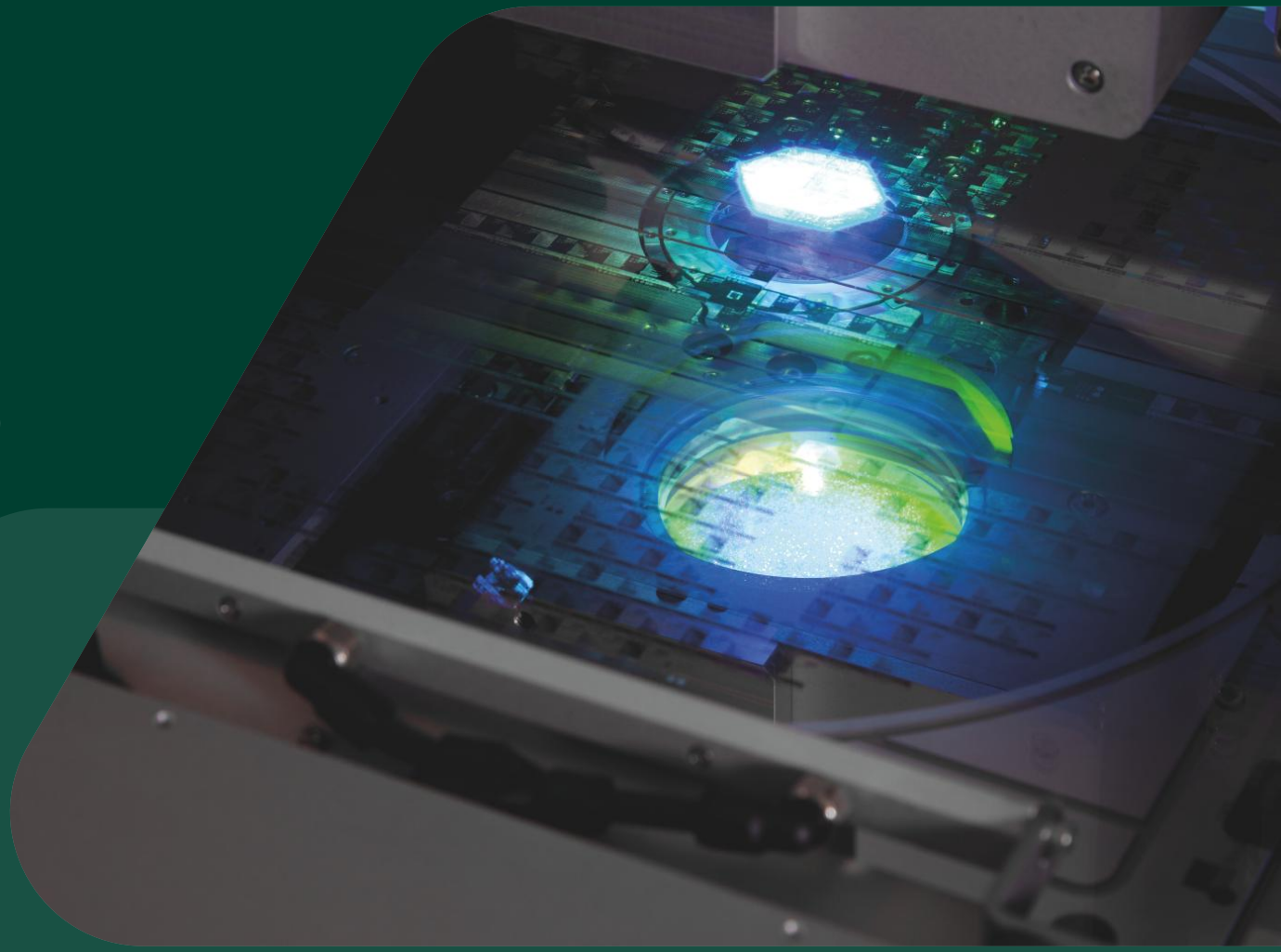
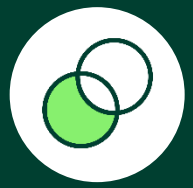
Business Unit Advanced Backend Solutions

(Dr. Robert Wanninger)

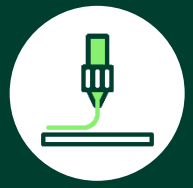


SUSS serves three essential process blocks in Advanced Backend

We tailor our product solutions to support our customer's product and manufacturing needs.



Bonding Systems



Coating Systems

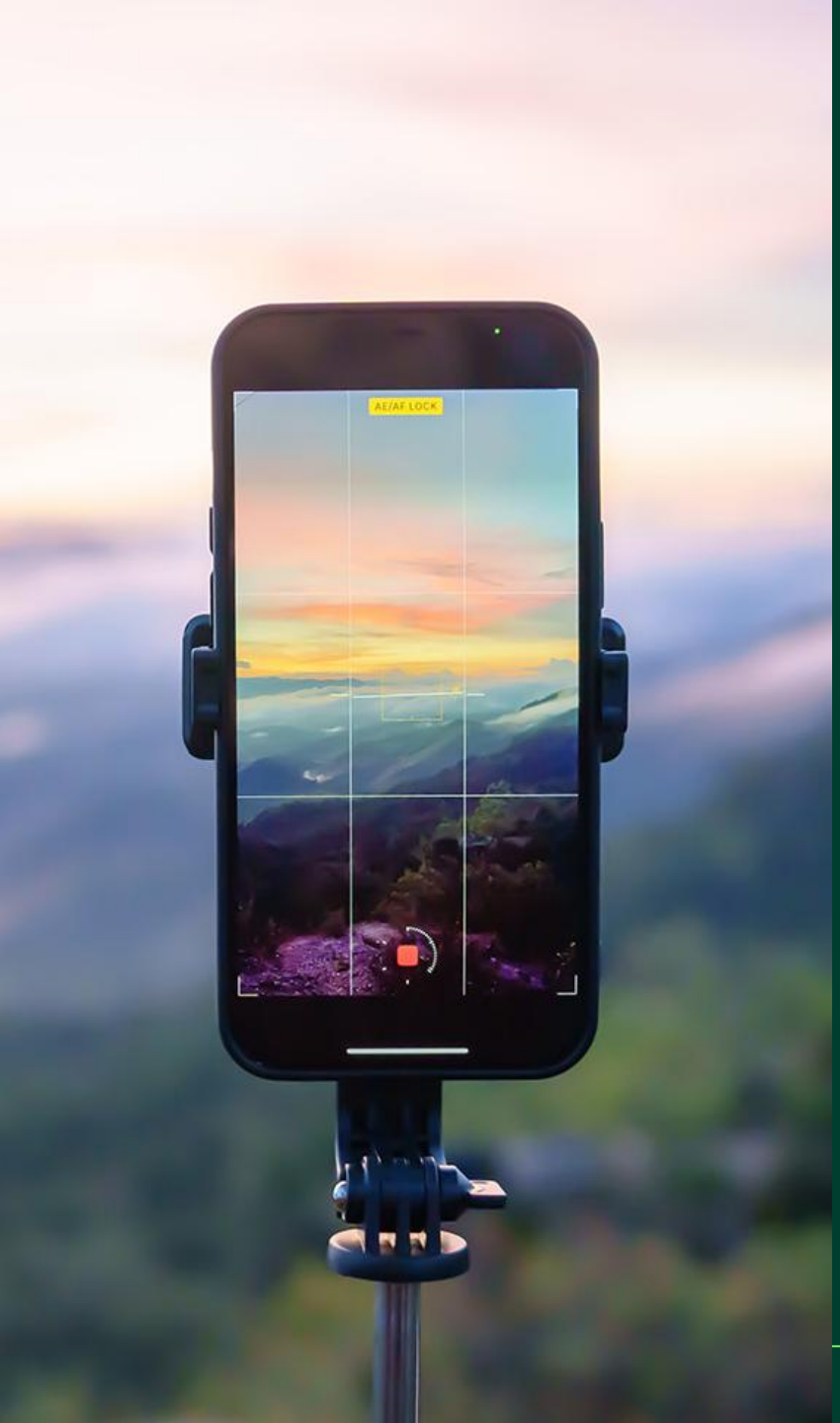
Imaging Systems

Solution offering from "one" SUSS

SUSS

Our target markets

- Heterogeneous Logic/Memory devices
- MEMS & Sensors
- Power/Discrete devices
- Opto Electronics & Wafer Level Optics
- High Frequency devices



