapEx: Self-Funded Integration and Capacity Expansion

Invest-ahead-of-the-curve Capex supports vertical integration and sub-3nm precision manufacturing.

⇩

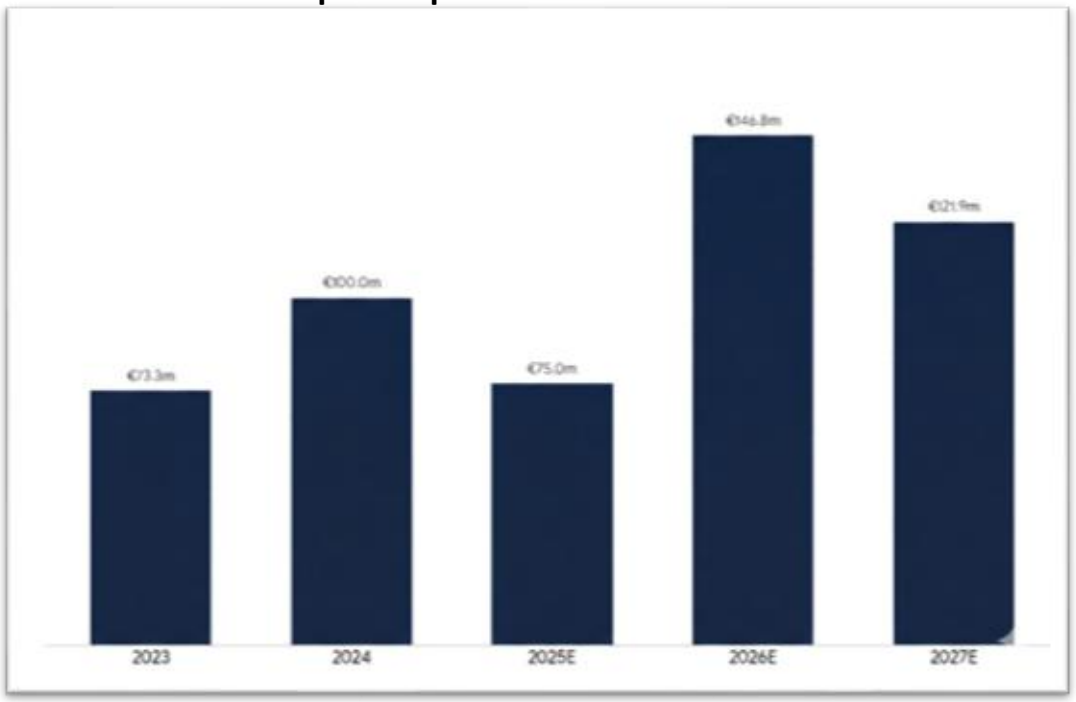
Strategic 2026 CapEx acceleration: scaling proprietary infrastructure to dominate the AI Hyper-Scaling phase.

Technoprobe's Net Cash Position

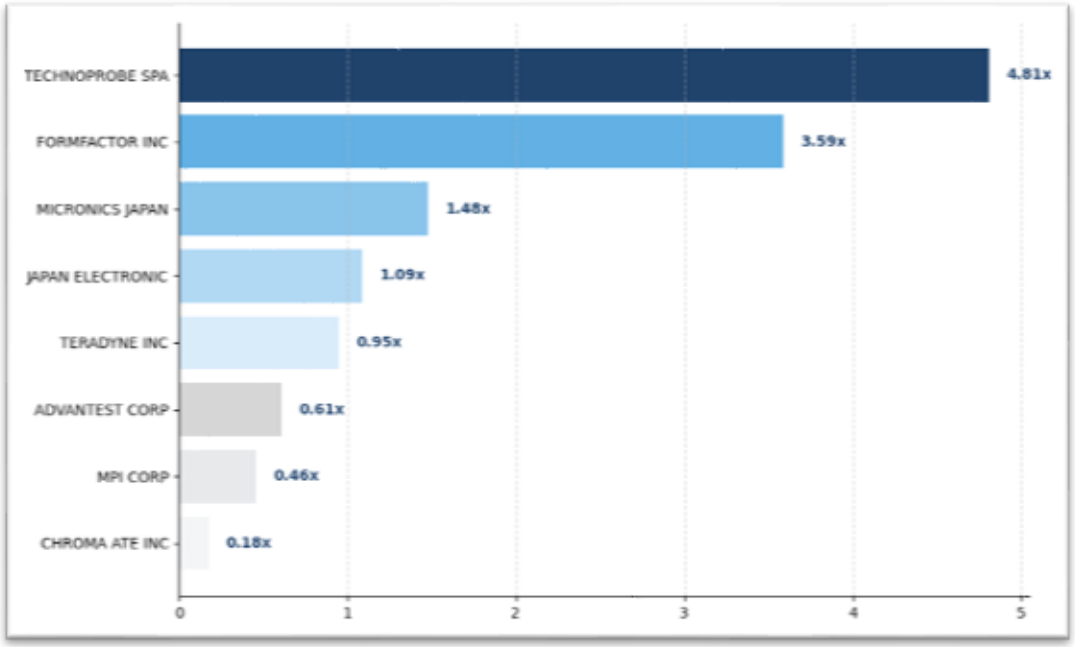
>€600M

Supports fully self-funded Capex without financial strain

Capital Expenditures Evolution



Unmatched Financial Solvency: Net Cash / EBITDA Ratio



PPE Structure and Asset Freshness

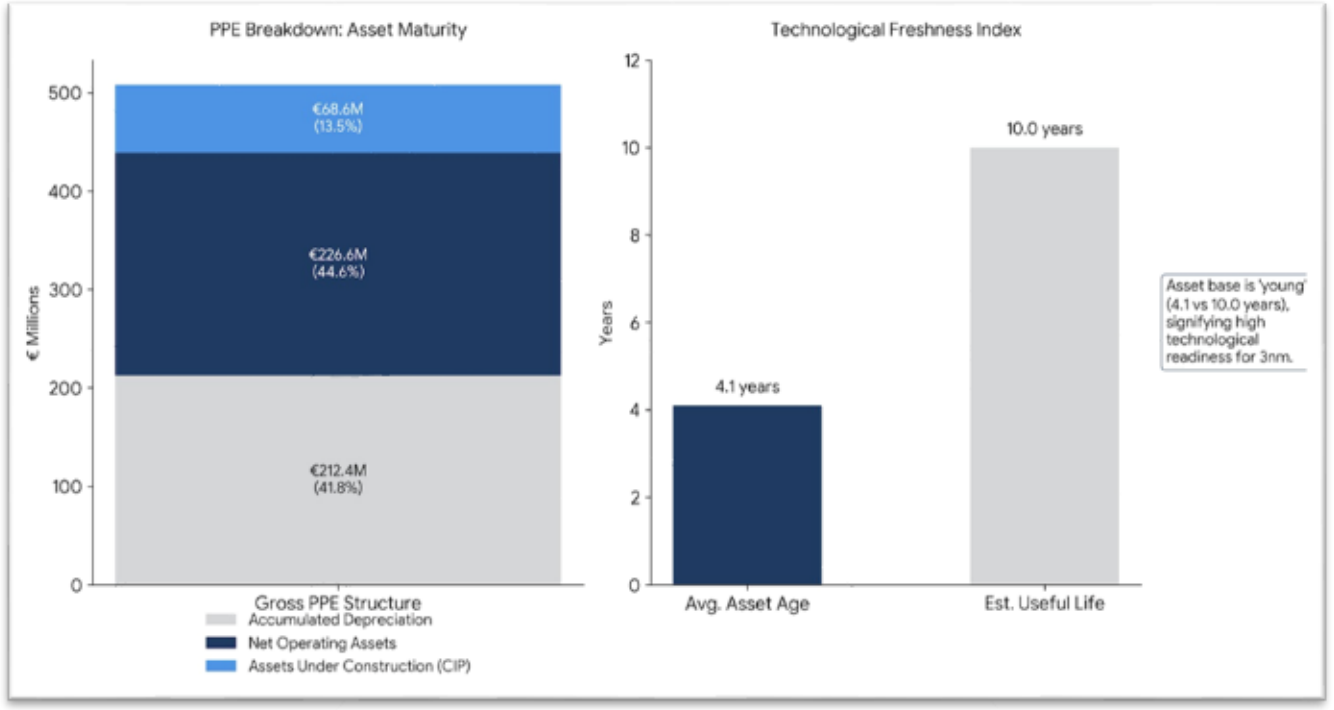
Average Asset Age
4.1 years

Accumulated Depr.	**€212.4m**
Annual Depr.	**€51.1m**

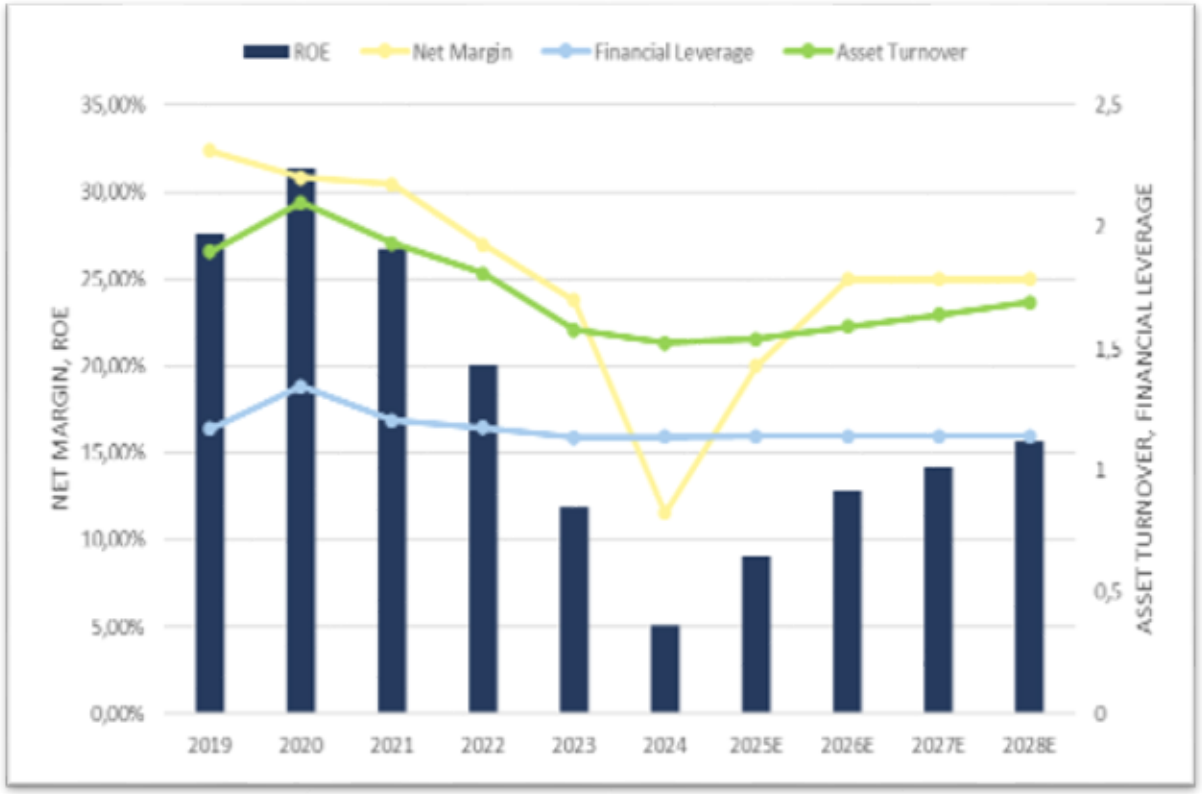
Weighted Avg. Useful Life
10.0 years

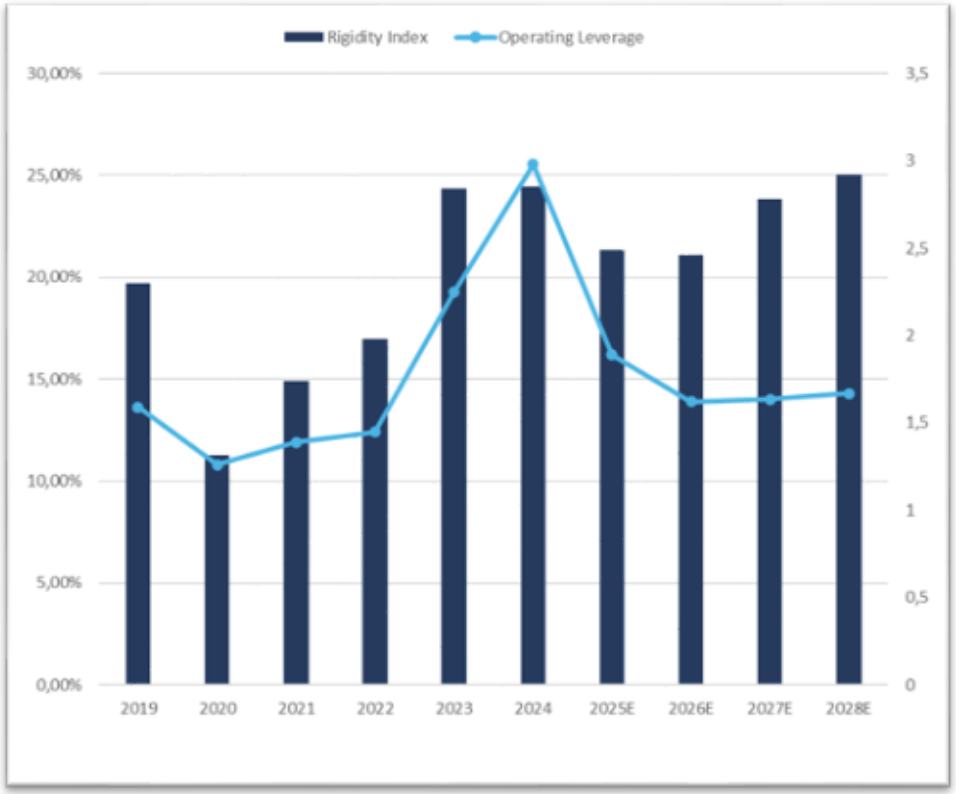
Assets Under Construction	**13.5%**
Impairment	**€6.5m**

Technoprobe maintains a 'young' and high-performance asset base, which minimizes the immediate need for maintenance CapEx, allowing management to strategically funnel budget into **Growth CapEx** to capture the structural, secular expansion of AI-driven data centers.



Dupont Analysis and Structural Rigidity

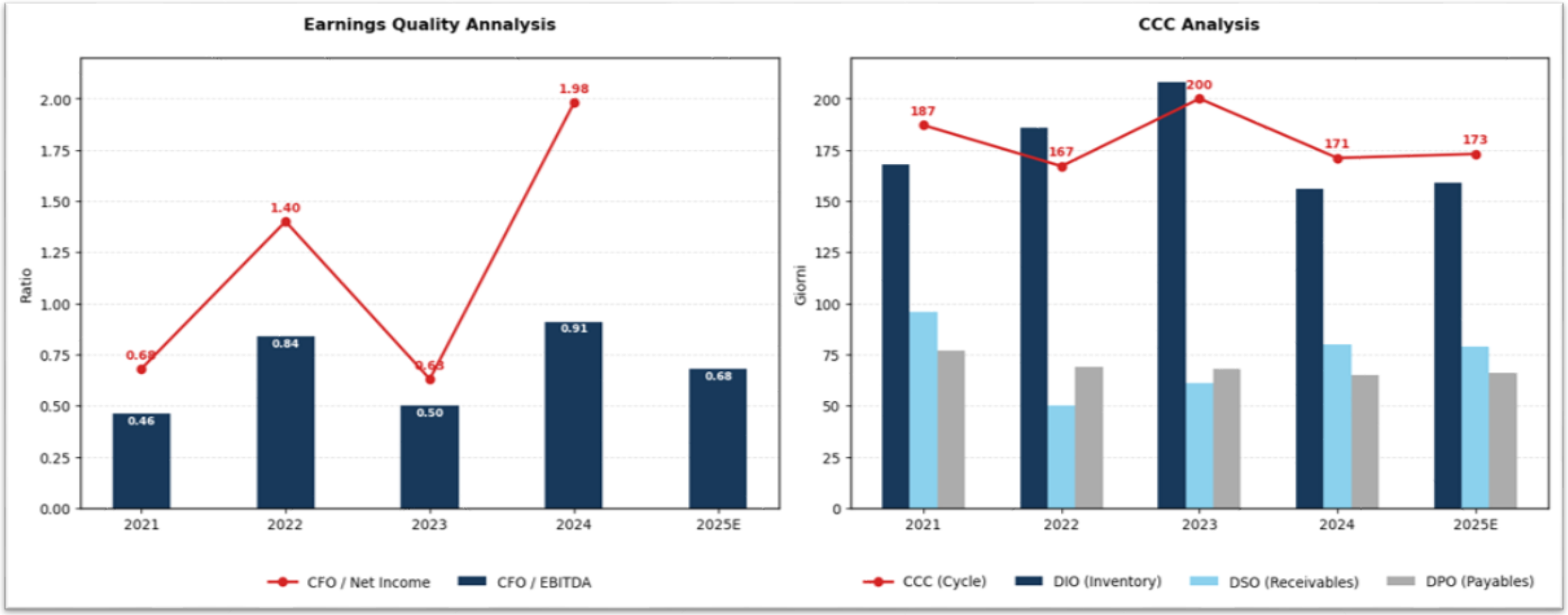




Profitability is temporarily compressed by high fixed-cost rigidity (25%) as the company absorbs elevated R&D and D&A

High operating leverage acts as a "coiled spring," where anticipated AI-driven volume growth is expected to drive ROE recovery toward the 20-25% range without relying on financial debt

Cash flow generation and earnings quality



Importance of the AI Shift

Technoprobe is shifting revenue exposure from cyclical consumer markets to the higher-growth AI sector.