Our strategic focus – driving sustainable and profitable growth

SUSS

Focus on high-volume markets: Focus on the right applications and provide right equipment with the right specifications

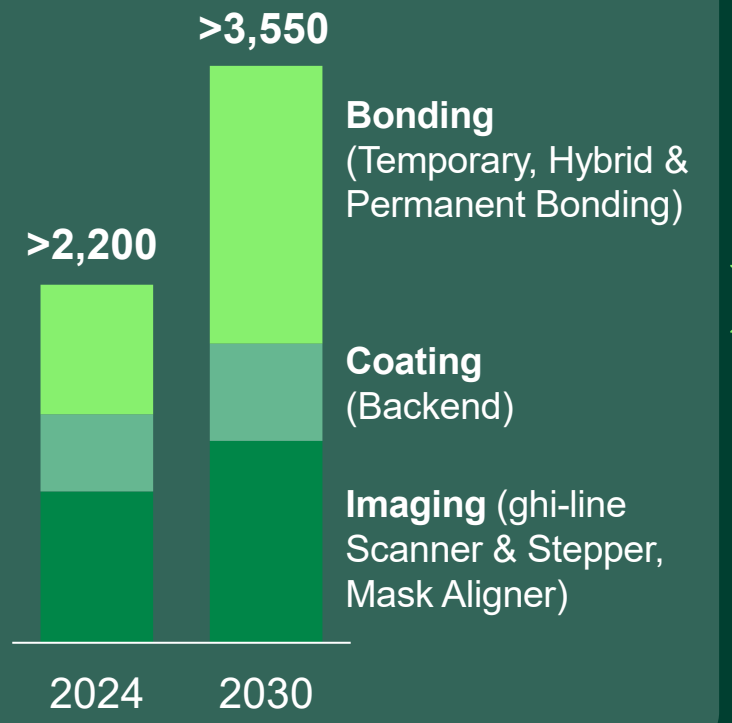
Focus on key customers: Focus on industry leaders, identify customer success factors & turn these into differentiating solutions

Modular equipment design: Using modular, versatile components to cut development & production time and sourcing costs

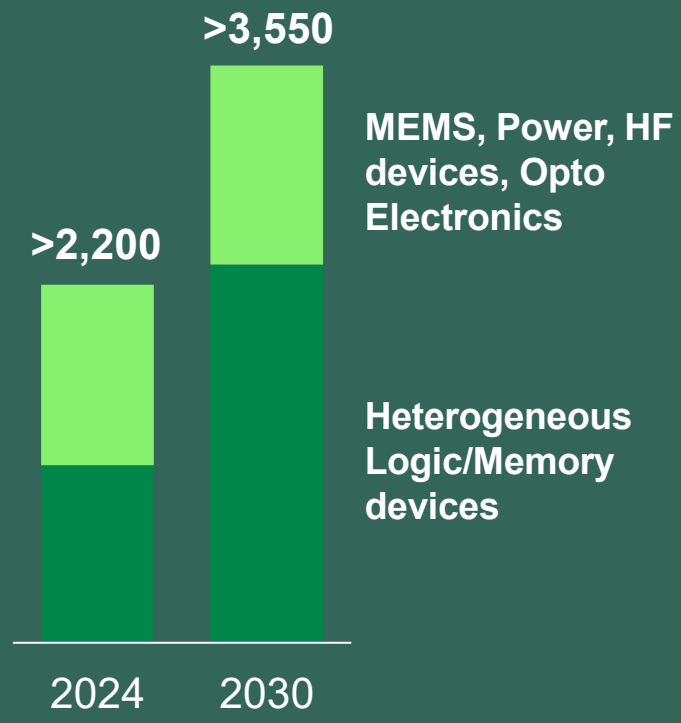
Streamlining product portfolio: Standardize equipment's and phase out low-volume ones to reduce complexity & boost margins

Strong market growth across all Product Lines, driven by highly performant Logic/Memory devices – put differently AI

Serviceable Available Market by SUSS equipment [€M]



Serviceable Available Market by device [€M]



Strong market tailwinds across all Product Lines expected driven by **Heterogeneous Logic / Memory devices**:

- Strong demand for Temporary Bonding (with some volatility)
- Significant demand growth for Hybrid Bonding (esp. D2W HB)
- Increasing demand for UV-Scanner due to ever increasing reticle sizes
- Demand for Panel solutions (Panel Coater/Developer & UV-Scanner)

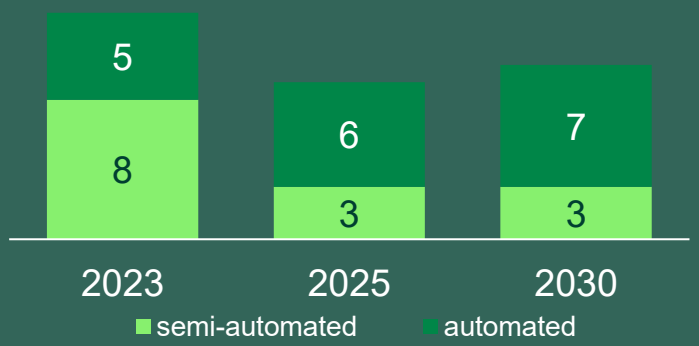
Source: SUSS Research, primarily based on Yole
Note: USD/EUR exchange rate 2024 = 1.0822

Ongoing portfolio optimization since 2023 to reduce complexity

In Advanced Backend Solutions, we are focusing on high-volume markets and specifically reducing our range of semi-automated equipment

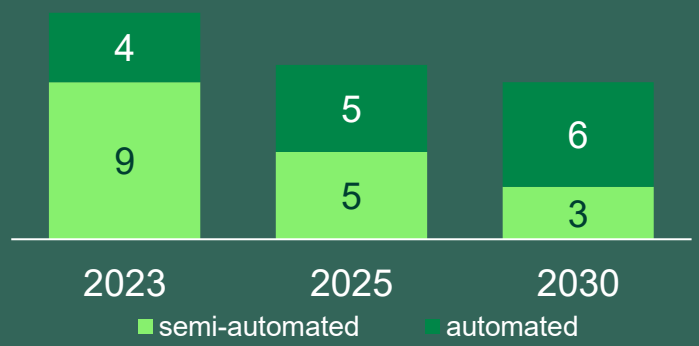
Bonding Systems

Number of products



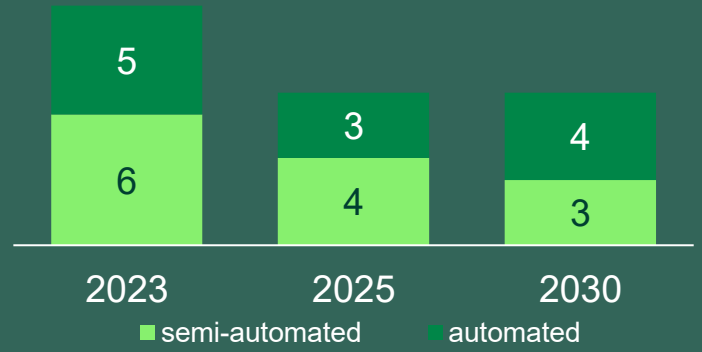
Coating Systems

Number of products



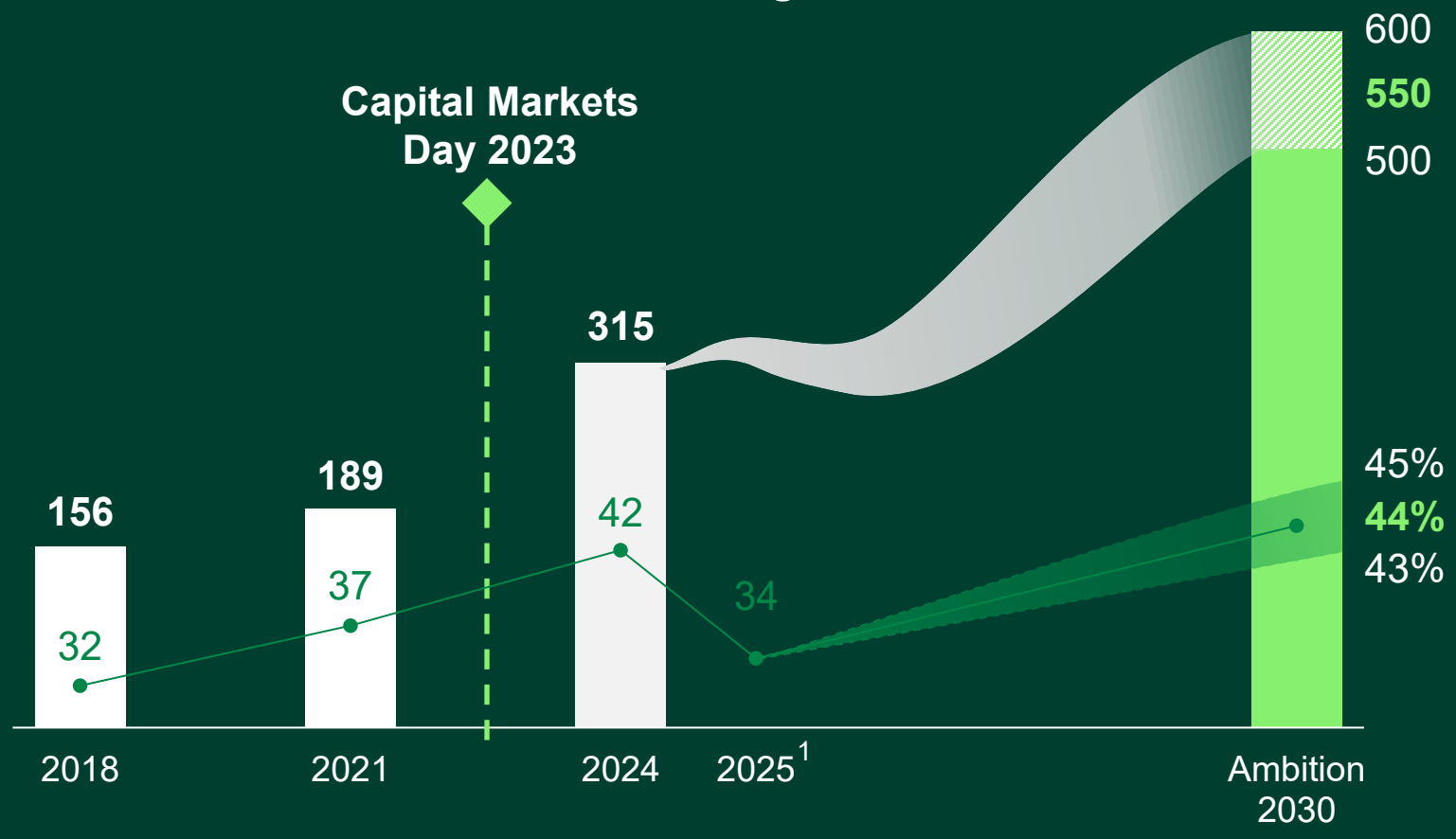
Imaging Systems

Number of products



Advanced Backend Solutions delivered on SUSS' last long-term plan & is committed to further growth

Revenues in €m & Gross Profit Margin in %



[1] 9M 2025 gross profit margin: 34.3%

2018 – 2024
Doubling revenues by focusing on key customers and securing a strong position in the AI ecosystem

2026
Temporary revenue softness driven by short-term dip in Temporary Bonding, as customers prepare for next generation products

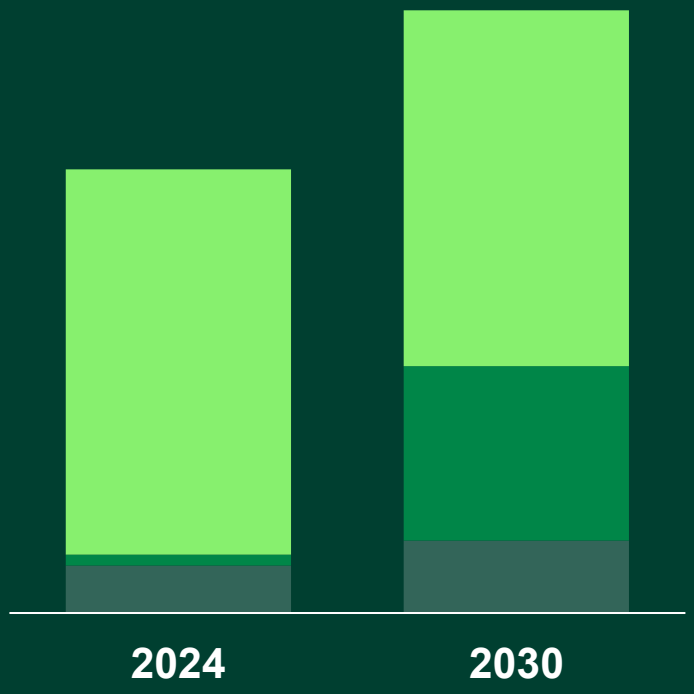
2027ff
With new initiatives gaining (further) traction (UV-Scanner, Hybrid Bonding & Inkjet) and TBDB recovering, revenues & GP-margins are expected to exceed 2025 levels significantly

Let’s deep-dive

into our three Product Lines

Bonding | Temporary Bonding is – and will remain – the key revenue driver, with Hybrid Bonding gaining momentum

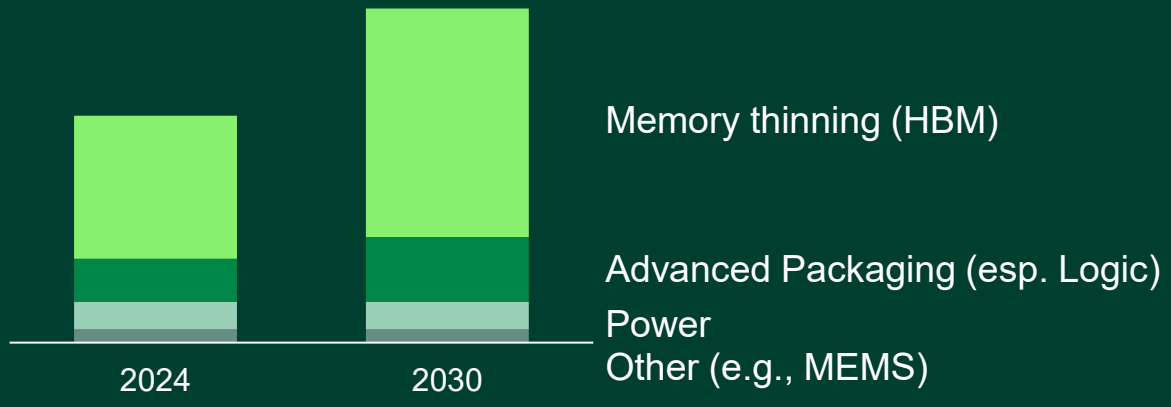
SUSS revenues by equipment type



Equipment	Key Takeaways
Temp. Bonding Debonding Deep-Dive next slides	**Key applications:** Wafer thinning (e.g. HBM) **Market leader** supplying 2 of 3 IDMs (HBM) **Market expected to continue its growth**, fueled by AI
Hybrid Bonding Deep-Dive next slides	**Key applications:** Advanced Logic (e.g. 3D-SOIC), HBM **Follower position:** Entry into Advanced Logic first, followed by HBM market **Market with strong growth ahead,** W2W HB established and D2W HB close to mass production
Permanent Bonding	**Key applications:** MEMS bonding, engineered substrates **Follower position:** SUSS #2 behind undisputed #1 **Market expected to grow moderately**