Strategic revenue transformation

AI segment	**35.0%** (2024) → **49.5%** (2027E)
Consumer segment	**48.0%** (2024) → **38.0%** (2027E)

Superior business quality

AI segment advantages:

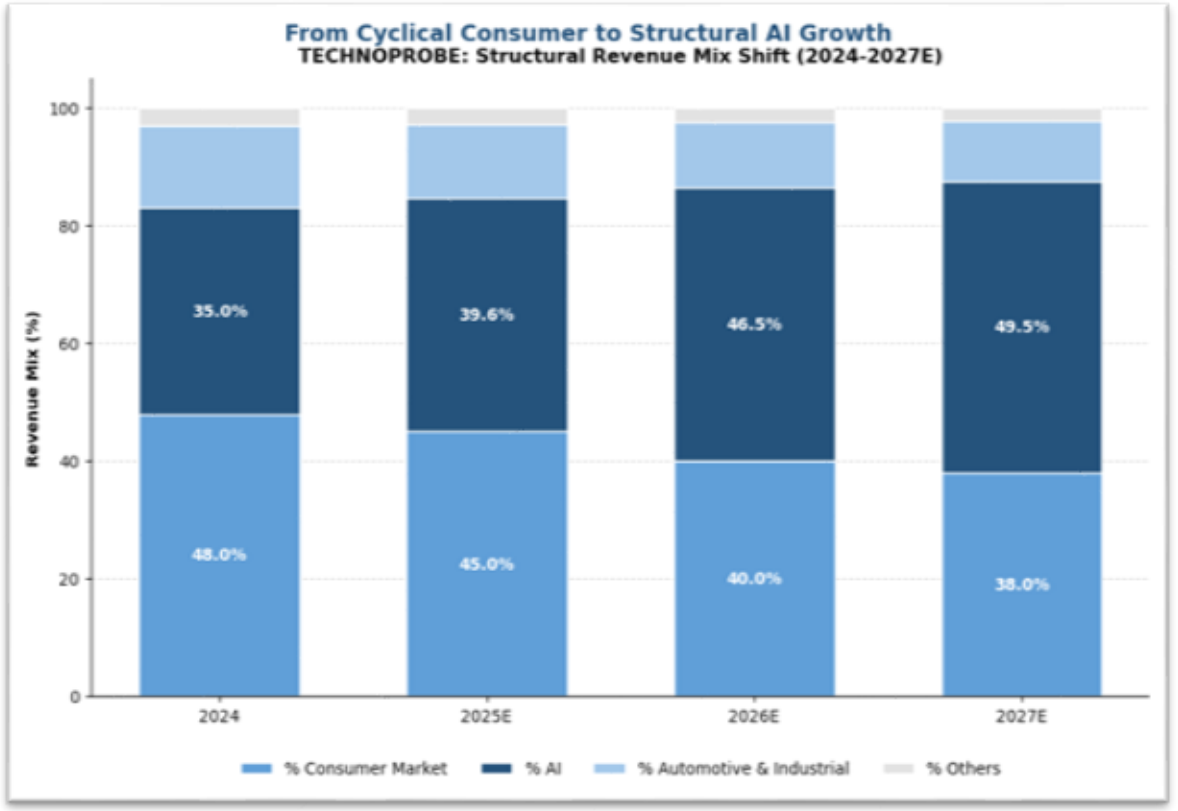
- Higher margins
- Higher technological complexity
- Structural growth

Consumer segment challenges:

- Cost-sensitive
- Cyclical exposure

Valuation impact

- Improved revenue quality leads to potential re-rating
- Earnings profile becomes more structural and less cyclical
- Valuation should align closer to pure-play AI tester



Peer Selection for Relative Analysis

Legacy and Consumer testing leaders

Cohu

Chroma
CHROMA ATE INC.

MJC

JE
JAPAN
ELECTRONICS

Advanced (AI) Testing Leaders

TERADYNE

FormFactor™

ADVANTEST

MPI CORPORATION

Relative Valuation: 2027E Multiple Re-Rating Framework

Valuation multiple expected to expand as revenue mix shifts toward higher-quality AI testing

Peer Set Summary

Source: Bloomberg, Team Estimates

Metric	Legacy Group	Advanced Tester (AI)	Technoprobe
Forward P/E	32.04x	50.13x	62.5x
EV/EBIT 2027E	16.59x	31.62x	31.05x
CAGR (2FY)	16.00%	21.53%	21.00%

Weighted Target Multiple

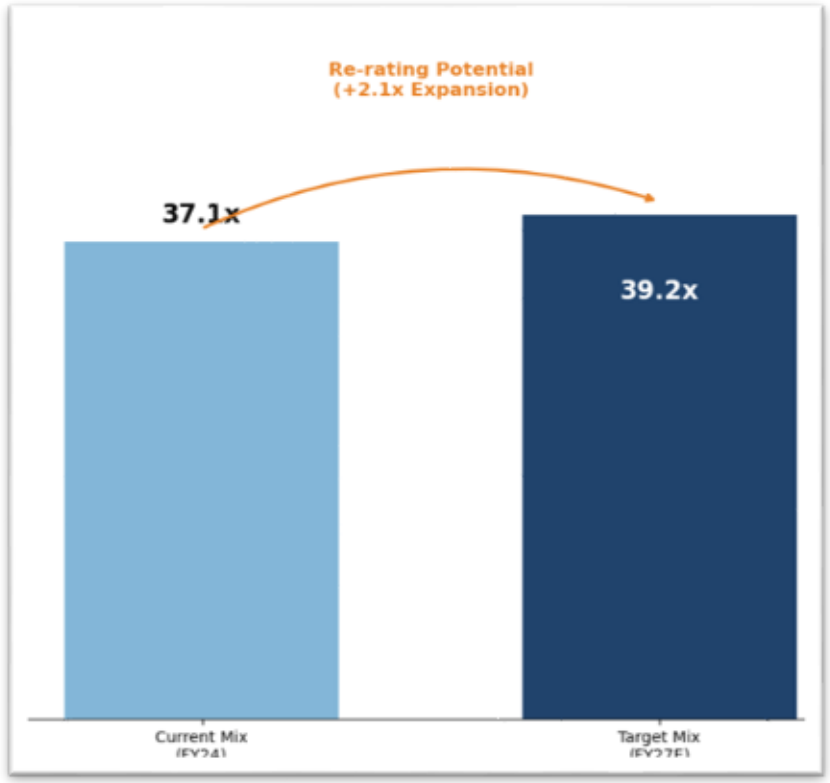
39.2x

Legacy 50.5% Advanced 49.5%

Target Price (P/E Method)

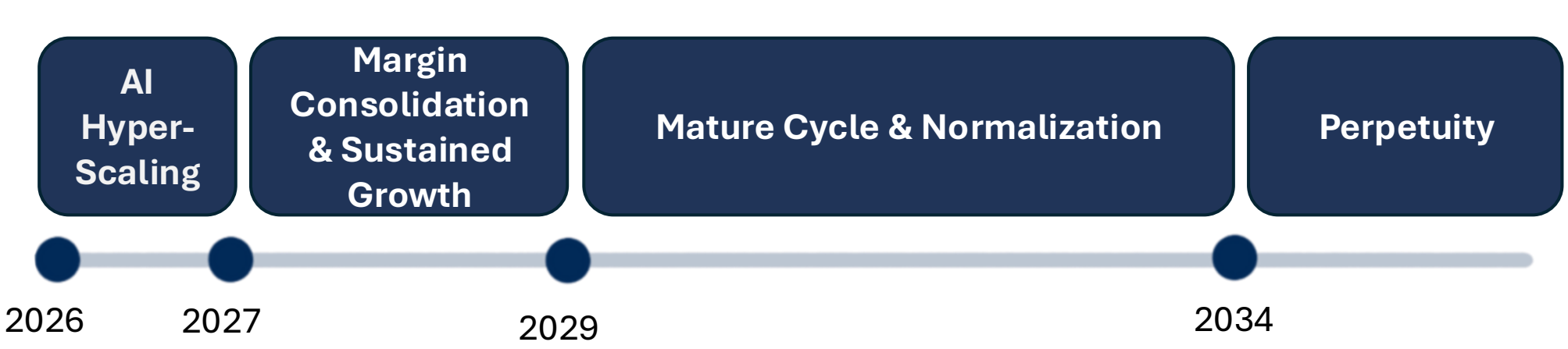
€13.90

39.2 × FY2027 EPS €0.35



DCF Assumptions

E/(D+E)	D/(D+E)	Ke	Kd	g	WACC
88%	12%	7.70%	5,25%	3%	7,80%



	High Growth 2025-2029	Medium Growth 2029-2034	TV >2034
Reveneus CAGR	20%	9,8%	3%
% Total EV	7,2%	15,2%	76,6%

DCF Target Price

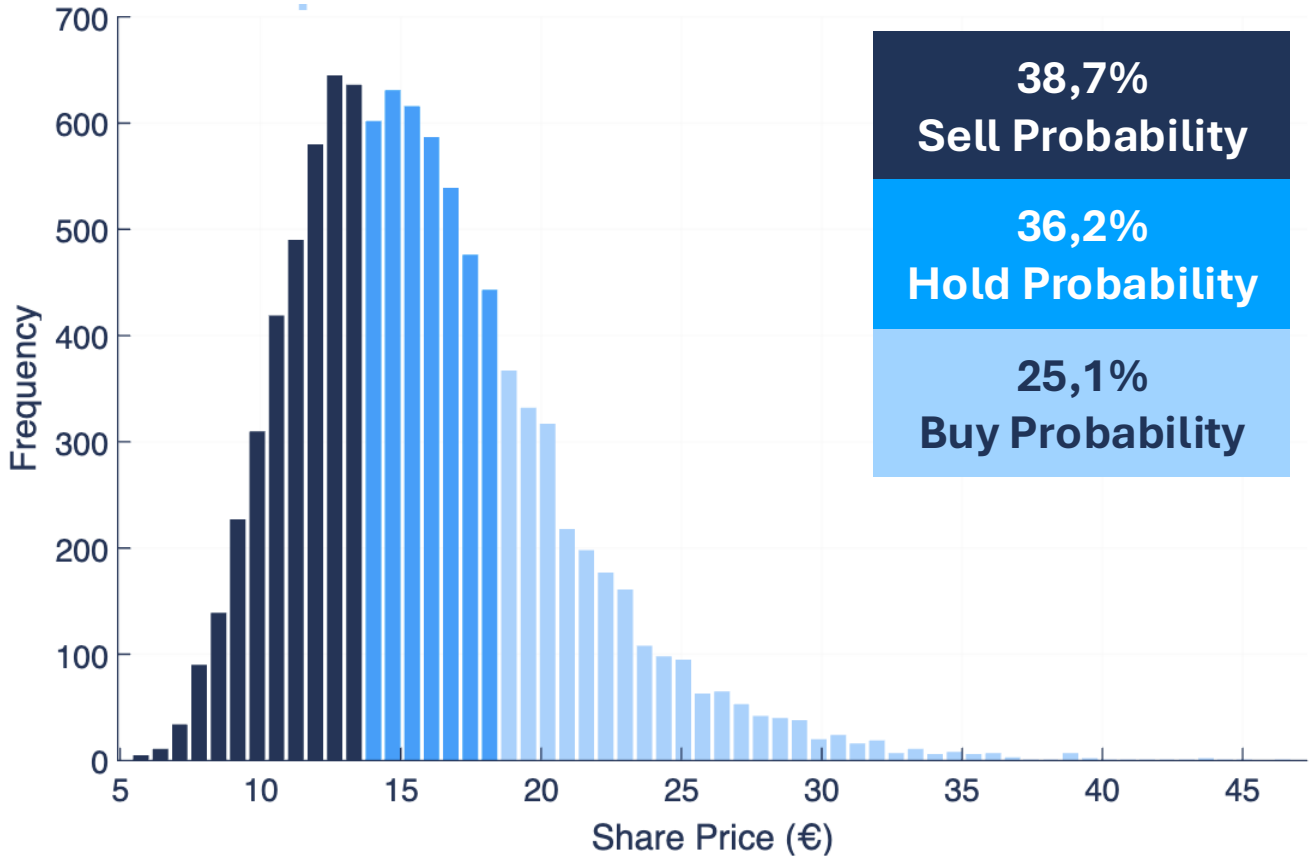
16,1€

DCF Sensitivity and Montecarlo

Sensitivity Matrix

WACC \ g	2.0%	2.5%	3.0%	3.5%	4.0%
6.65%	17.1	18.6	20.6	23.2	23.2
7.15%	15.4	16.6	18.1	20.0	22.5
7.80%	14.0	15.0	**16.1**	17.6	19.4
8.15%	12.8	13.6	14.5	15.7	17.1
9.65%	10.2	10.7	11.2	11.8	12.8

Montecarlo Simulation



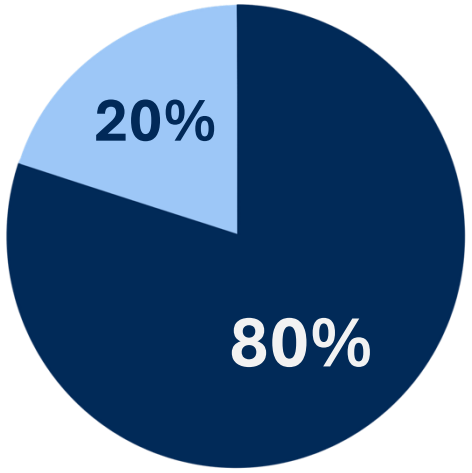
38,7%
Sell Probability

36,2%
Hold Probability

25,1%
Buy Probability

DCF Assumptions

ADVICE: HOLD



16,1€
DCF Target Price

13,90€
Rel. Val. Target Price

Calculation Formula

0.8 × (DCF value) +
0.2 ×(Comparable value)

15,66€
Target Price

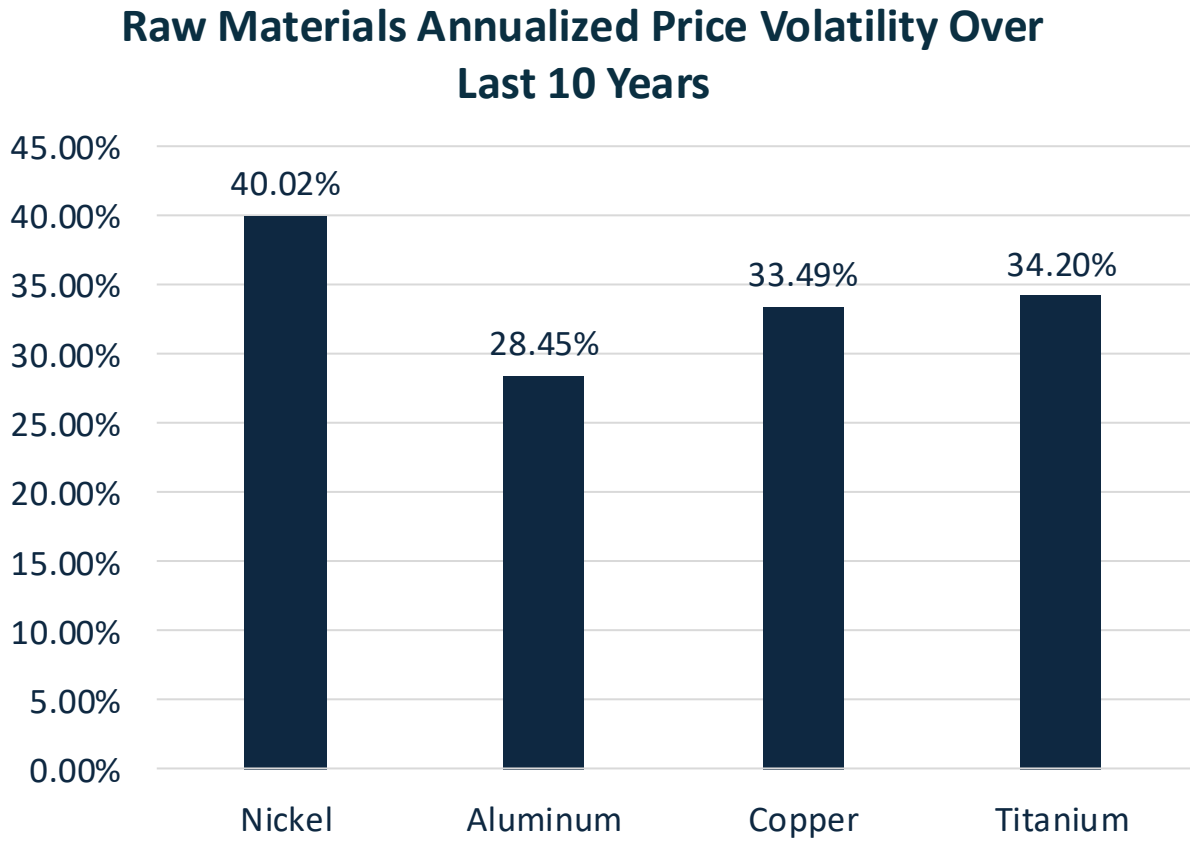
Raw Materials Price Risk - Risk 1

30 % of COGS represented by industrial commodities

Nickel, aluminium, copper and titanium recorded the highest annualized volatility

Price spikes are feared on the basis of an increasing demand and supply regions being particularly geopolitically sensitive

They would lead to an increase in COGS before any pricing response in the short term



Raw Materials Price Risk - Risk 1

Cost pass-through rate of 75% over 12-18 months

Shift towards higher value-added products such as HBM cards and vertical integration

Mitigation Factors

Strategic inventory buffers built when input prices are favourable

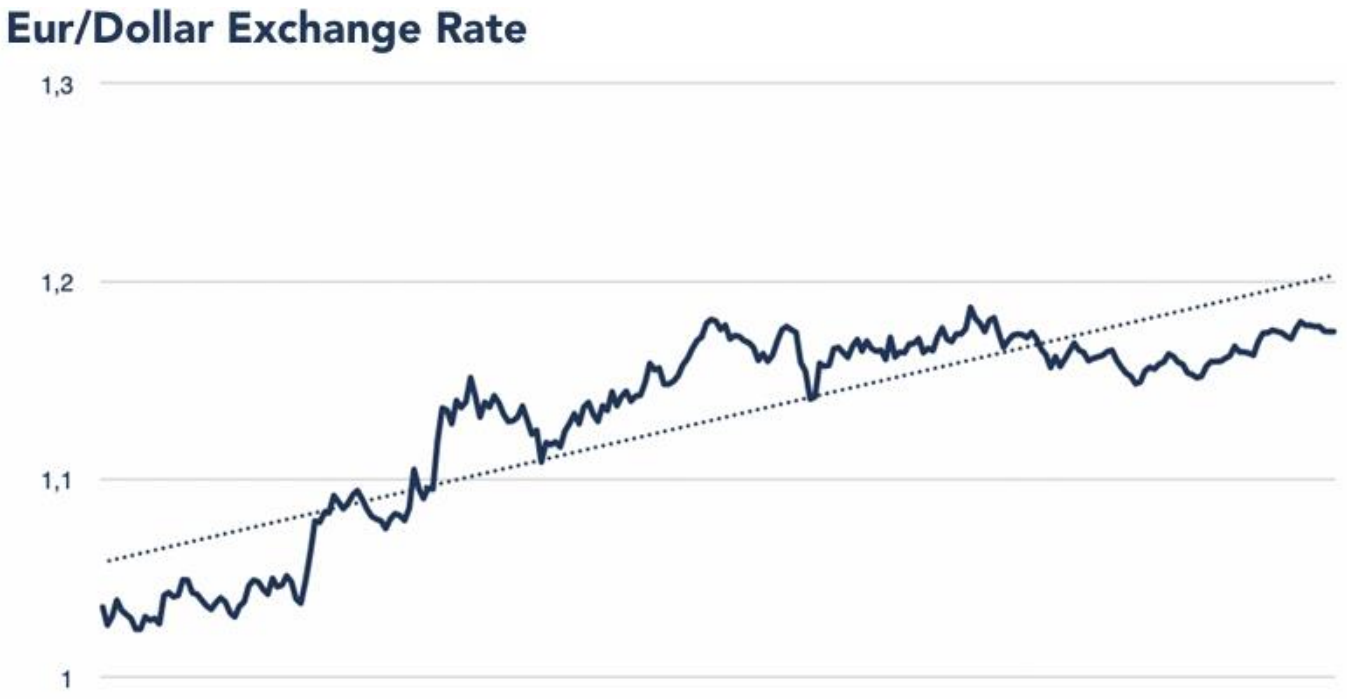
Long-term agreements with strategic suppliers to secure stability