Temporary Bonding & Debonding | SUSS market leader in a growing market fueled by demand for AI and HBM

Market Outlook 2024 – 2030

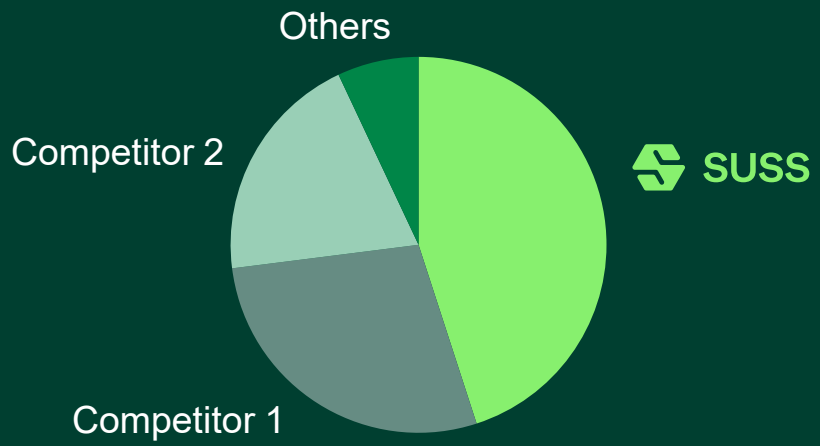


Memory stacking & **Advanced Packaging** call for:

- Ongoing improvements in Cost of Ownership, and thus **higher throughput**
- **Handling of ultra-thin Wafer** (upcoming HBM generations)

Source: SUSS Research primarily based on Yole

Current SUSS market position



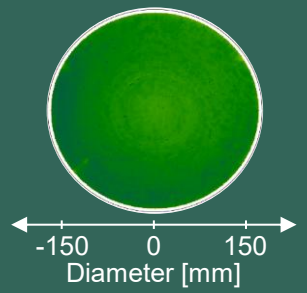
- **SUSS market leader**, trusted by two of the top three IDMs and the #1 foundry
- Going forward **#2 suppliers will be introduced** as second source – a trend we are already beginning to observe

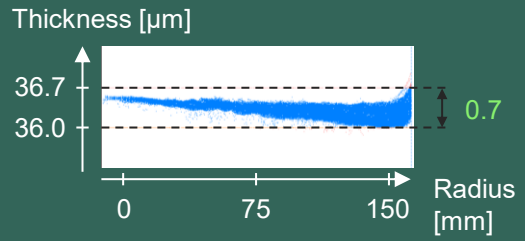
Temporary Bonding & Debonding | Battle-proven, flexible tool with high yield – ready for next device generations

SUSS

1 High yield (>99%) through low TTV[1] & high cleanliness

TTV below 1µm





Coating of a crosslinking adhesive

2 Robust & HVM proven mechanical & laser de-bonding technologies

2012
First HBM2 tool delivered

>60%
tool base used for HBM

3 Ultra-thin Wafer handling and processing capabilities

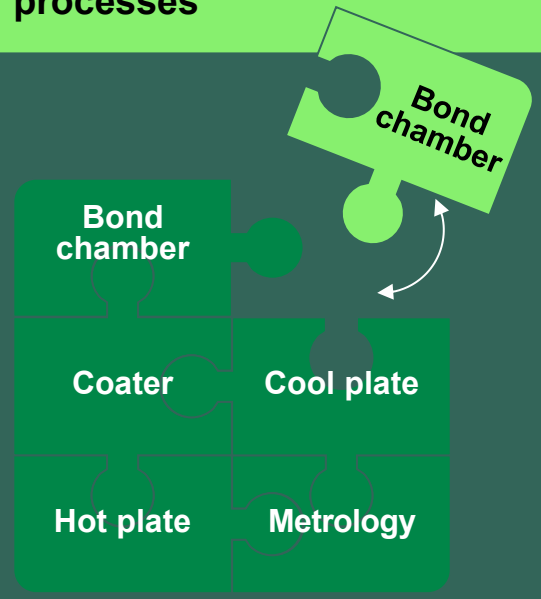
20µm Wafer handling

Upcoming:
- 10µm Wafer handling
- 2D material handling

EU Graphene Project

SUSS imec VTT AIXTRON HORIBA Others

4 Seamless adaptation across various HVM processes

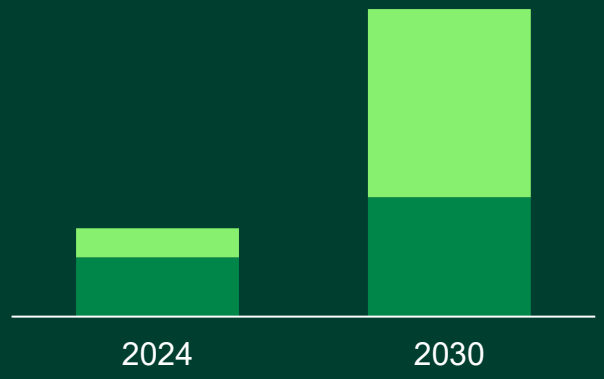


Flexible, upgradeable tool configuration – full TBDB module range in our portfolio

[1] Total Thickness Variation | Source: SUSS Application

Hybrid Bonding | Fast-growing market – With our broad portfolio, we are ready to shape it

Market Outlook 2024 – 2030



D2W Hybrid Bonding
(esp. HBM & Advanced Logic)

W2W Hybrid Bonding
(growth esp. in Adv. Packaging of Memory & Logic)

Packaging of Memory (especially HBM) and Logic – both target markets call for:

- **High throughput** particularly relevant for HBM
- **High alignment & post-bond accuracy** – especially critical for Logic packaging

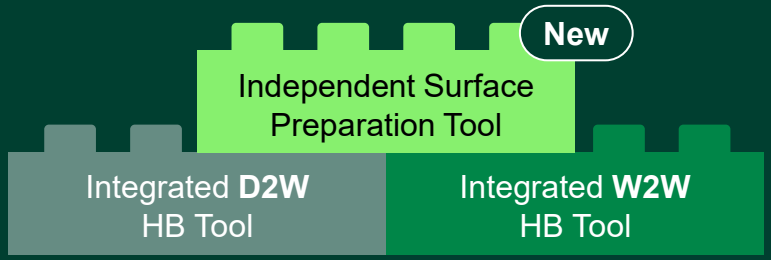
Source: SUSS Research primarily based on Yole

Current SUSS market assessment

Short-Term

Market favors **independent** Surface Preparation & Hybrid Bonding **tools**

Our Hybrid Bonding portfolio



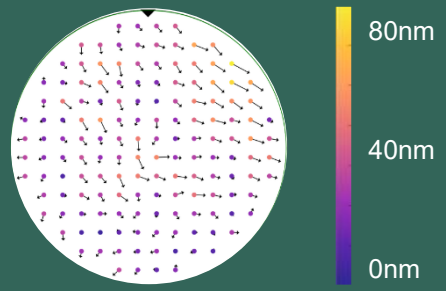
Long-Term

Market favors **integrated solutions** with Surface Preparation & Hybrid Bonding module