FOREX Risk - Risk 2

Significant currency mismatch: 90% of revenues in USD while greater portion of costs in EUR

This results in a major exposition to EUR appreciating against USD

€35.9 mln FX loss, of which €30.7 unrealized, in H1 2025



USD depreciated by 14.1% against EUR over 2025 and further weakening is expected throughout 2026

FOREX Risk - Risk 2

H1 loss proved currently employed hedging strategies are insufficient

They managed to provide only extremely limited protection against FOREX risk

Mitigation Factors

Gradual diversification of manufacturing outside the Eurozone, reducing EUR-based cost portion

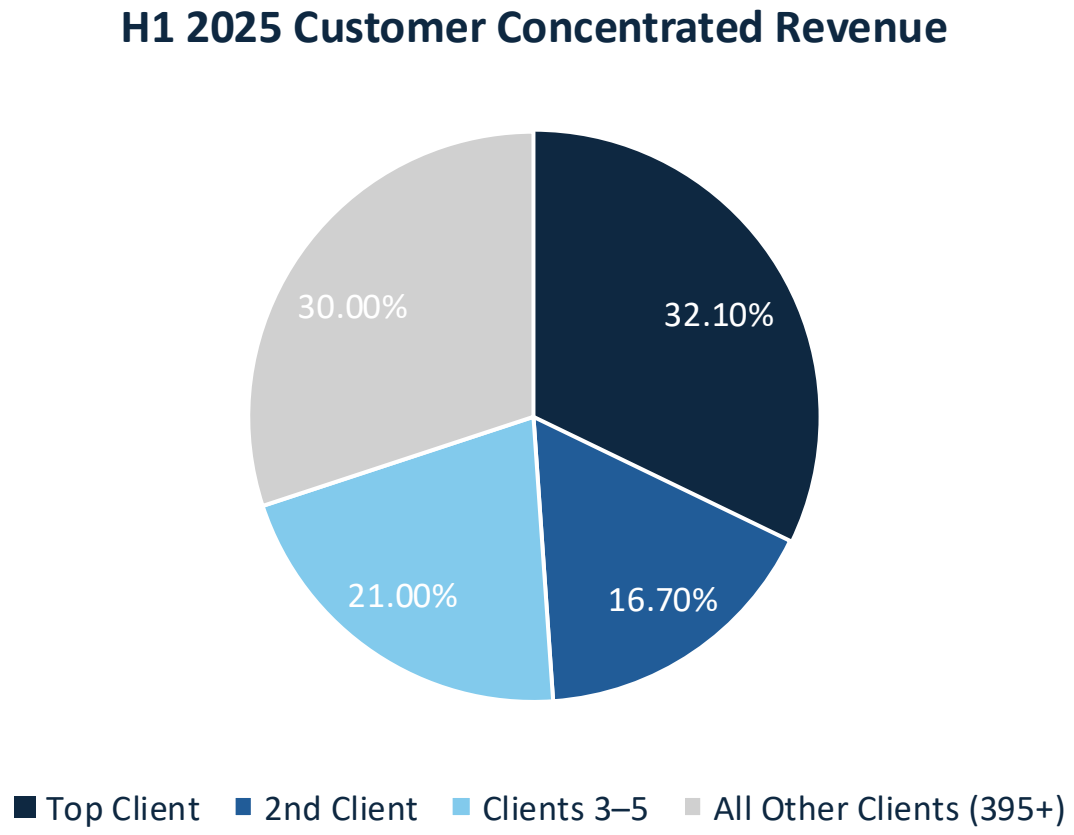
All treasury and risk management activities are centralized, ensuring coordination and efficiency

Customer Concentration Risk - Risk 3

Top 2 clients accounting for 48.8% of H1 2025 Sales

Top 5 clients accounting for 70% of H1 2025 Sales

Portion of Sales due to first client almost doubled from 17% in H1 2024 to 32% in H1 2025

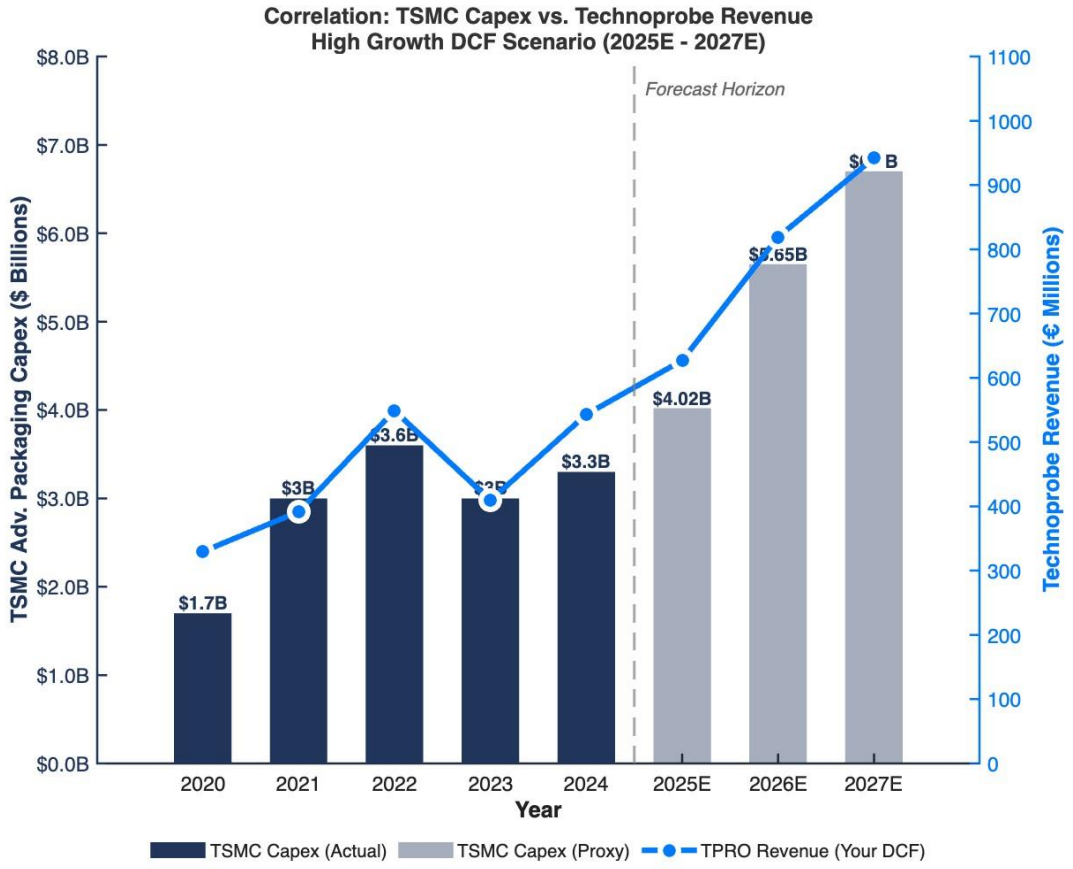


Customer Concentration Risk - Risk 3

Technoprobe's revenue is tightly coupled with TSMC's CAPEX cycles

This was evident in FY 2023, where a moderation in client spending caused a –25.4% revenue contraction

This high dependency exacerbates vulnerability to geopolitical tensions in Taiwan and the threat of major clients insourcing testing to capture margin



Customer Concentration Risk - Risk 3

Mitigation Strategy:
The "Roadmap Inclusion" model

Integration in the developmental architecture of 3 nm and 2 nm nodes years before mass production

→

Once their technology is validated for a specific node, switching costs for foundries become prohibitive

→

This leads to the creation of "implicit" long-term agreements, making Technoprobe an irreplaceable strategic partner

Execution Risk on Innovation - Risk 4

- The semiconductors testing market demands continuous innovation, Technoprobe's R&D intensity stood at 8.3% of sales in H1 2025
- The increasing complexity of AI-driven testing requires higher probe needle density and technological advancement
- Innovation is key to maintain 60% market share in Vertical MEMS, not leaving ground to FormFactor and Micronics Japan

- R&D investment remains high and targeted with 11.6% year-on-year growth despite market volatility
- Four specialized R&D centers ensure constant innovation across the product portfolio
- With over 85% probe cards produced internally, control over technology roadmap and protection of proprietary manufacturing secrets are strongly enhanced

Execution Risk on M&A Integration – Risk 4

- Restructuring of DIS America caused a €4.7 mln provision for onerous contracts and risks, assets held for sales are directly affecting the P&L
- Yee Wei minority buyout, partly settled with 441,176 new issued shares, introduces dilution risk if projected returns aren't met
- €6.5 mln impairment related to Harbour Electronics and Microfabrica underscored commitment to keeping only high-efficiency assets

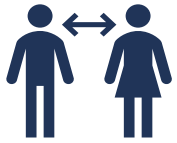
- Cost discipline is enforced, as exit from loss-making Habour Electronics manufacturing activities in the US shows
- Partnership with Advantest, underlined by the sale of a 2.5% stake by T-Plus, secures a critical distribution channel and alignment with a key industry player
- 2021-2025 Long-Term Incentive Plan ties executive compensation to multi-year EBITDA and Total Shareholder Return targets, creating direct stake in successful integration

Risk Matrix

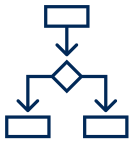

Overall Risk Matrix
Likelihood
Impact
0
1
2
3
4
5
Risk 1
Risk 2
Risk 4
Risk 3

Our ESG Rating

2



3.5



3

Environmental (40%)

Environmental impact including emissions and energy efficency,

Social (30%)

Employee practices, diversity and community engagement

Governance (30%)

Corporate governance structure, transparency, ethical standards

Overall Score:

2.75

Environmental Rating: 2

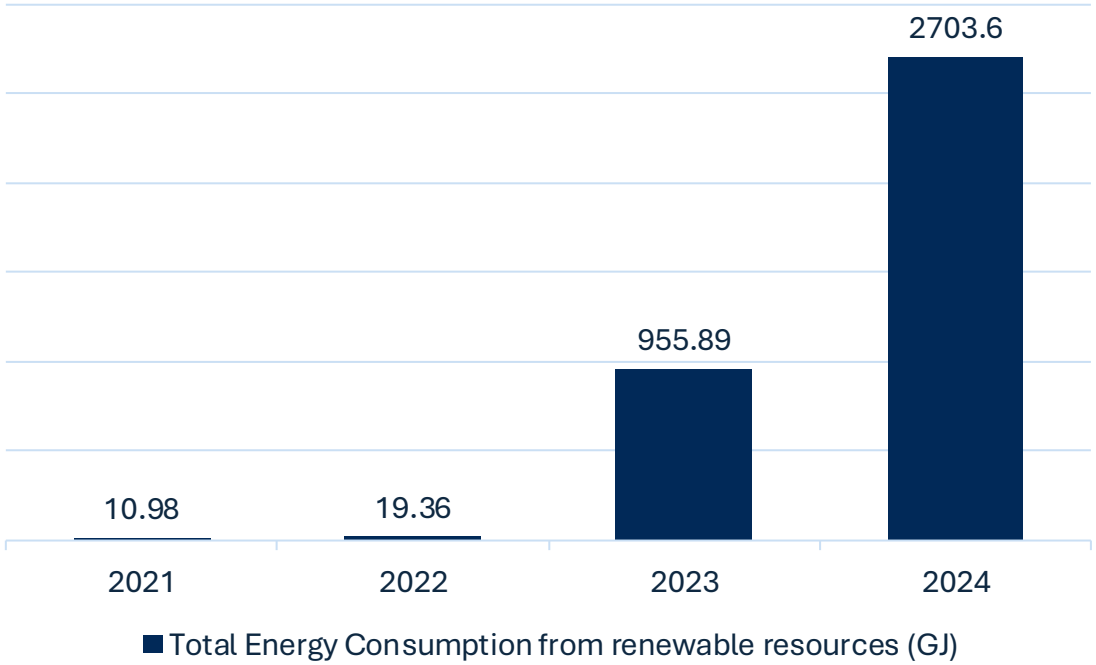
Scope 1 – Direct Emissions	1,378 tCO_2e
Scope 2 – Indirect Emissions (Location-Based)	27,883 tCO_2e
Scope 2 – Indirect Emissions (Market-Based)	29,094 tCO_2e
Scope 3 – Other Indirect Emissions	83,615 tCO_2e

GHG Emissions Overview – FY 2024

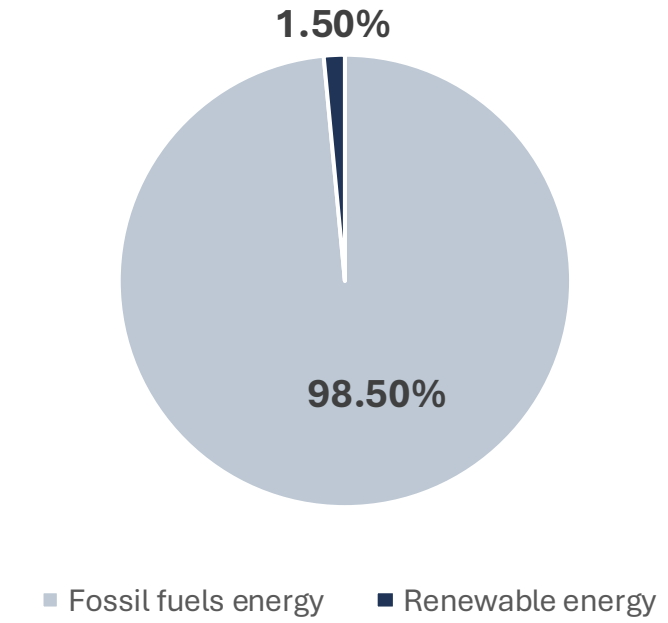
Greenhouse Gas Emissions by Scope (tCO_2e)

Environmental Rating: 2

Evolution of Renewable Energy Consumption (2021–2024)



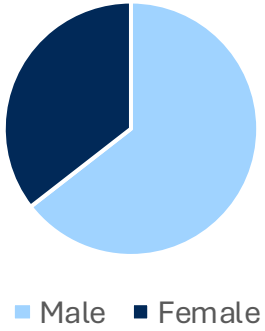
Energy Mix Composition (2024)



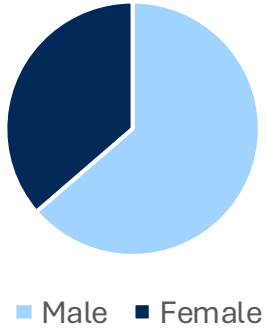
Energy Efficiency Plan	Launched 2023

Social Rating: 3.5

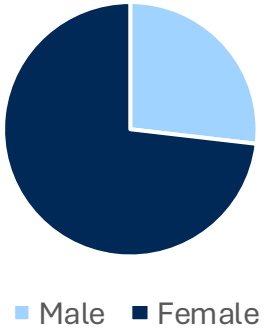
Full-Time Contract



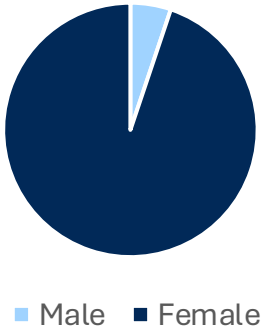
Permanent Contract



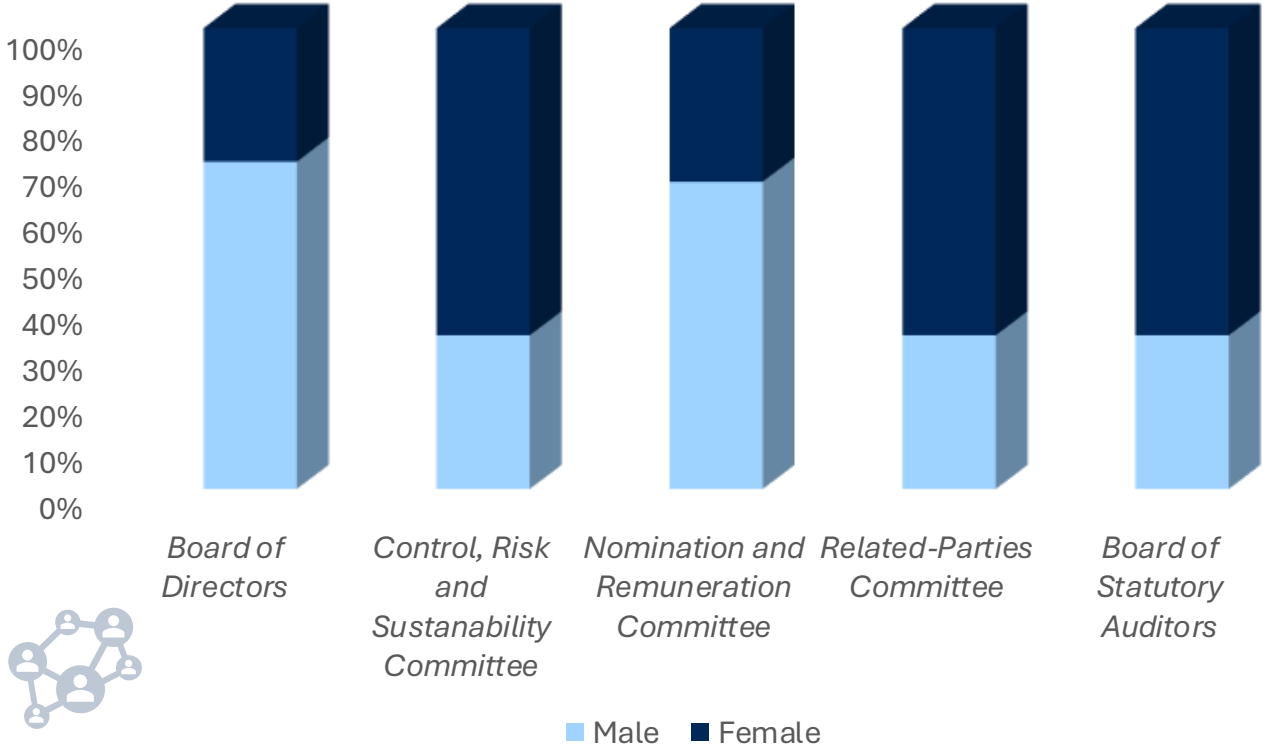
Part-Time Contract



Temporay Contract



Diversity: Gender Representation

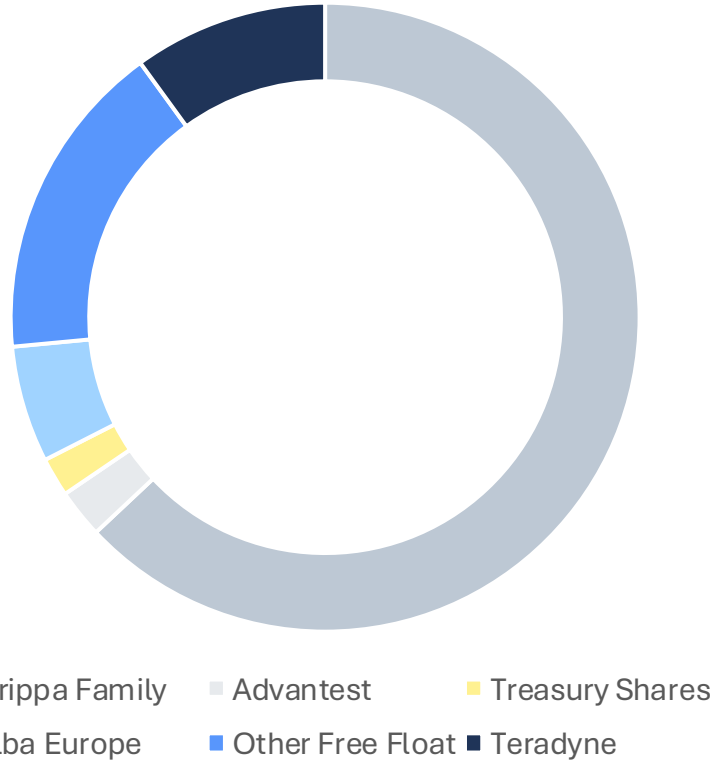


Relevant Statistics

- Gender Pay Gap: **29%**
- Women Representation: **36%**
- Injury Rate: **1.65**