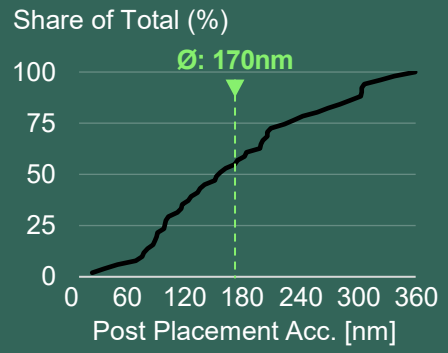
Hybrid Bonding | SUSS represents excellence in technical performance

1 Leading in accuracy – ideal for Advanced Logic

W2W HB:
Ø post bond accuracy <50nm

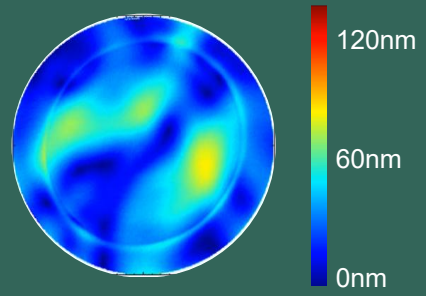


D2W HB:
Ø post placement acc. 170nm

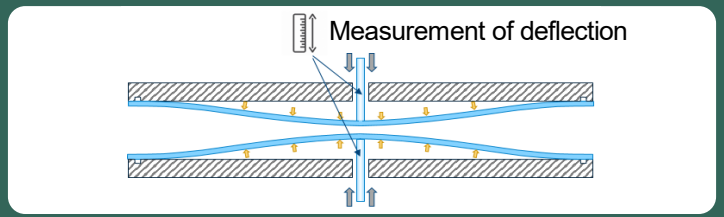


2 W2W HB already ready for future Logic – due to low & repeatable post-bond distortion

Low distortion:
Ø ~40nm post bonding (pre-lithography correction)



Repetitive distortion:
Enabled by Hybrid Bond Pin – SUSS IP



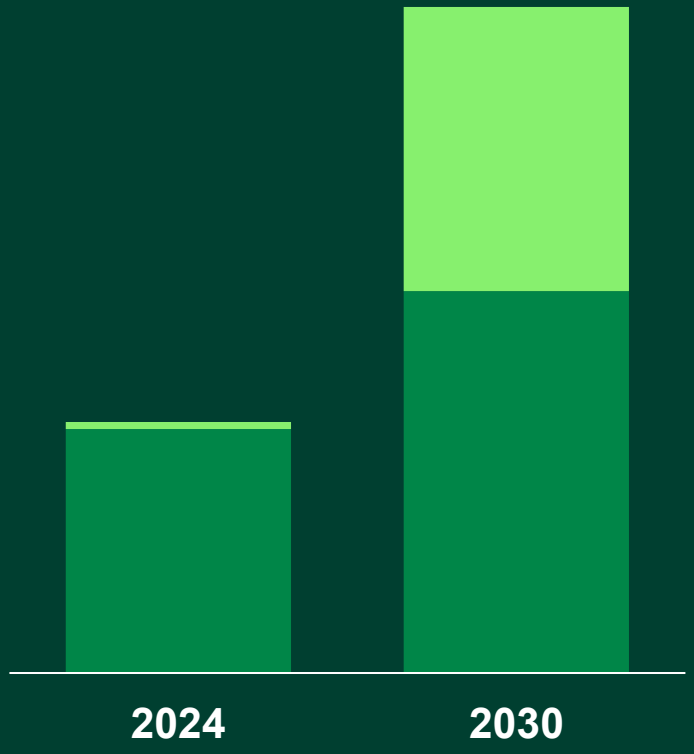
3 Platform flexibility according to customer needs

- **D2W Bonding**
- **W2W Bonding**
- **Combined D2W/W2W**
- **Surface Preparation Cluster**
- **Metrology Cluster**

Source: SUSS Application, IMEC

Coating | Inkjet drives growth as a disruptive technology, Spin Coating remains on a positive trajectory

SUSS revenues by equipment type

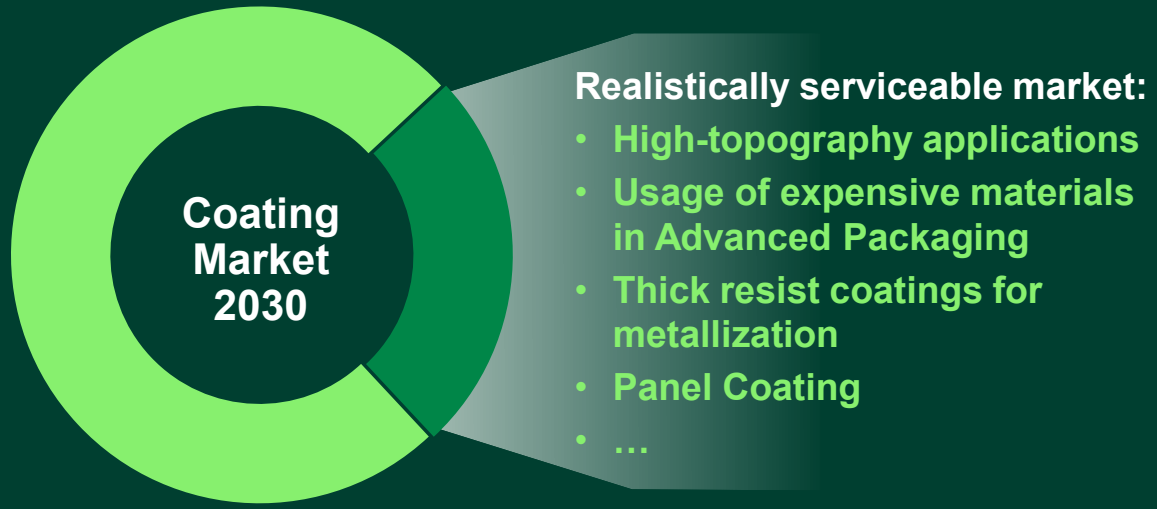


Equipment	Key Takeaways
Inkjet Deep-Dive next slides	**Key applications:** Coating of complex structures, cost-efficient coating of expensive resists & Additive Manufacturing **Early-stage market** with SUSS at the forefront shaping it **Huge market potential** – making existing processes cheaper and enabling new ones
Spin Coating	**Key applications:** Advanced Packaging (300mm); MEMS & Power (200mm) **Follower position:** 300mm segment: #3, 200mm segment: shared #1 **300mm Market segment expected to grow** driven by Advanced Packaging

Inkjet | More than flexible & cost-efficient Coating – also a key enabler for Additive Manufacturing

Inkjet as alternative to Spin Coating

Inkjet coating is particularly an **alternative** to conventional **spin or spray coating** in cases where these methods are **costly, very slow** or require **high operational effort**



Inkjet as enabler for Additive Manufacturing

In addition to traditional coating, Inkjet addresses Additive Manufacturing with potential for **higher packaging density, performance, thermal management, and cost efficiency**

- **Ultra-Precision Deposition:** Alternative for RDL fabrication (FOWLP & 2.5D)
- **Electrohydrodynamic:** Printing of high-resolution (<5µm) structures with high throughput
- **Metallization of SiPs[1]:** Deposition of conductive inks on 3D substrates
- …

∑ >€180M (serviceable market)