Governance Rating: 3

Shareholder's Structure



Board Gender Diversity	29%	✓
Non-Executive Board Members	72,73%	✓
Independent Board Members	63,63%	✓
Ordinary Shares with Multiple Vote Rights	67,78%	✓

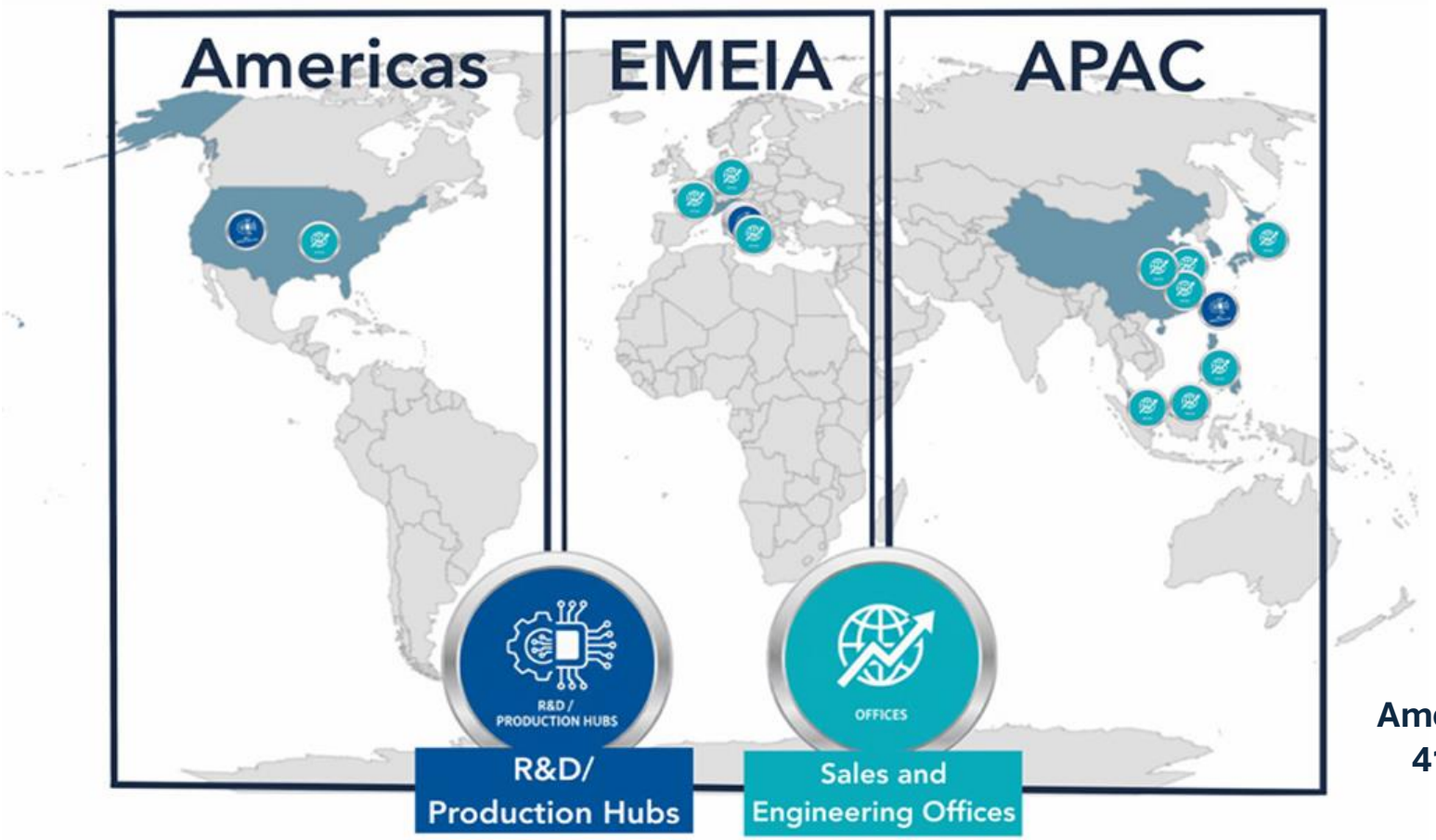
APPENDIX

Technoprobe Timeline

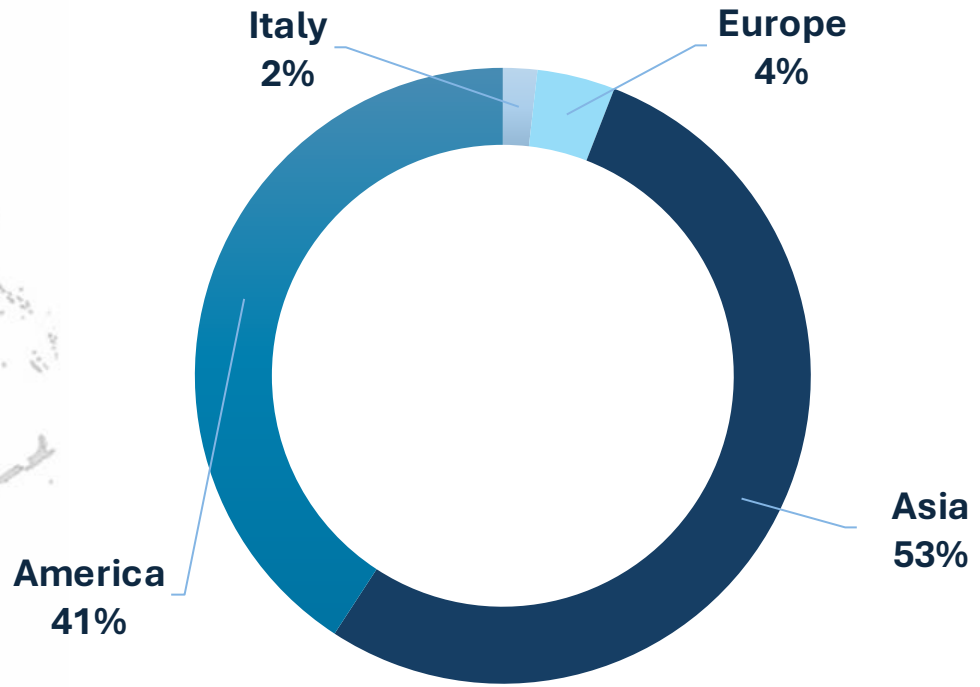
Highlights through the years

- **1996** — Formation of Technoprobe
- **2001** — International Expansion
- **2007** — Vertical MEMS Technology
- **2011** — Innovation of TPEG MEMS
- **2019** — Acquisition of Microfabrica
- **2022** — IPO
- **2023** — Acquisition of Harbor Electronics and MW Plasma
- **2024** — Acquisition of DIS business unit from Teradyne. Inc.
- **2025** — Acquisition of Innostar Service Inc. and YeeWei Inc. minorities
- **2025** — Partnering with Advantest Europe GmbH

Geographical Footprint

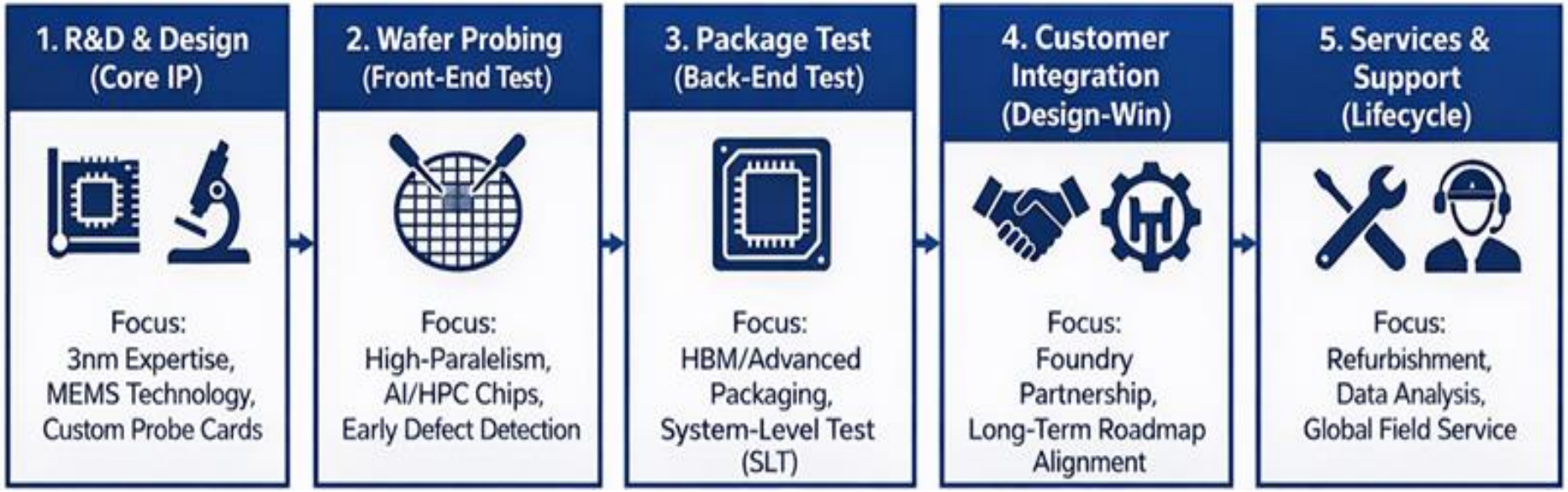


Geographical revenue breakdown



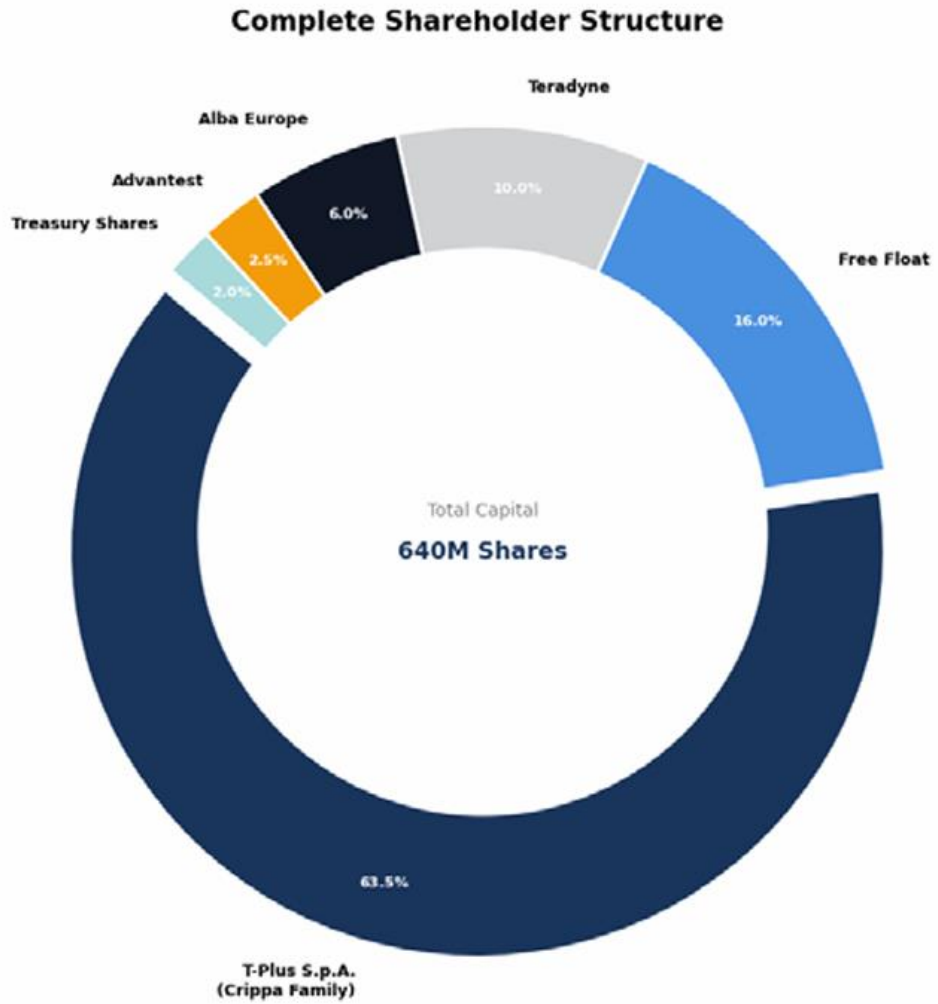
23 Legal Entities 3355 Consolidated Employees 4 R&D centres +600 Patents

Value Chain



Sophisticated transition from specialized component manufacturer to a vertically integrated interface solution provider. Starting from R&D, implementing vertical integration to concluding high-margin services and Support cycle.

Shareholder's structure

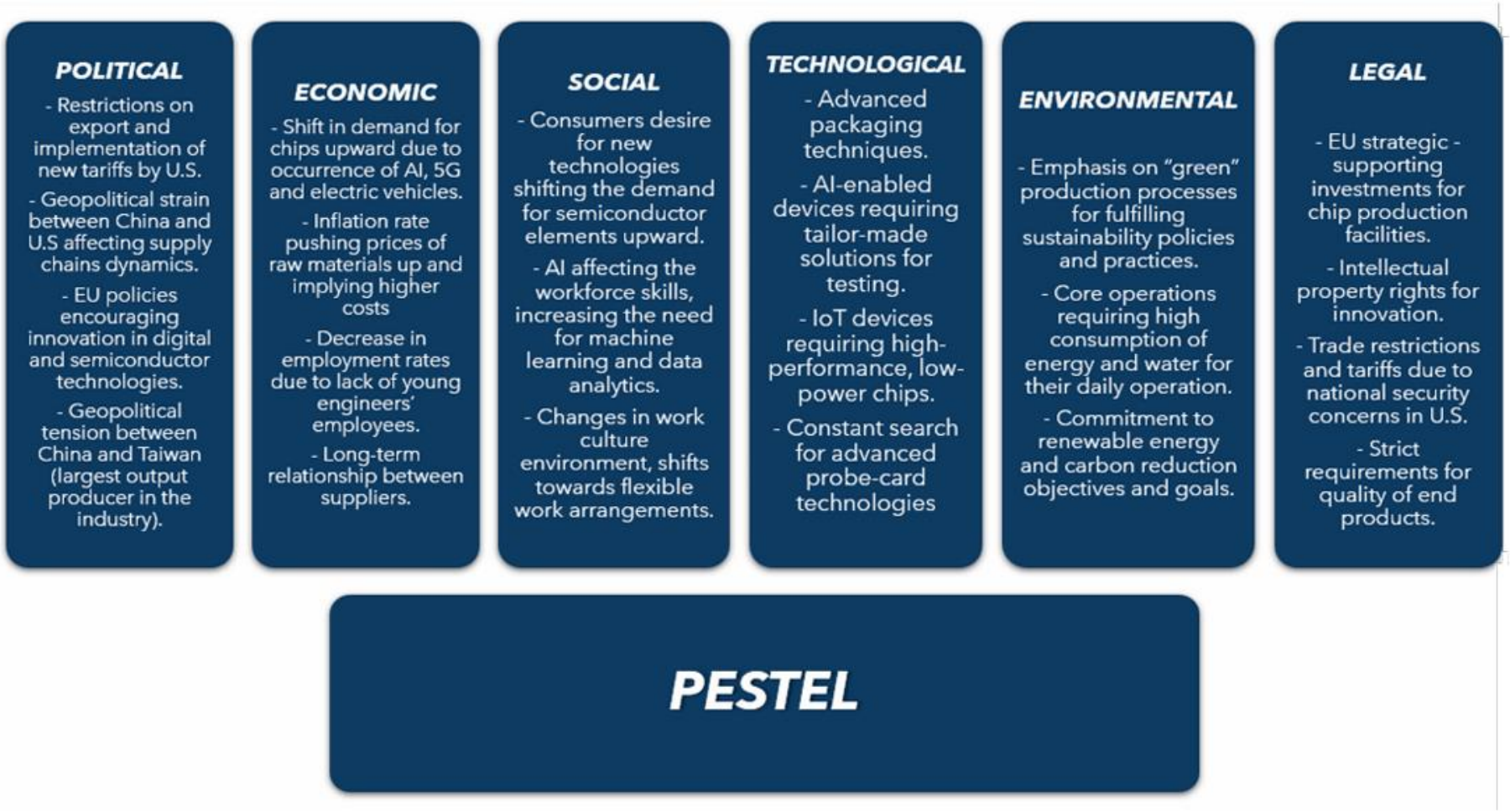


Ownership is highly concentrated, with T-Plus (Crippa Family) holding a controlling 63.5% stake, while the remaining shares are distributed among strategic investors and a 16% free float.