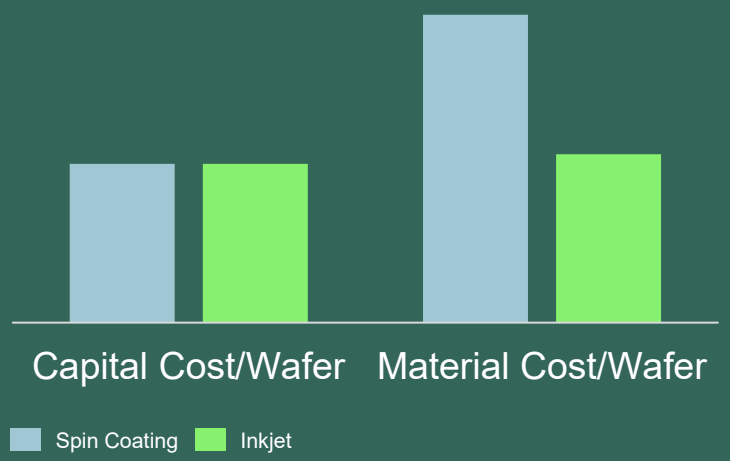
[1] System in Package

Inkjet | >50% material savings and top Coating quality – even on complex surfaces and independent of substrate geometry

SUSS

1

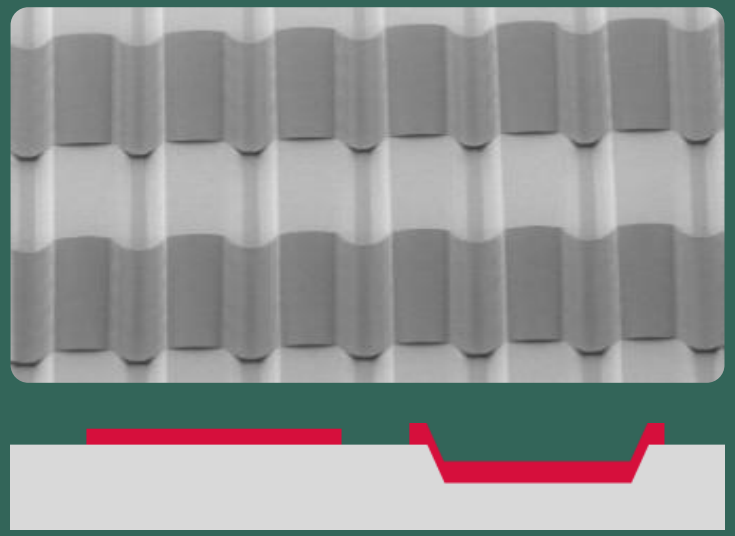
Attractive Cost of Ownership through >50% material savings compared to traditional Spin Coating



Cost analysis: Photoresist for RDL

2

Enabler for homogeneous coating of 3-dimensional surfaces



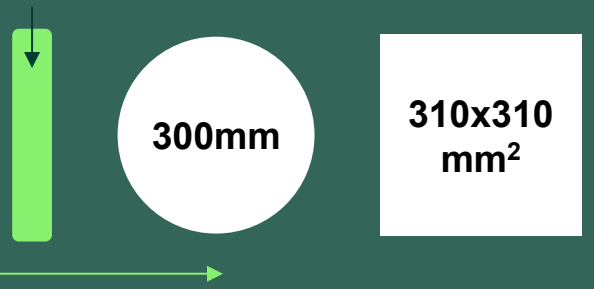
Homogeneous coating layer on a 3D-structured surface (after exposure)

3

Similar processes for Wafer and Panel – ensuring consistently high Coating quality

One print head bar for Wafers & Panel processing – no adaptations needed

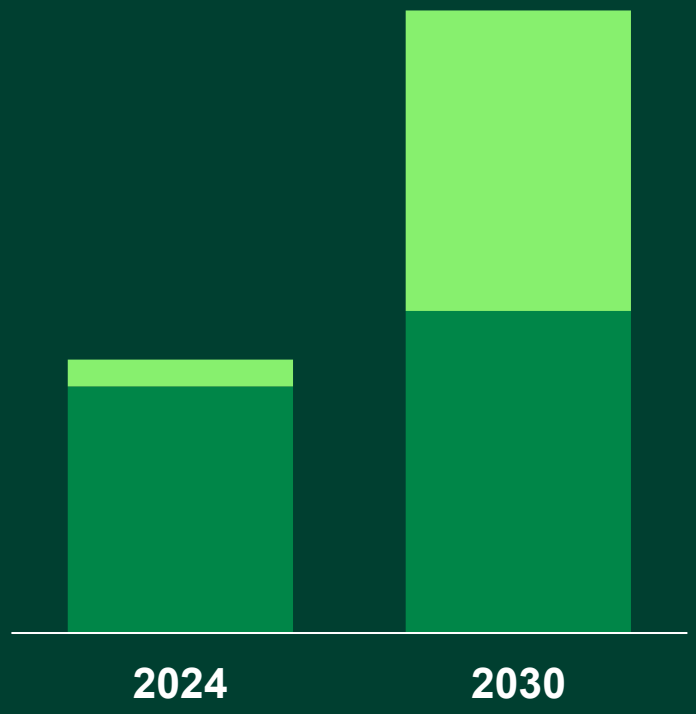
Print head bar
(containing multiple print heads)



Direction of print head bar movement

Imaging | Dual growth path: UV-Scanner momentum in Advanced Packaging & market share expansion with NextGen Mask Aligner

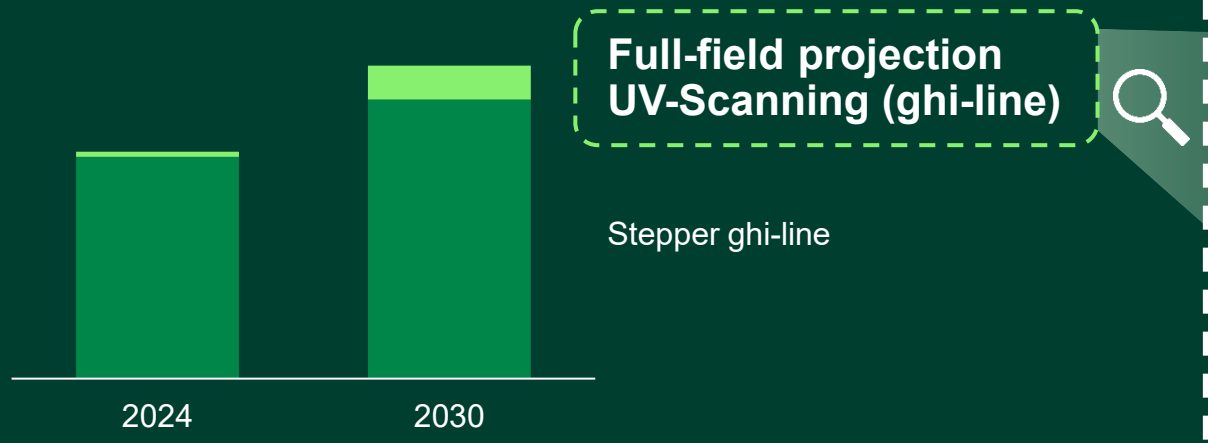
SUSS revenues by equipment type



Equipment	Key Takeaways
UV-Scanner Deep-Dive next slides	**Key applications:** Advanced Packaging of Heterogeneous devices and Power **Market leader & sole supplier** for full-field projection UV-Scanning (ghi-line) Going forward, we expect the **trend toward UV-Scanning to continue**, particularly in Advanced Packaging of large modules
Mask Aligner	**Key applications:** MEMS, Power & High Frequency devices **Market leader** with ~60% market share through best in class technology With **NextGen Mask Aligner** (launch in 2027) we will **expand our addressable market**

UV-Scanner | SUSS well positioned to capture accelerating demand for UV-Scanning through exclusive market leadership