M&A

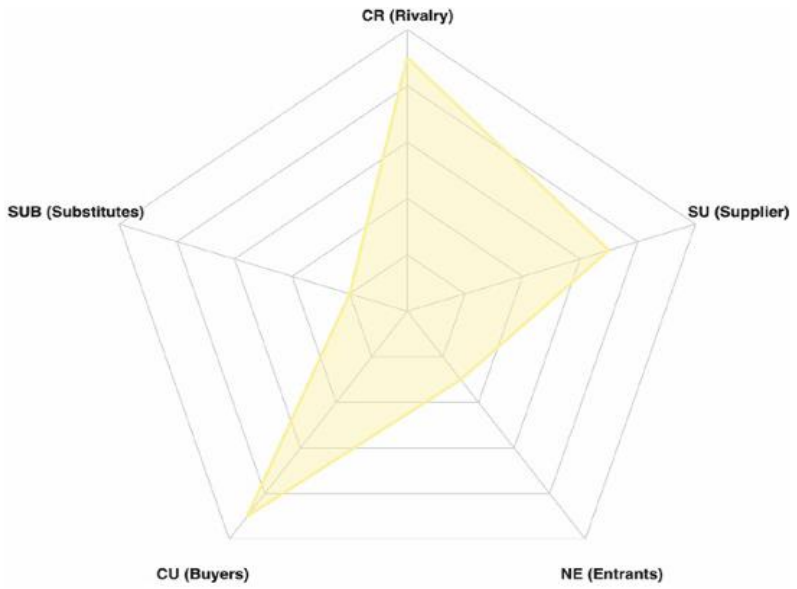
Year	Transaction	Buy/Sell	Target	Country	Business Unit	Rationale
2019	Merger and Acquisition	Buy	Microfabrica inc.	U.S.	3D MEMS	To expand advanced probe/ micro-component technology platform.
2023	Merger and Acquisition	Buy	Harbor Electronics Inc.	U.S.	PCBs for testing systems	Allowing vertical integration into advanced printed circuit boards.
2023	Merger and Acquisition	Buy	MW Plasma Inc.	U.S.	Process equipment	To bring in construction and design capabilities for microwave systems for CVD and expand technical knowledge for advanced materials.
2024	Merger and Acquisition	Buy	Teradyne DIS department.	U.S.	PCBs and high-performance interfaces	Strengthening competencies in PCBs and high-performance interfaces.
2024	Minority shares	Buy	Teradyne inc.	U.S.	Equity link	Combined transaction in which Teradyne acquired 10% of Technoprobe.
2025	Strategic partnership	-	Advantest Europe GmbH	Germany	PCB supply and joint development	Agreements signed for PCB development and supply with inclusion of supplier priority arrangements.
2025	Minority interests	Buy	Yee Wei Inc.	Taiwan	Governance consolidation	To expand presence in Taiwanese semiconductor market and strengthen its local manufacturing.

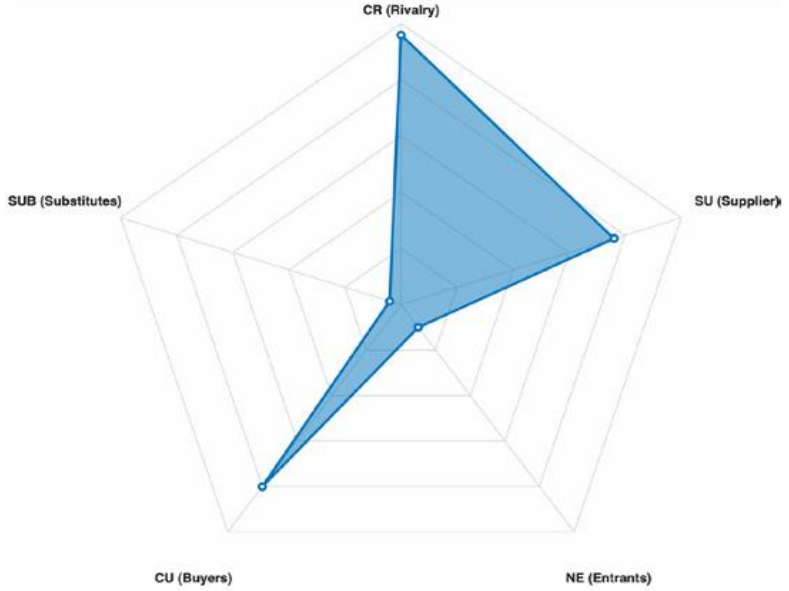
PESTEL Analysis



SWOT Analysis

Porter Five Forces Analysis

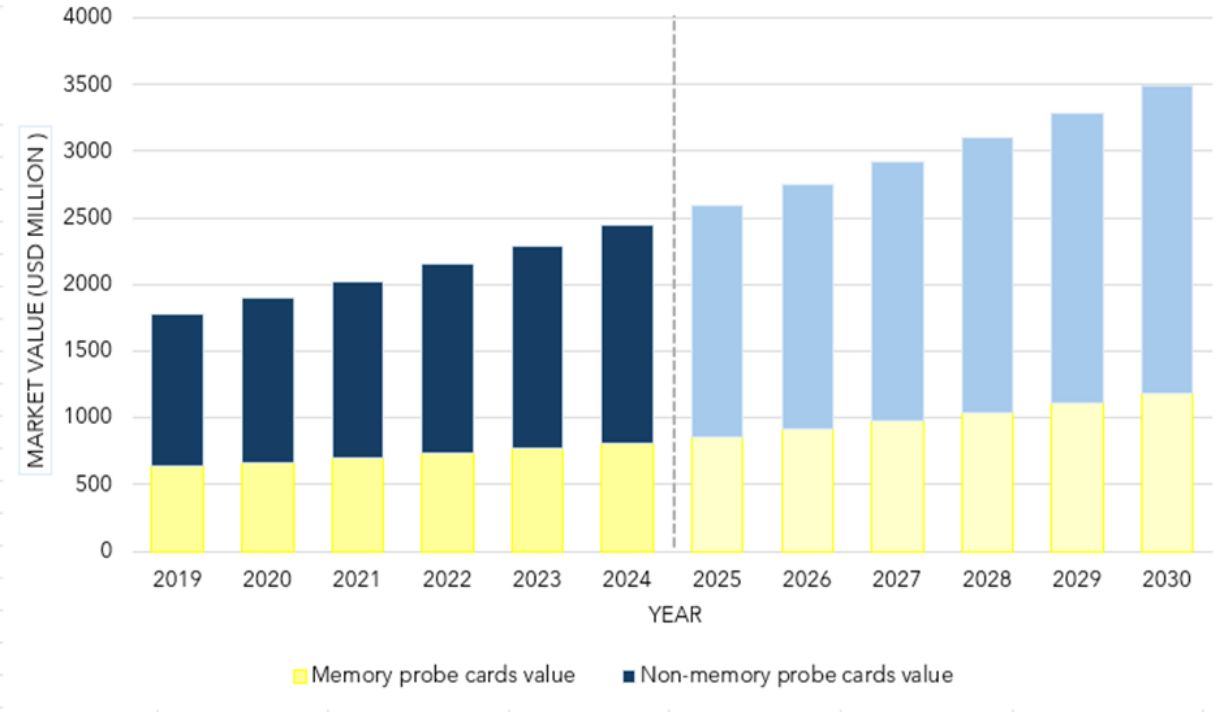




Technoprobe operates in a high-barrier duopoly where AI-driven complexity shifts competition from volume to value, reduces buyer power, raises entry barriers to insurmountable levels and reinforces a winner-takes-all innovation dynamic that structurally protects its expanding margins.

Market Positioning

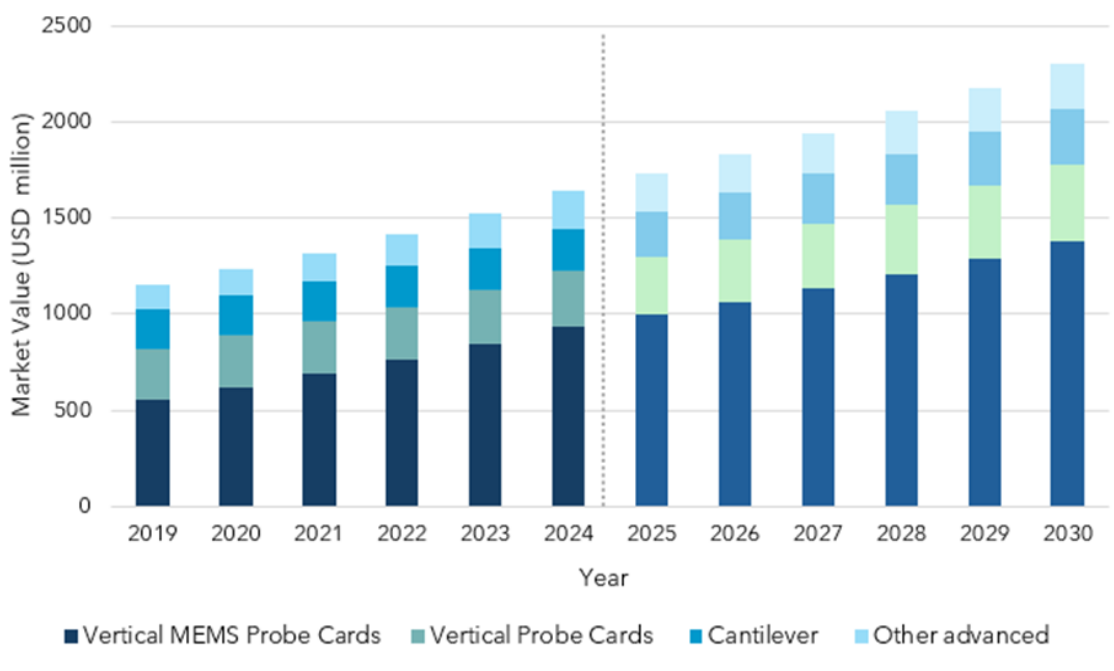
Probe Card Market by Type (2019-2030)



CAGR % 2019-2024: 4.30% for Memory and 7.30% for Logic

CAGR % 2025-2030: 6.60% for memory and 5.90% for Logic

Logic Probe Card by Technology (2019-2030)



CAGR % 2019-2024: 10.90% for Vertical MEMS, 1.80% for Vertical probe Cards, 1.40% for Cantilever, 9.30% for Other advanced.

CAGR % 2025-2030: 6.60% for Vertical MEMS, 5.70% for Vertical probe Cards, 5.00% for Cantilever, 3.20% for Other advanced

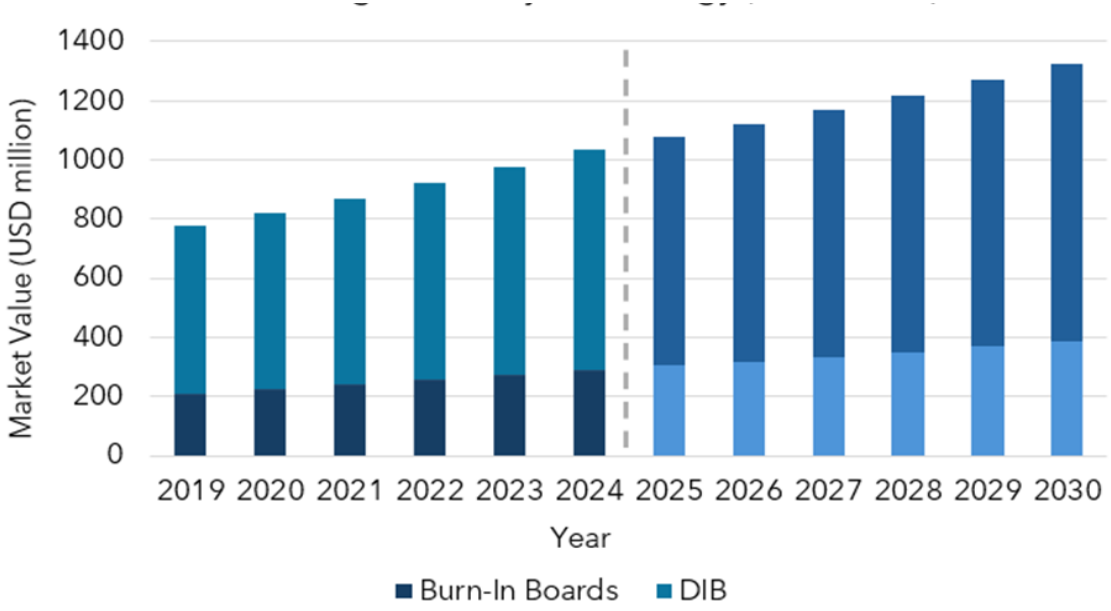
Market Positioning

Final testing Market Size (2019-2030)

CAGR % 2019-2024: 5.90%

CAGR % 2025-2030: 3.90%

Final testing by Technology (2019-2030)

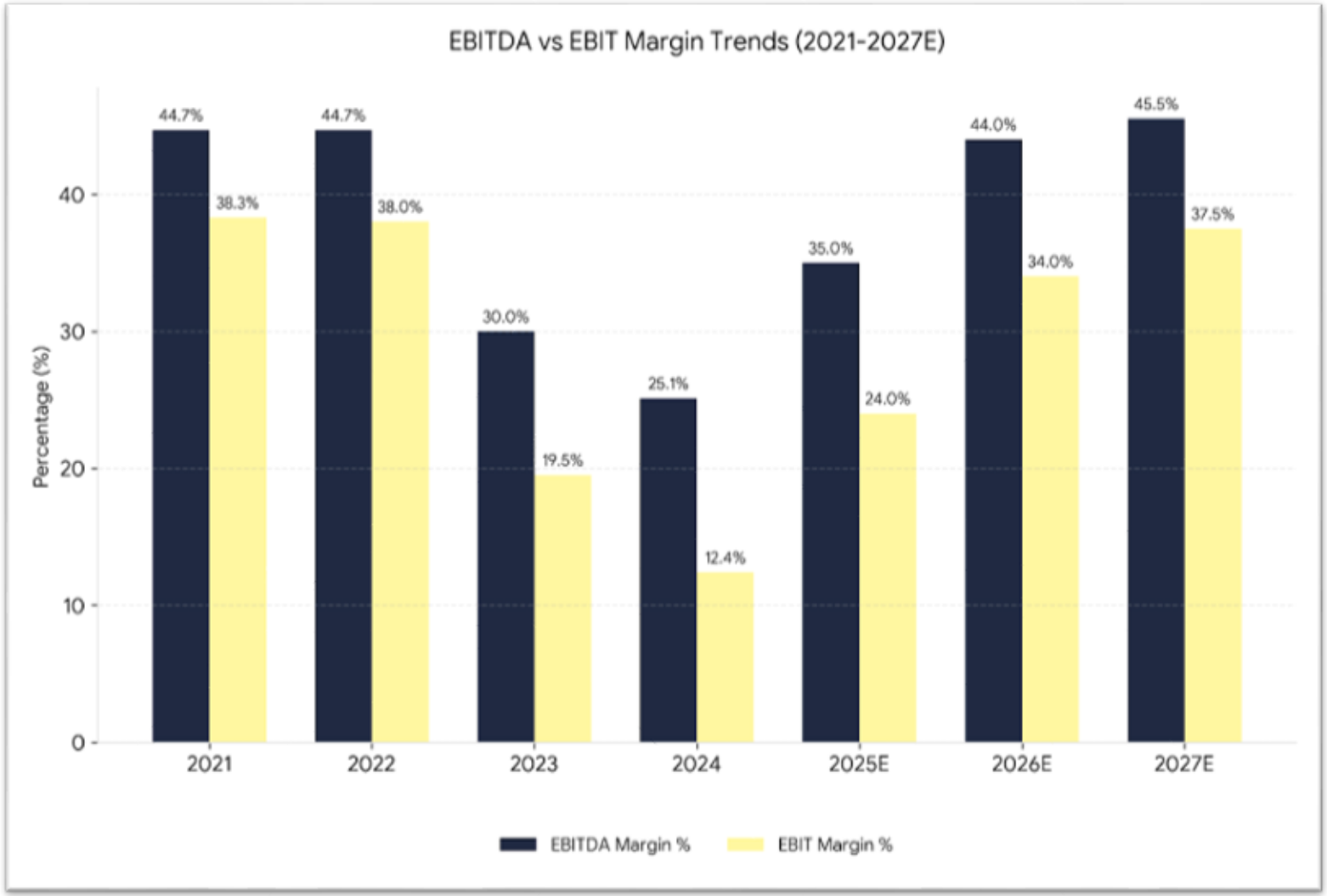


CAGR % 2019-2024: 6.70% for Burn-In Boards and 5.60% for DIB.

CAGR% 2025-2030: 4.90% for Burn-In Boards and 3.90% for DIB

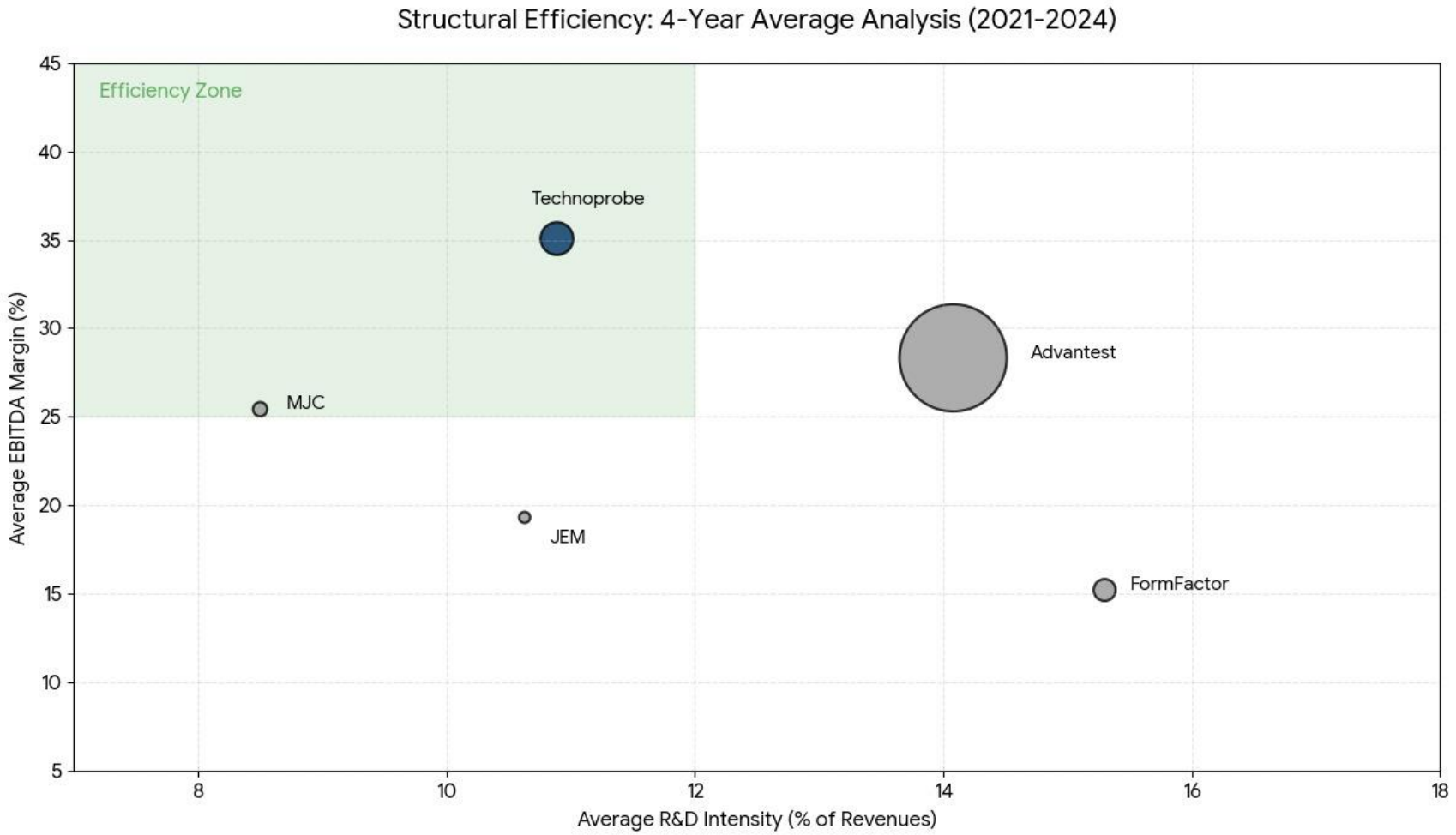
Margins Evolution

- **25.4% revenue drop** in 2023 from consumer destocking compressed margins through lower capacity utilization.
- **High fixed-cost rigidity (~25%)** from sustained R&D protected technology but pressured short-term profitability.
- **Operating leverage recovery:** The significant 2024 trough in EBIT margin (12.4%) highlights the impact of **accelerated D&A** following recent capacity expansions. The anticipated rebound to 45%+ EBITDA margins is predicated on the ramp-up of high-complexity AI-driven MEMS probe cards.

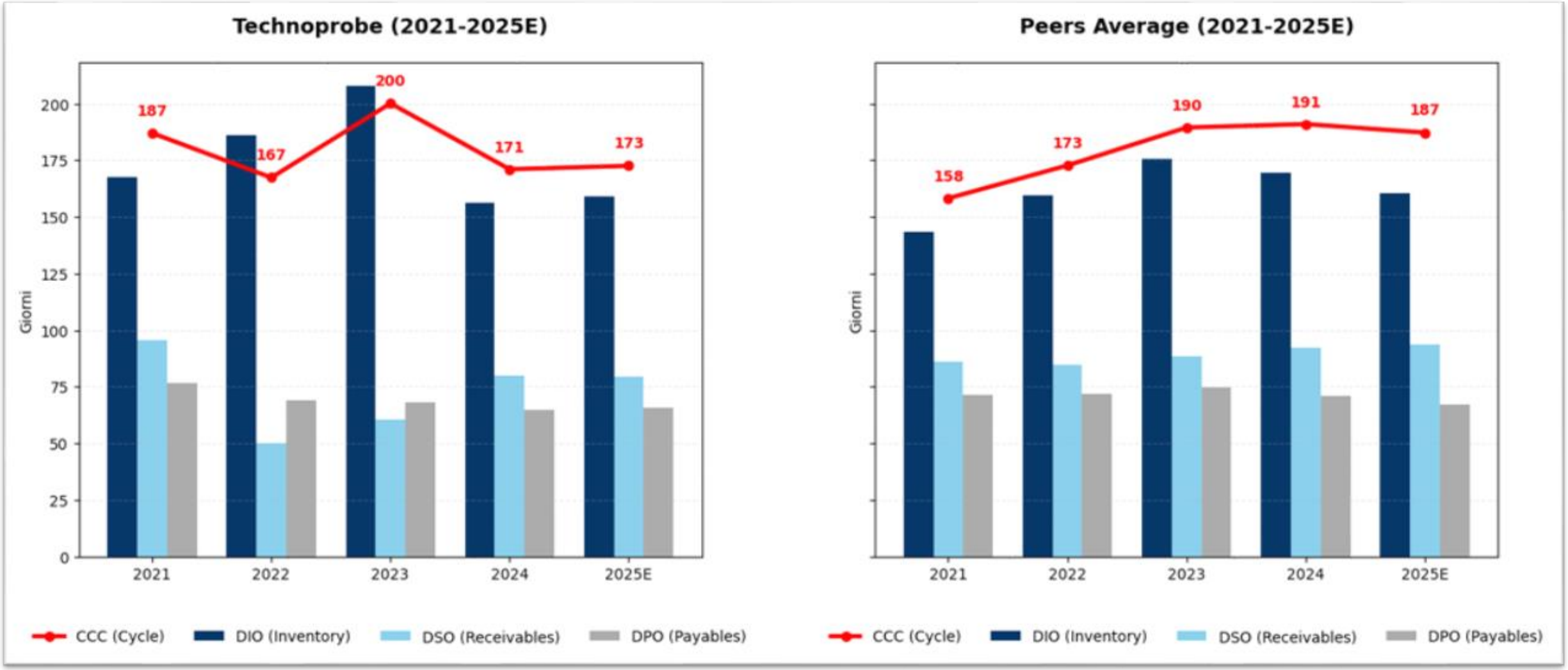


Efficiency: A peer comparison

- Top-Tier Profitability: best-in-class 4-year average EBITDA margin of ~35%.
- Optimized R&D Intensity: Strategic R&D spending at ~11% allows TPRO to remain in the "Efficiency Zone," delivering higher returns than peers with higher spending like FormFactor



Cash Conversion Cycle

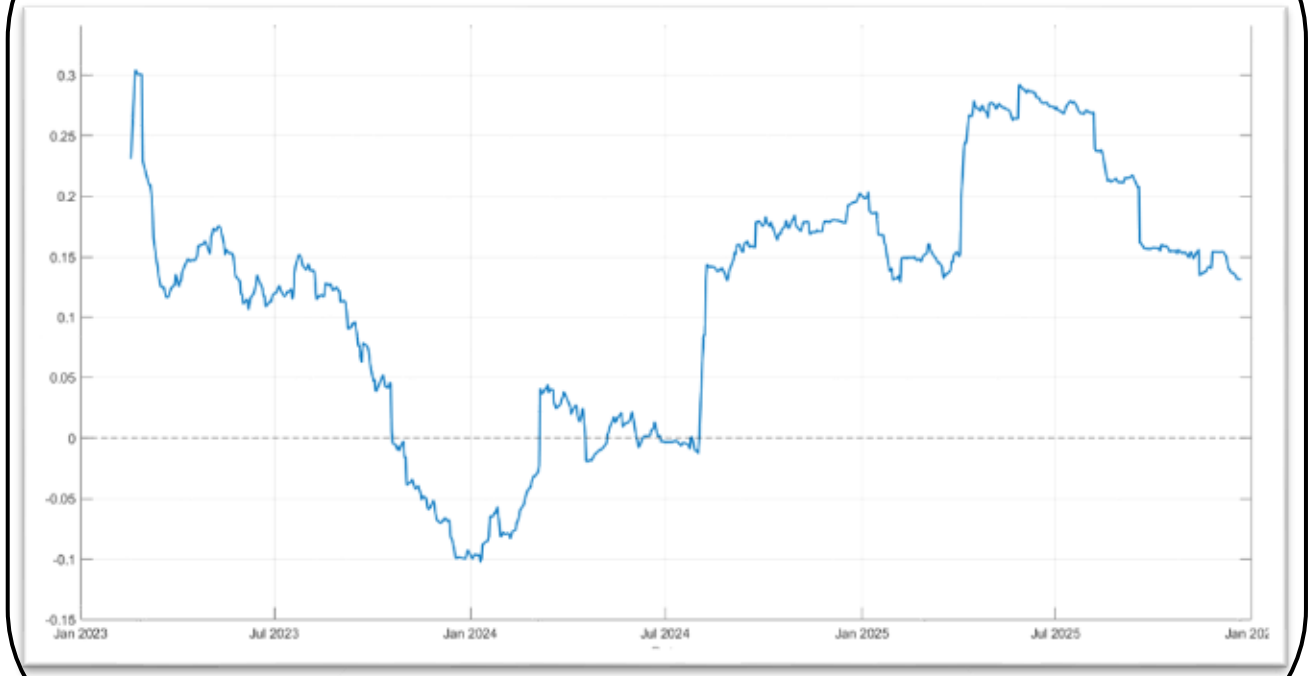


Exposure to Market Uncertainty

Technoprobe's price volatility, measured via the log-difference of daily highs and lows, shows an evolving relationship with market sentiment as tracked by the 252-day rolling correlation with VIX.

The correlation remained largely suppressed or slightly negative in early 2024 but experienced a notable upward shift through 2025, reaching a peak near 0.30 by mid-year. This trend highlights an increasing sensitivity to systematic risk factors, suggesting that the stock's idiosyncratic volatility is becoming more aligned with global macro shocks.

Rolling Correlation

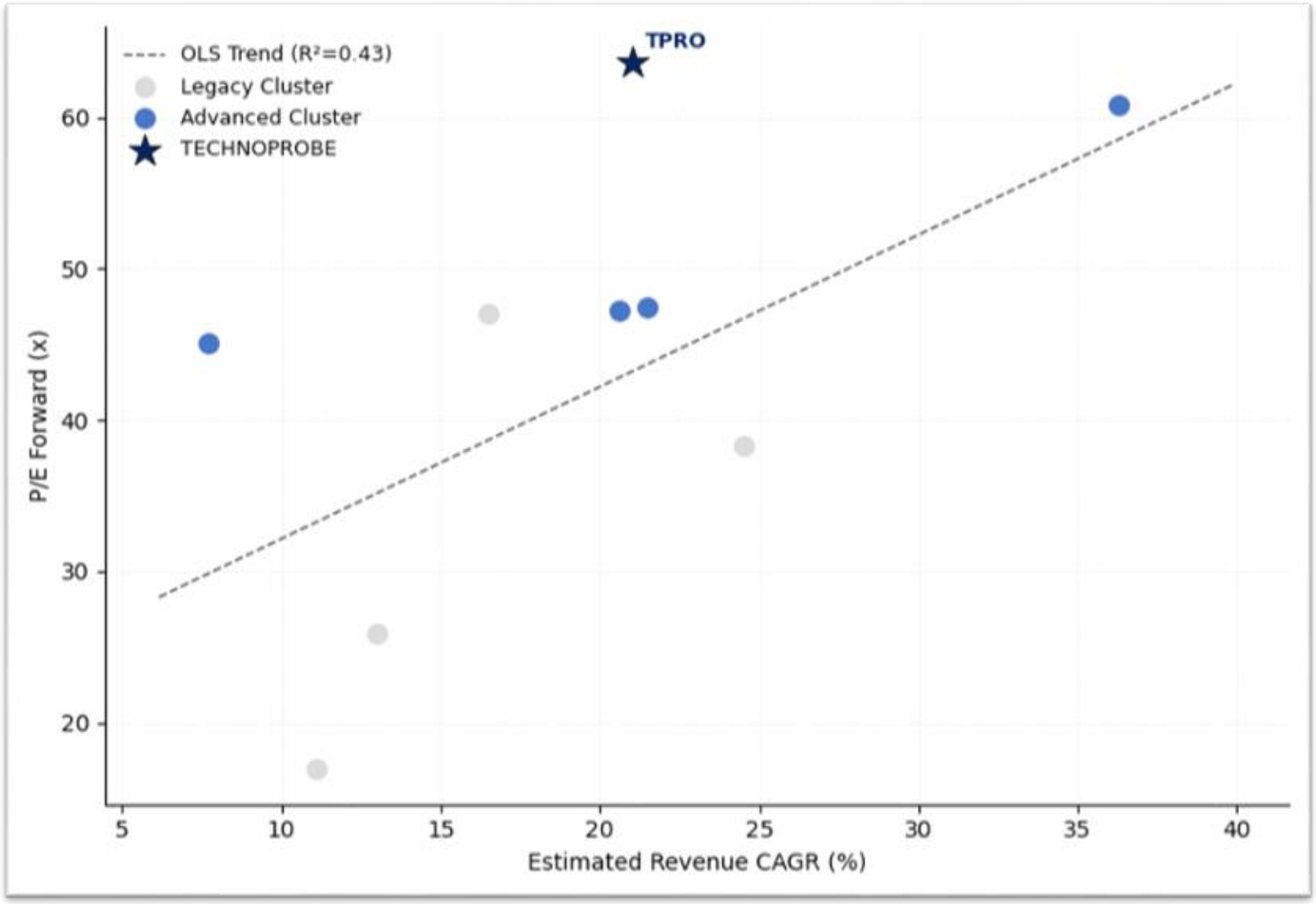


Peers Selection and Comparison

Name	Ticker	Business	Mkt Cap (EUR)	P/E Forward	CAGR:2FY	EBITDA margin	EPS:2027	EV/EBIT	EV/EBITDA
Legacy Group (Consumer & Auto)									
COHU INC	COHU US	ATE Tester	1,13B	47,06	16,50%	-2,51%	1,03 €	13,19	24,21
MICRONICS JAPAN	6871 JP	Probe Cards	1,95B	25,89	13,00%	27,71%	0,26 €	16,47	11,06
JAPAN ELECTRONIC	6955 JP	Probe Cards	332,48M	16,92	11,10%	24,26%	1,57 €	10,1	15.0
CHROMA ATE INC	360 TT	ATE Tester	11,51B	38,28	24,50%	28,96%	4,10 €	26,59	32,79
Advanced Testing Leaders (AI)									
TERADYNE INC	TER US	ATE Tester	32,78B	47,23	20,60%	25,22%	3,70 €	30,65	36,38
MPI CORP	623 TT	Probe Cards	6,57B	46,42	36,30%	29,85%	2,28 €	28,09	36,86
FORMAFACTOR INC	FORM US	Probe Cards	4,70B	45,06	7,70%	13,90%	0,61 €	31,05	31,02
ADVANTEST CORP	6857 JP	ATE Tester	112,18B	47,43	21,50%	32,73%	8,78 €	36,69	42,43
TECHNOPROBE SPA	PRO IM	Probe Cards	10,40B	63,68	21,00%	25,12%	0,35 €	31,05	31,02

To capture Technoprobe's strategic pivot, our analysis integrates Probe Card and ATE leaders sharing core drivers related to node complexity. Peers are divided into an **"Advanced" cluster** (HBM, <7nm, and AI) and a **"Legacy" cluster** (Standard consumer/auto), enabling a **weighted relative valuation**. This methodology quantifies TPRO's structural transition from cyclical markets toward the high-margin AI testing landscape by applying cluster-specific multiples to the evolving revenue mix.

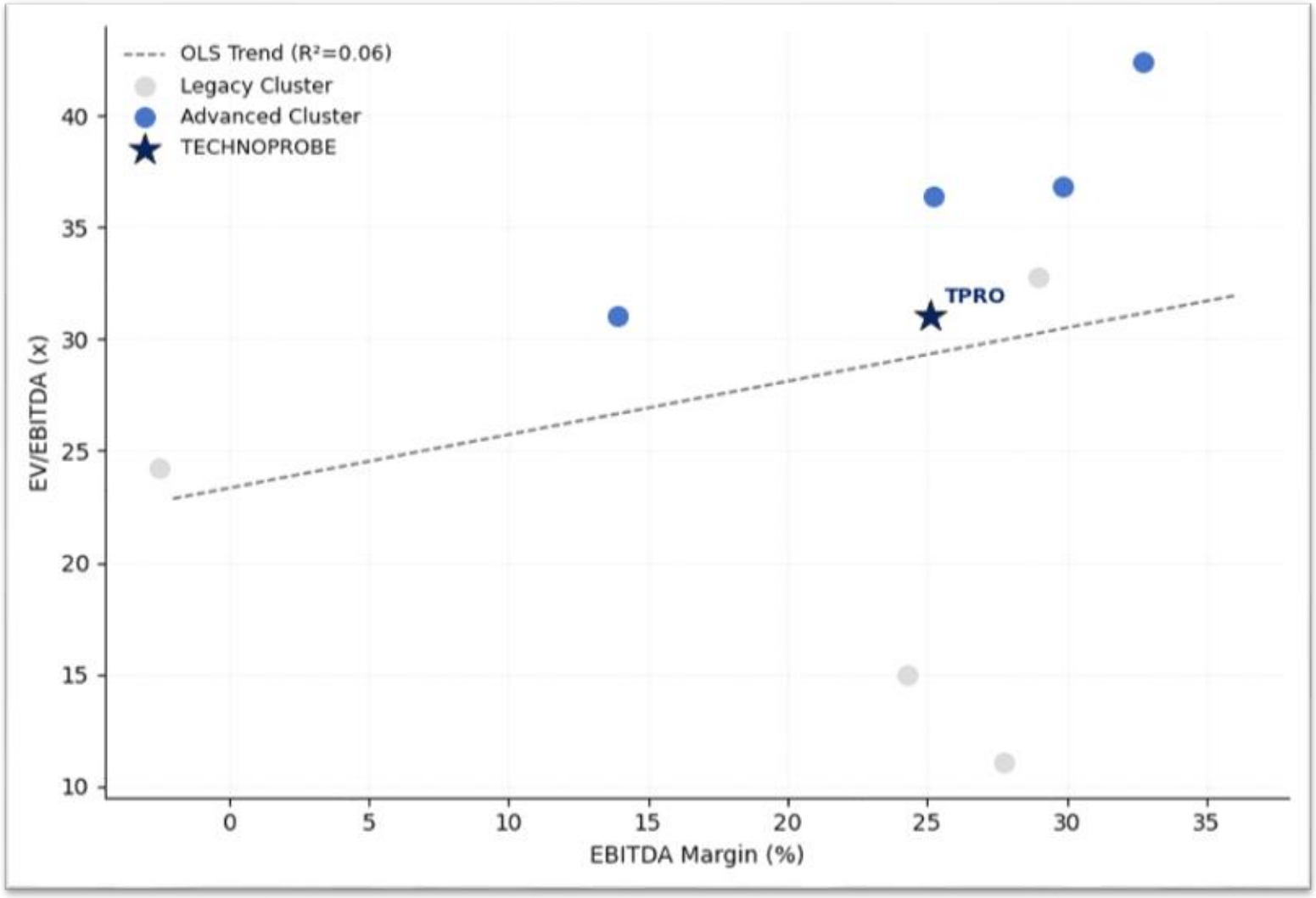
Relative Valuation: First Robustness Check



As a robustness check for our blended P/E valuation strategy, we performed an OLS regression (P/E = 28.52 + 0.57*CAGR). The regression predicts a multiple of 40.5x for Technoprobe's 21% growth profile. This is highly with our 39.2x blended target multiple derived from the revenue re-rating. The close alignment between the regression and our blended approach statistically validates that our valuation is fundamentally anchored to the sector's growth-valuation frontier.

Relative Valuation: Second Robustness Check

The graph highlights the high correlation between operational efficiency and market pricing. Technoprobe's 25.1% EBITDA margin positions the company on the efficiency frontier alongside top-tier ATE leaders. This regression confirms that TPRO's valuation is a direct reflection of its superior profitability and successful vertical integration strategy. By maintaining margins significantly above the Legacy cluster, TPRO justifies its premium multiple through its ability to scale high-margin AI testing volumes.