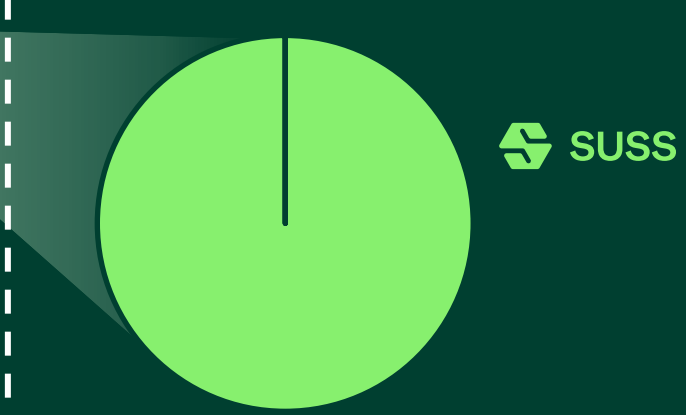
Market Outlook 2024 – 2030



- **Advanced Packaging** & **Power device** manufacturing drive ghi-market growth
- **Both showing strong interest and early adoption** of full-field UV-Scanning, particularly for larger-scale backend structures
- **High yield** and **high throughput** are key requirements

Source: SUSS Research primarily based on Yole

Current SUSS market position



- **SUSS** is the **sole supplier of full-field projection UV-Scanning** Solutions
- We are already established as the **exclusive supplier for certain process layers on the leading foundry's** most important Advanced Packaging platforms

UV-Scanner | Best-in-Class Cost of Ownership for Exposure use cases in Advanced Packaging

1 Higher yields through stitchless & contactless exposure

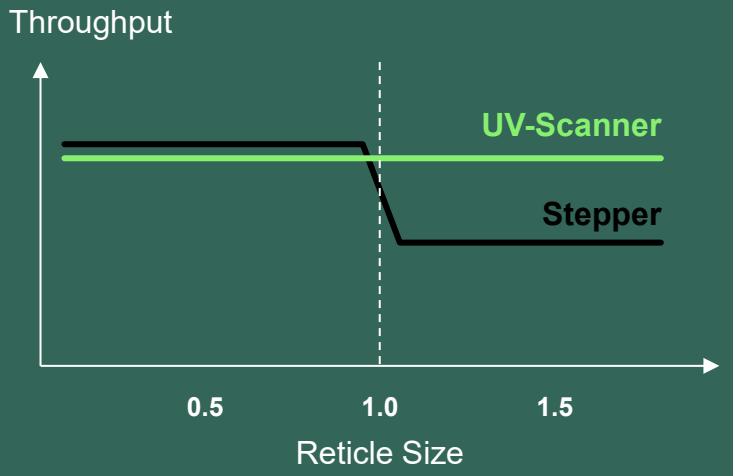
> For large products, stitchless exposure increases yield by >1–5%, making a difference given their cost.

> Yield is significantly reduced by stitching when die size exceeds the reticle field.

> Contactless full-field projection helps avoid mask contamination and thus minimizes defects.

2 Best-in-Class throughput for large reticle sizes

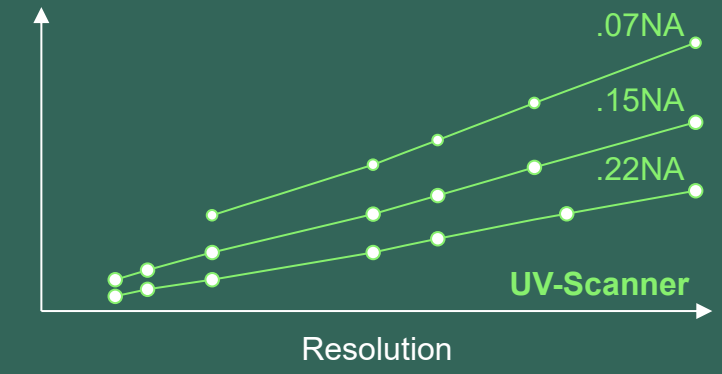
Reticle Size vs. Throughput



Illustrative – drawn from practical experience

3 Versatile tool for multiple applications enabled by adjustable optic

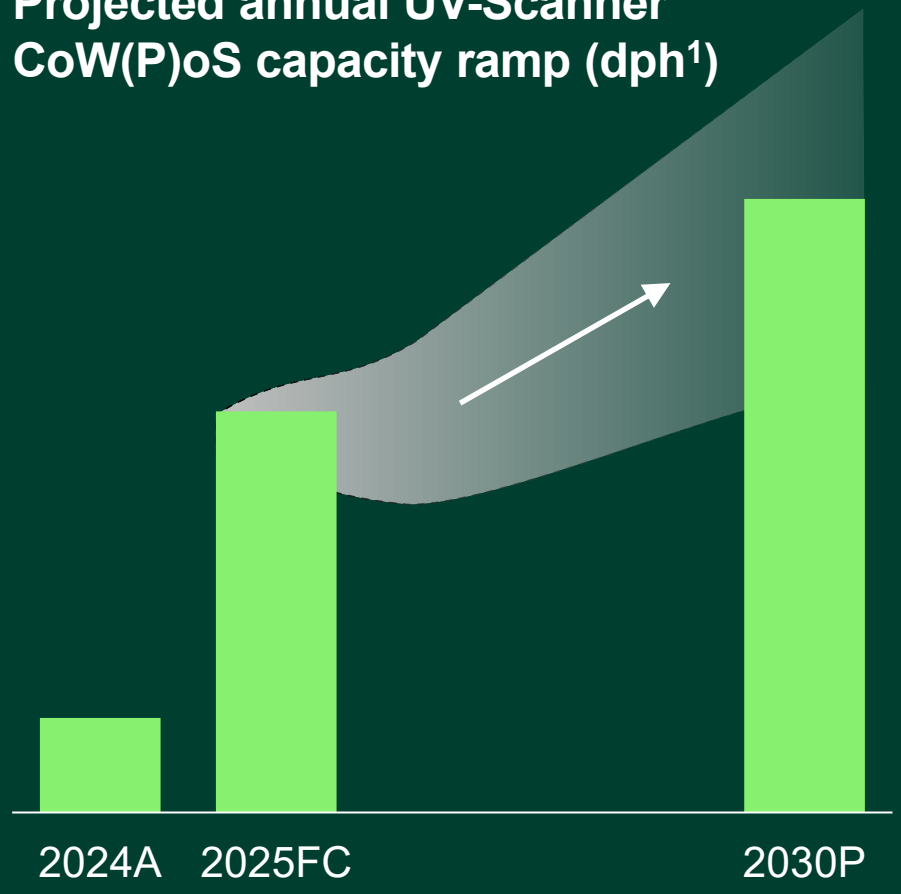
Depth-of-Focus vs. Resolution



Application-specific tuning of focus depth and resolution

In close collaboration with our ecosystem, NextGen UV-Scanner for CoWoS/CoPoS is developed as right fit product to set standards

Projected annual UV-Scanner CoW(P)oS capacity ramp (dph[1])



[1] Dies per hour

Current Partner of Choice
We were chosen as key supplier for leading CoWoS and CoPoS production

Joint roadmap alignment
We collaborate closely, share insights and future requirements, and align our roadmaps to ensure the best product results

Large installed base drives insights
With our extensive installed base, we generate valuable data that helps us continuously improve our tool

Focused development and faster time-to-market
Close cooperation and rich data accelerate UV-Scanner development – e.g. 310×310 Panel product completed in ~1 year

Advanced Packaging partly moving to Panel – SUSS Lithography Panel solutions launching soon

Before 2024

PLP has been used for years, but mostly in **simple, customized processes** with varying large Panel sizes