Discounted Cash Flow

			High Growth Projection Period				Medium Growth Projection Period					
DCF (€M)	**2024A**	**2025E**	**2026E**	**2027E**	**2028E**	**2029E**	**2030E**	**2031E**	**2032E**	**2033E**	**2034E**	**TV**
Revenues	543	627	815	1011	1223	1468	1702	1924	2116	2264	2332	
% growth	32,70%	*15,5%*	*30,0%*	*24,0%*	*21,0%*	*20,0%*	*16,0%*	*13,0%*	*10,0%*	*7,0%*	*3,0%*	
EBITDA	136	219,45	359	450	544	653	758	856	942	1008	1038	
% margin	25%	*35,0%*	*44,0%*	*44,5%*	*44,5%*	*44,5%*	*44,5%*	*44,5%*	*44,5%*	*44,5%*	*44,5%*	
EBIT	67	144	277	379	459	550	638	721	794	849	875	
% margin	12,40%	*24%*	*34%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	*38%*	
% Tax rate	28%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	
NOPAT	48	110	211	288	349	418	485	548	603	645	665	
+D&A	70	69	82	81	86	103	119	135	148	158	163	
%reveneus	12,80%	*11%*	*10%*	*8%*	*7%*	*7%*	*7%*	*7%*	*7%*	*7%*	*7%*	
- Δ Working Capital	16	28	29	32	33	26	30	26	28	21	22	
CF From operations	102	151	263	337	401	495	574	657	723	783	806	
- Net CapEx	94	75	130	142	147	154	162	164	169	170	163	
FCF to the firm	8	76	133	195	254	341	412	493	554	613	643	13.268
%Reveneus	*1%*	*12%*	*16%*	*19%*	*21%*	*23%*	*24%*	*26%*	*26%*	*27%*	*28%*	
% EBIT	*6%*	*35%*	*37%*	*43%*	*47%*	*52%*	*54%*	*58%*	*59%*	*61%*	*62%*	
PV of FCFF			109	163	183	253	270	294	300	310	313	7275
Discounted FCFF				707					1486			

Entreprise Value	**9.720**
NFP	675
Implied Equity Value	**10.395**
N° Shares Outstanding	647
Share Price	**16,1**

Discounted Cash Flow

Cost of Equity (Ke)	8.32%	Capital Asset Pricing Model (Rf + β * ERP)
Risk-free rate (Rf)	3,98%	Anchored to the 10-year Italian BTP yield
Market Beta (β)	0,904	Computed via OLS regression of TPRO's daily excess returns against a revenue-weighted blended market excess return
Market Premium	4,80%	Derived as a geographic weighted average of regional Equity Risk Premiums based on TPRO's revenue exposure
Cost of Debt (Kd)	5,25%	After assigning a synthetic rating of AAA, we used the rate on AAA-rated corporate debt as of early 2026 (Moody)
Tax Rate	24%	Derived from historical Technoprobe's tax rates
E/(D+E)	88%	Derived from company data
D/(D+E)	12%	
WACC	7,80%	Final Weighted Average Cost of Capital calculation

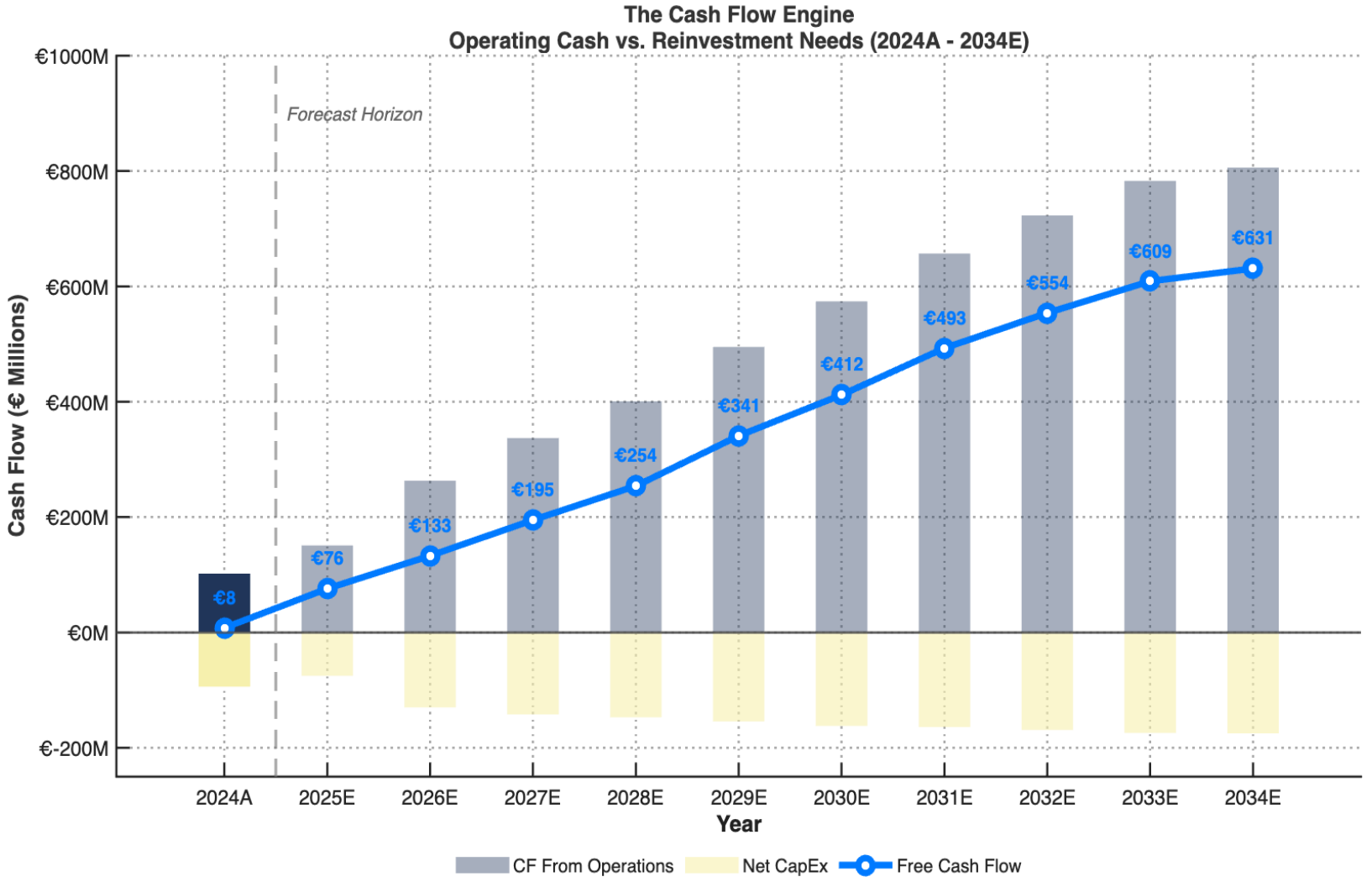
Cost of Equity of **8.32%** was calculated using the Capital Asset Pricing Model (CAPM) formula, $Ke=Rf+Bm\times ERP\_blended$. We tested Fama-French 3-factor and 5-factor models but ultimately chose CAPM for its reliability and to avoid overfitting, as most of the extra factors proved statistically insignificant. We utilized a blended Equity Risk Premium (ERP) of **4.8%**, which we carefully weighted according to Technoprobe's specific geographic revenue exposure.

The Market Beta (0.904) was derived from an OLS regression of Technoprobe's daily excess returns against a blended market excess return. This benchmark was constructed by weighting regional equity indices according to the company's geographic revenue split.

Montecarlo Assumptions

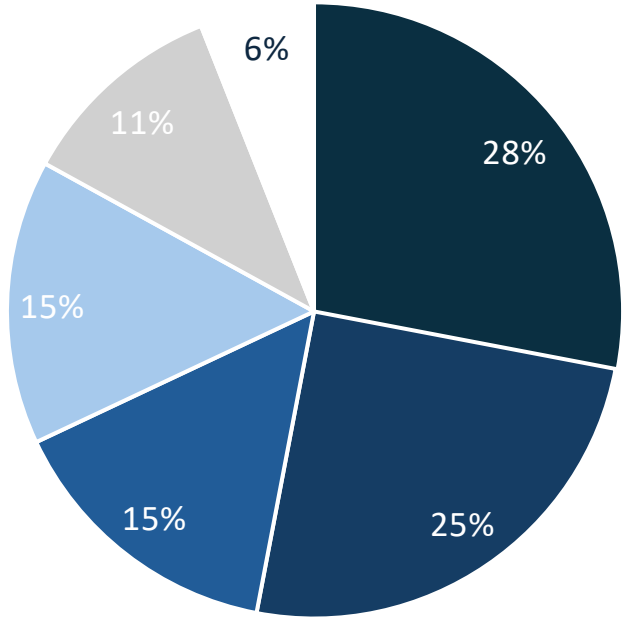
MONTECARLO SIMULATION	DCF ASSUMPTIONS	DISTRIBUTION	Variance / Limits	Economic Logic / Description
Risk-Free Rate (Rf)	0,04	Normal	**σ**=0,8% Range: [2,0%,7,0%]	It drives WACC and Nominal Growth. We assume rates normalize around 4% but test stress cases (high inflation vs. stagnation)
WACC	0,0765	Lognormal	**σ**=0,5%	Modeled as Log normal to strictly prevent negative discount rates
Beta (**β**)	0,78	Normal	**σ**=0,05	We allow it to float slightly to reflect market regime changes
Revenue CAGR (10y)	0,16	Normal	**σ**=2,5% Range: [5,0%,28,0%]	We simulate the "Through-Cycle" average growth. Correlated with margins (**ρ**=0.7).
Avg EBITDA Margin	0,43	Normal	**σ**=2,0% Range: [35,0%,50,0%]	Assumes they maintain high margins on average. Linked to growth: High Growth → High Margin
Operational Ratios (Capex, D&A, WC)	Fixed % of Rev	Deterministic	Capex: 10% D&A: 8% WC: 3%	We hold these constant to isolate the impact of the primary drivers (Growth & Margin) on the valuation

Capital Intensity



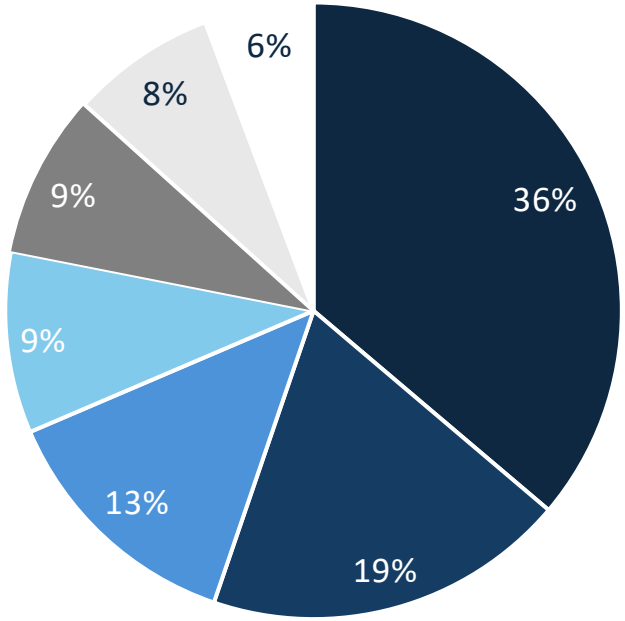
Raw Materials 2026 Demand and Supply Drivers

Projected Industrial Metals Demand by Sector (2026)



Construction & Infrastructure
Clean Energy & EVs
Data Centers & Digital Infrastructure
Traditional Machinery & Equipment
Packaging & Consumer Goods
Transportation

Projected Industrial Metals Supply by Region (2026)



China
Latin America
North America
Rest of Asia
Europe
Oceania
Africa

Most Volatile Raw Materials 2026 Outlook

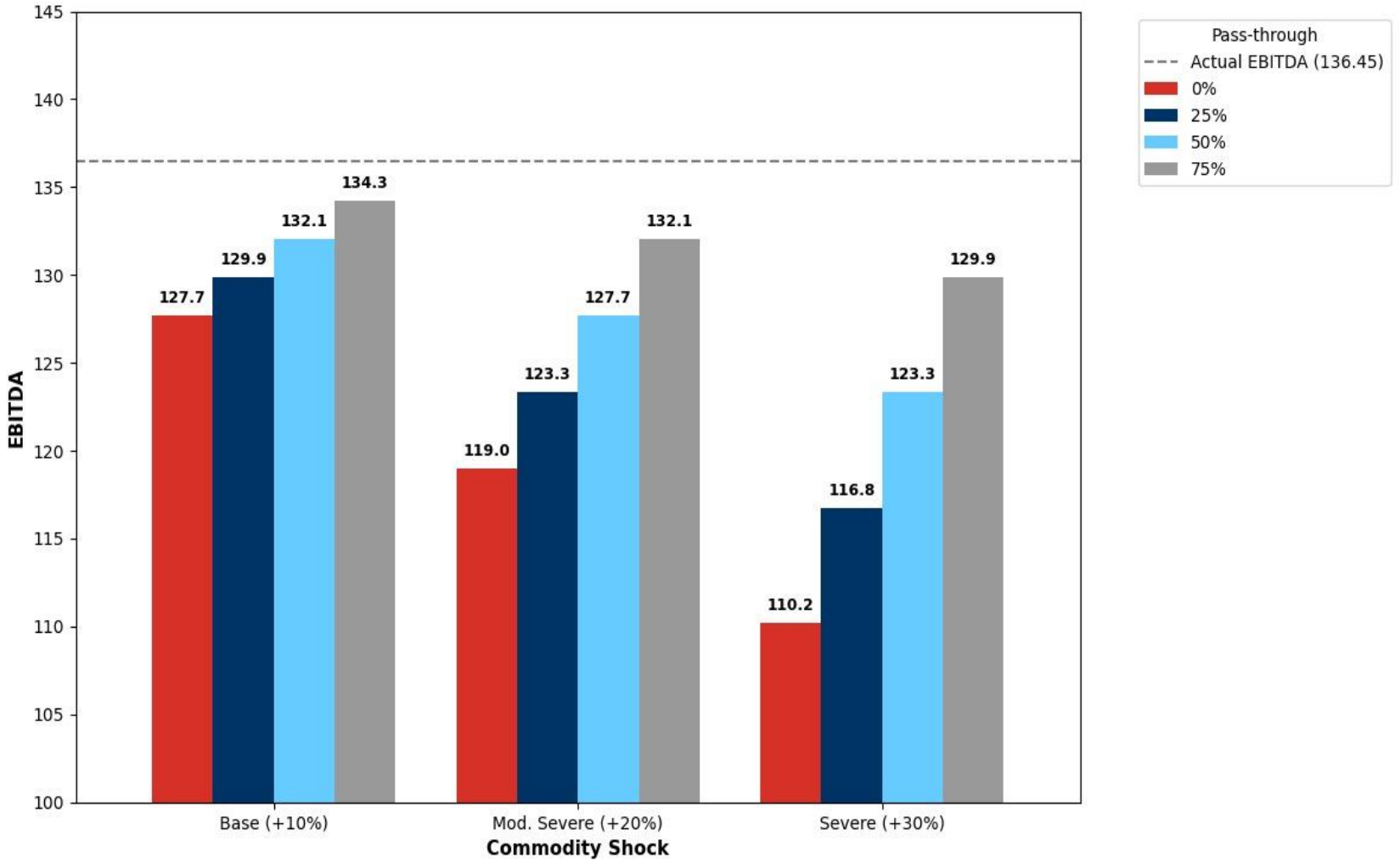
Raw Material	Role in Probe Cards structure	Major Supply Regions	Major Demand Drivers	Major Price Risks	2026 Outlook
Nickel	• Probe needles • MEMS structures • High-tech applications	Indonesia, New Caledonia, Philippines	• Steel alloys • Electric Vehicles • Batteries • Aerospace & Defense • High-tech applications	• Indonesian export bans • Regulatory changes • Battery demand surges • USD appreciation • LME squeezes	Slightly Bearish • Oversupply from Indonesia • Expected global surplus • Futures in contango
Aluminum	• Heat sinks • Structural components	China, India, Russia, UAE, Canada, Australia	• EVs & Batteries • Aerospace • Construction • Renewables	• China ETS restrictions • Copper price spillover • Mozal shutdown risk	Slightly Bullish • Expected slight global deficit • Mozal closure bringing +400kt deficit • Seen as Copper substitute
Copper	• Electrical pathways • Connectors	Chile, DRC, Peru, China, Indonesia, USA	• Data Centers and AI • Electricity & EVs • Low-carbon power generation • Construction • Transportation	• Supply-demand imbalance • Mining disruptions • Environmental regulations	**Bullish** • Structural deficit • Strong AI/EV demand • Backwardated futures
Titanium	• High-performance elements	China, Mozambique, South Africa, Australia	• Aerospace & Defense • Automotive & Medical • Other industrial metals alloys • Renewables	• Thin supply-demand balance • Energy cost exposure • Cyclical demand recovery	Bullish • Consistent market growth • Upward price pressure • Critical mineral status

Most Volatile Raw Materials Price Scenario Analysis

Following our estimated 75% cost pass-through rate over 12–18 months, Technoprobe can recover most input cost increases

A 20% commodity basket price shock would limit the EBITDA downside to just -3.2%, while a severe 30% increase would still cap the impact at -4.9%

Hence, raw material inflation represents a short-term timing risk, rather than a structural threat to medium-term profitability



Cost Pass-Through Estimate

Empirical benchmarks establish 70–80% as the realistic medium-term pass-through for differentiated industrial products over 12–18 months

60% of revenue comes from adjustable frame agreements, 25% from flexible spot orders and 15% from rigid legacy contracts, yielding a weighted calculation of 74.5%. The company's 60% market share in Vertical MEMS supports a premium over commoditized alternatives

Historically considering the 2022 palladium price spike, margins recovered to within 120 basis points of pre-shock levels within 15 months, implying 81–85% effective pass-through and confirming 75% as a conservative estimate consistent with competitors

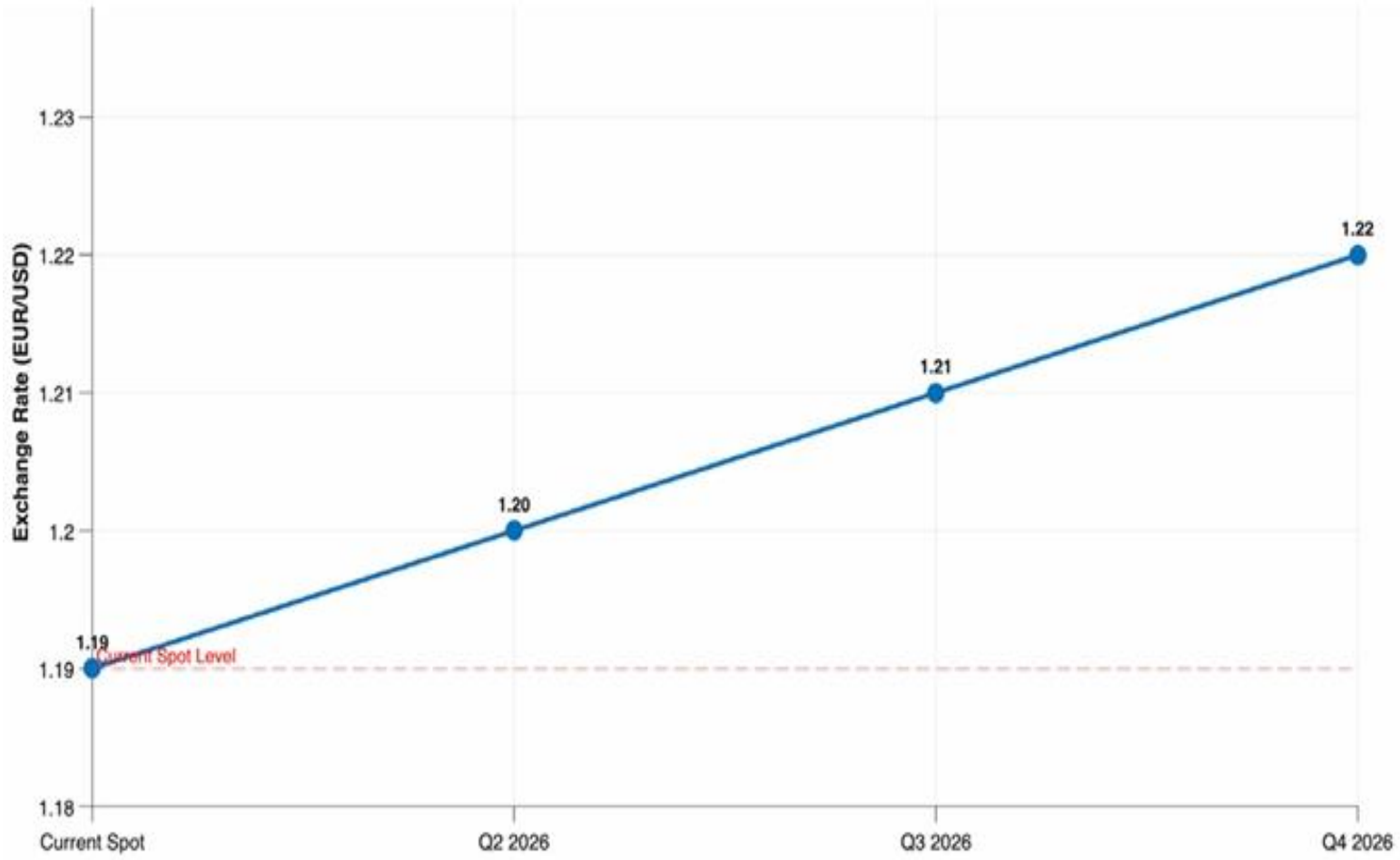
75% Cost Pass-Through Estimate

EUR/USD 2026 Forecast and Effect on FOREX Risk

Forecasts indicate a strengthening euro over 2026, with EUR/USD expected to rise from 1.19 to 1.22, driven by expected Fed rate cuts and a recovery in Eurozone growth

This would reinforce Technoprobe's negative exposure to EUR appreciation against USD

Without new hedging coverage or faster cost base rebalancing, reported margins will continue to be pressured, keeping Forex risk a key sensitivity



FOREX Exposure Sensitivity Analysis

EUR Depreciation	−2%	−5%	−10%
USD	9,030	22,576	45,152
KRW	530	1,324	2,648
TWD	1,660	4,152	8,304
JPY	(94)	(236)	(472)
CHF	(2)	(4)	(8)
GBP	(0)	(2)	(4)
TOTAL FY 2025E	11,124	27,810	55,620

EUR Appreciation	+2%	+5%	+10%
USD	(8,170)	(20,426)	(40,852)
KRW	(480)	(1,198)	(2,396)
TWD	(1,502)	(3,756)	(7,512)
JPY	86	214	428
CHF	2	4	8
GBP	0	2	4
TOTAL FY 2025E	(10,064)	(25,160)	(50,320)

FOREX Exposure Sensitivity Analysis

Technoprobe's FX sensitivity analysis reveals clear exposure, with the US dollar accounting for approximately 81% of total sensitivity due to the structural mismatch between USD-denominated revenues and EUR-based costs

The analysis tests six scenarios of EUR appreciation and depreciation by 2%, 5%, and 10%, with a 10% move in either direction translating to a pre-tax profit impact exceeding €50 million

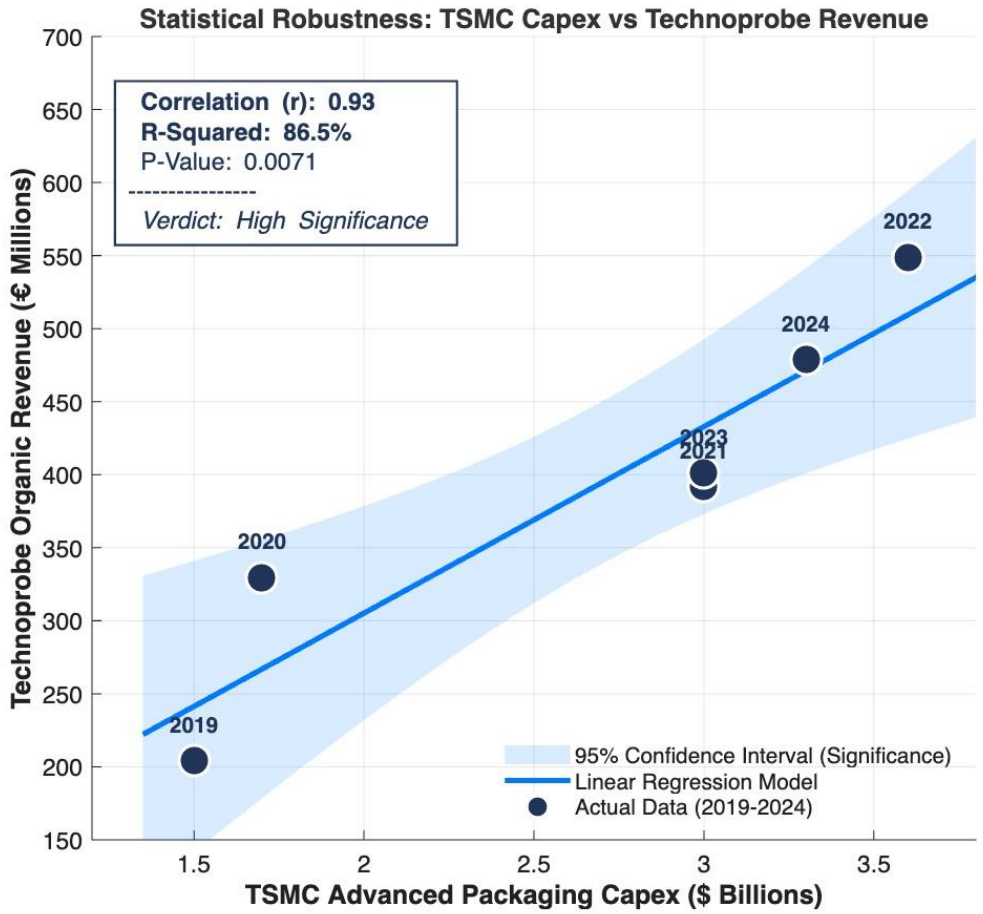
Beyond primary USD exposure, secondary material risks exist in New Taiwan Dollar and Korean Won positions, making foreign exchange movements, particularly sustained euro strength, a concerning non-operational risk 2026

"Synchronous Coupling" with TSMC

Our econometric analysis provides a significant R-squared coefficient of 86.5% (p-value < 0.01)

This proves that Technoprobe's revenue moves in lockstep with TSMC's capital deployment

The relationship is confirmed by TSMC awarding Technoprobe the "Excellence Performance Award" for its integration into advanced 3nm and 2nm models

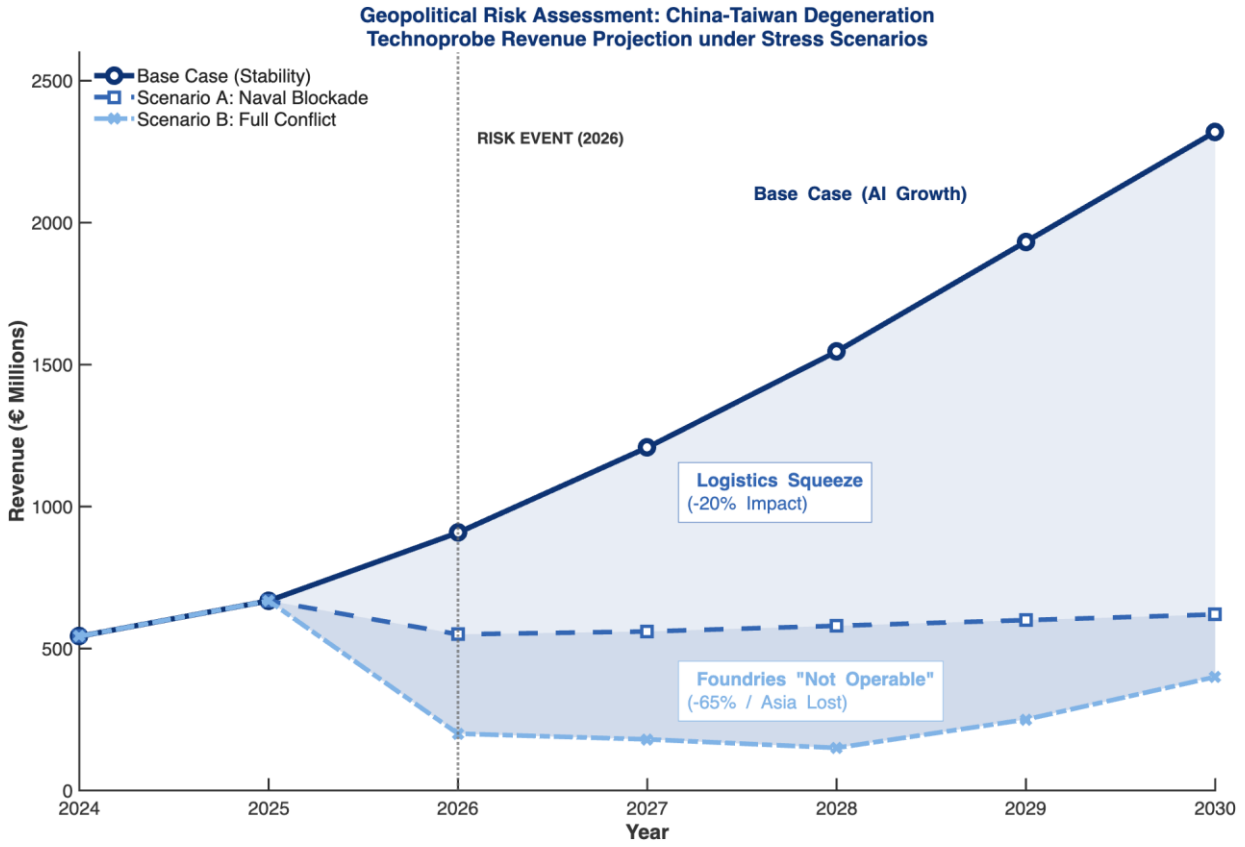


Geopolitical Stress Test

Stress in the Taiwan strait represents a structural "tail risk"

46% of Technoprobe revenue comes from Asia, heavily dependent on Taiwanese foundries like TSMC

A blockade scenario would cause a 20% revenue drop due to logistic freezes and inventory obsolescence, , while a full conflict would shrink sales by 65%



Geopolitical Stress Test

Mitigation Factors:
Global diversification as the key

TSMC's $65 billion investment in Arizona and new facility in Dresden allows Technoprobe to decentralize support infrastructure away from the Taiwan Strait

As TSMC expands beyond Taiwan, where 90% of wafer capacity was historically concentrated, Technoprobe can safeguard part of its Asian revenue exposure

Technoprobe's Italian headquarters and Fremont (California) facility provide localized support for these new global hubs, transforming regional tail risk into diversified opportunity

Board of Directors

Full Name	Role	Committees	Background & Contribution
Cristiano Alessandro Crippa	Chairman		Technical-commercial diploma; managerial experience in mechanical engineering. Contributed to company development.
Roberto Alessandro Crippa	Vice President		Chemical Engineering degree; inventor; Director since 1999; former MD of DA-TOR S.p.A.
Stefano Felici	CEO (Amministratore Delegato)		PhD in Electronic Engineering; semiconductor sector experience; former GM Technoprobe America.
Giulio Sirtori	Independent Non-Executive Director	Nomination & Remuneration Committee (Chair)	Senior management roles in trade organizations; expertise in governance.
Carlos Ortega Arias-Paz	Independent Non-Executive Director		MBA Harvard; 20+ years investment banking at Goldman Sachs; strategy & finance expertise.
Elisabetta Cugnasca	Independent Non-Executive Director	Control, Risk & Sustainability; Related-Parties Committee	Bocconi & INSEAD; investor relations and audit experience; governance & risk oversight.
Susanna Pedretti	Independent Non-Executive Director	Control, Risk & Sustainability (Chair); Related-Parties Committee	Qualified lawyer; compliance, risk management & sustainability leadership.
Gregory Stephen Smith	Non-Independent Non-Executive Director		Electronic Engineering; President & CEO of Teradyne Inc.; deep industry expertise.
Antonio Sanna	Independent Non-Executive Director	Related-Parties Committee (Chair)	Manager & General Counsel; oversight on legal, compliance & risk management.
Chin Kuang Yang	Independent Non-Executive Director		PhD in Chemical Engineering; semiconductor wafer fabrication; Founder of Yee Wei Inc.

ESG Score : Quantitative

Company	Social (30%)	Governance (30%)	Environmental (40%)	Final ESG Grade
Technoprobe S.p.A.	**3.5**	3.0	2.0	**2.75**
FormFactor Inc.	**1.5**	**1.5**	**1.0**	1.30
Micronics Japan (MJC)	**3.5**	3.0	3.0	3.15
Japan Electronic Materials (JEM)	**1.5**	2.0	1.5	1.65
Chroma ATE Inc.	3.0	**4.0**	**4.5**	3.90

ESG Score : Qualitative

Company	Social - (30%)	Governance - (30%)	Environmental - (40%)	Final ESG Grade
Technoprobe S.p.A.	Structured disclosure with Child Labor Policy and OHSMS. Comprehensive corporate welfare plan. Code of Business Conduct reflects RBA standards.	ESG oversight embedded in general governance. CEO and Chair roles separated. Global Whistleblowing Policy. Risk-aware management.	No formal transition plan. Scope 1-3 assessment performed Renewable energy usage low . No internal carbon pricing.	**2.75**
FormFactor Inc.	No standalone sustainability report post-2022. Basic policies only. Limited disclosure on career progression and gender metrics. Minimum social information disclosed.	No dedicated ESG strategy. Separation of Chair and CEO. Compliance overseen via internal controls.	No formal quantified climate targets publicly disclosed. Limited public metrics. Strategy of continuous improvement but weak transparency.	1.30
Micronics Japan (MJC)	"Hierarchy-based Training" for new grads and managers. Dispatches leaders to business schools. High investment in human capital (95 million yen total education cost). 100% return rate after childcare leave. Male childcare leave: 50% (exceeded 30% target). Female managers: 8.1%.	Compliance and Risk Management Committee reports to Board. CEO and Chairman roles NOT separated. Strict independence criteria. "MJC Helpline" for whistleblower anonymity. BCP for natural disasters.	Target: 20% reduction in GHG emissions by 2030. Recycles precious metals (gold) from wastewater. Renewable energy introduction started in 2024. Energy intensity reduced by 7.8% (5-year avg).	3.15

ESG Score: Qualitative

Company	Social (30%)	Governance (30%)	Environmental (40%)	Final ESG Grade
Japan Electronic Materials (JEM)	Basic philosophy regarding human rights and safety, but lacks quantitative granularity. "Initial Efforts" category. Lacks detailed diversity statistics. No published incident rates or detailed diversity statistics.	Board average tenure only 2.6 years. No dedicated ESG committee level supervision. Maintains fundamental internal controls and listed on Tokyo Stock Exchange Prime Market.	"Environmental Philosophy" focused on quality, but no disclosed 2030 GHG targets. Lacks quantitative data to verify transition strategy.	1.65
Chroma ATE Inc.	"Drive for Zero" program (all injuries preventable). Zero incidents of unethical conduct. Principles of equal pay for equal work. Merit-based promotion systems. 35% reduction in OSHA recordables. Women in STEM positions: 5.74%.	Separation of CEO and Chair (founder stepping down in 2026). Board training 7.7 hrs/director. Perfect score of 5 in corporate governance from FTSE Russell. 44% independent directors.	Net-zero office target (2030) and all facilities (2050). "Green Revenue" accounted for 48.3% of total. Carbon intensity: 0.39 tons/million NTD. Green power wheeling agreement signed (RE30 goal).	3.90

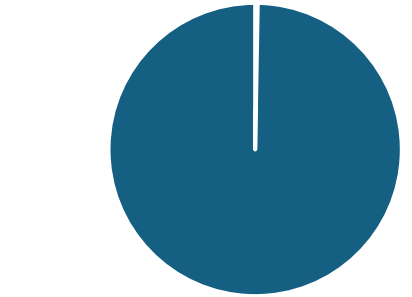
Pollution

Total amount of substances of concern that are used during production or that are procured

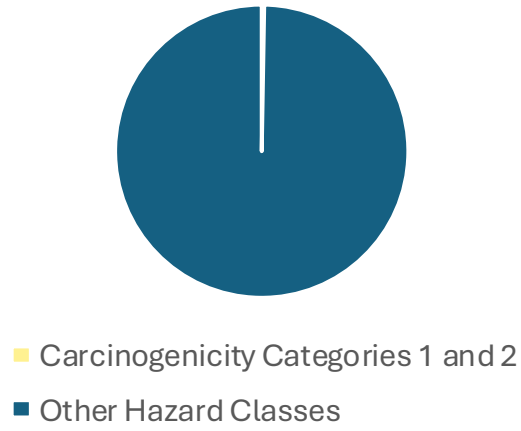
Substances of Concern (SC)	**210.6**
Substances of Very High Concern (SVHC)	**11.1**

Substances of Very High Concern (SVHC) are substances that could have serious and irreversible effects on human health and the environment.

SC



SVHC



SDG Commitment

ESG AREA	Relevant SDG(s)	Link to SDG
Environment and Climate		Emission & Climate
Workforce & Wellbeing	 	Safety & Work Practices
Governance & Ethics		Ethics & Transparency
Community & Local Impact		Community Programs

Note: SDG's linked based on our analysis of Technoprobe's ESG report. No official SDG alligment declared by the company

Compliance: On The Right Path

LEGEND

- *Eligible Aligned*
- *Not Eligible*
- Eligible Not Aligned