Out of scope

After 2024

Now, **heterogeneous integration is moving partly to Panels**, demanding far higher complexity, precision, and cleanliness

SUSS focus

Planned future 310x310mm² Panel Portfolio

310x310mm² UV-Scanner

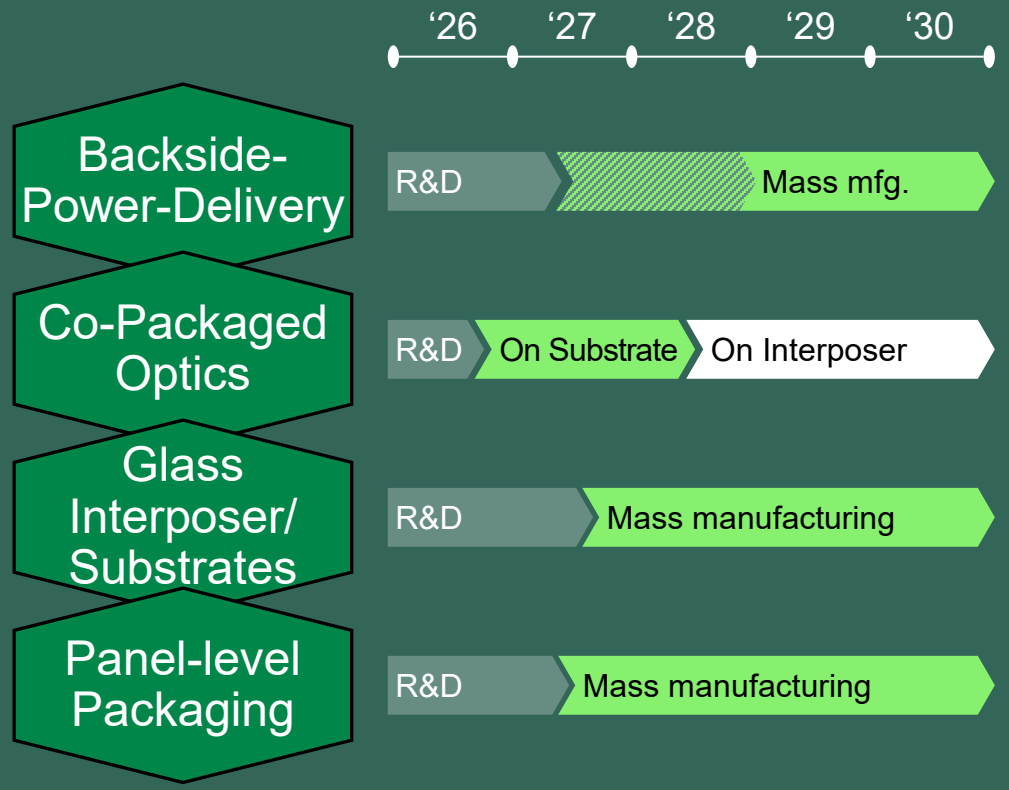
310x310mm² Dry-Film Developer

310x310mm² Inkjet-Coater

- Volume ramp-up at customers starting in 2028
- By 2030, Panel solutions are expected to account for **>10% of our revenues**

We consistently analyze future Advanced Packaging trends and turn them into real solutions by working hand in hand with our ecosystem

Selection of key Adv. Packaging Trends



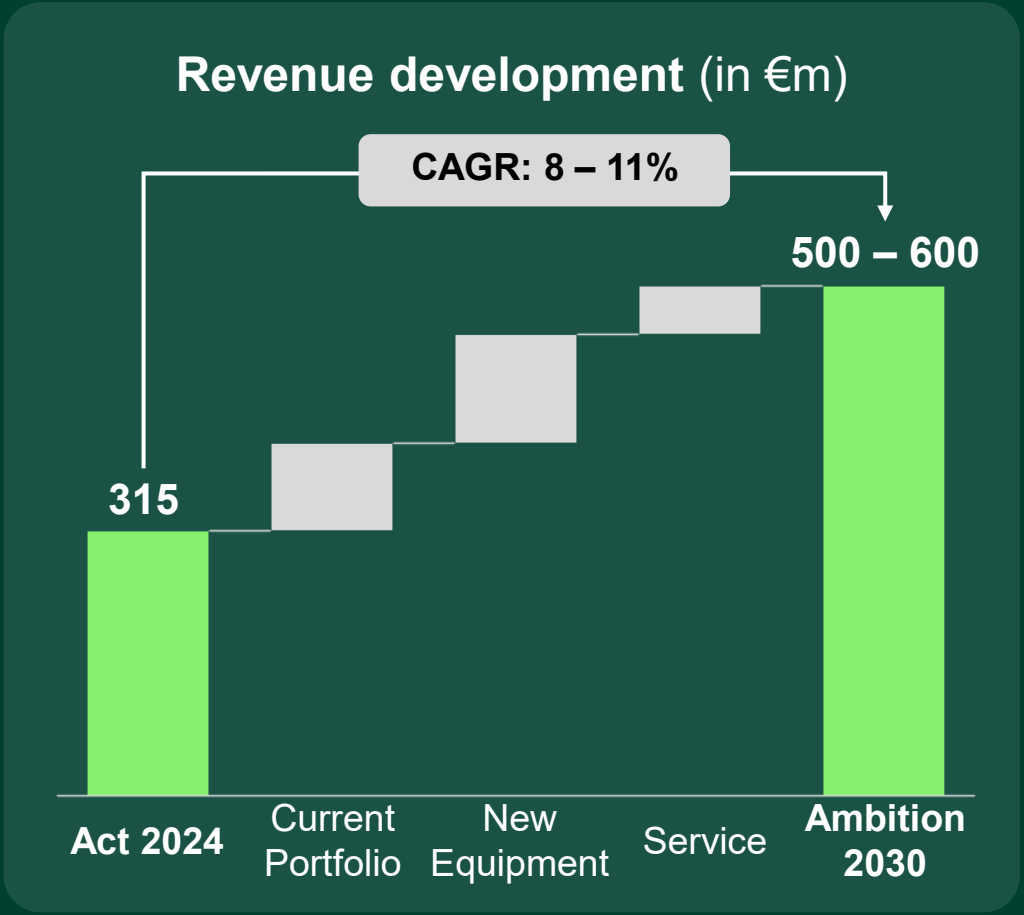
Further development of existing products

Backside-Power-Delivery	Pot. future business for Temporary Bonding and Fusion/Hybrid Bonding with no to little adaptations
Co-Packaged Optics	Industry is currently working on CPO on Substrate, achievable with simple pick-and-place processes – we are evaluating how our portfolio can contribute to CPO on Interposer
Glass Interposer	Process development and tool adaptation for glass processing (e.g. TGV), especially coating

Extending our portfolio with new products

Panel-level Packaging	Offering first Panel solutions by '26 / '27 (Imaging & Coating)

Summary | Driving profitable growth through focus on fast growing market segments & key customers with a streamlined portfolio



Advanced Packaging of Heterogenous devices – focus market & main innovation area across all three Product Lines:

Temporary Bonding	Remain key supplier for HBM
Hybrid Bonding	Enter Advanced Logic (short-term) & HBM (mid term)
Inkjet Coating	Establish cost-efficient coating alternative and enter Additive Manufacturing market
UV-Scanning	Scale Advanced Packaging business leveraging strong position at #1 foundry

Key-Customers leading Foundries, IDMs & OSATS:

Identify success factors and turn them into differentiating solutions

Streamlining product portfolio:

Continue streamlining portfolio to further reduce complexity & boost margins

1) Inkjet & Hybrid Bonding

Disclaimer

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Forward-looking statements are based on current plans, estimates, projections and expectations and are therefore subject to risks and uncertainties, most of which are difficult to estimate and which in general are beyond the control of SUSS MicroTec SE. Consequently, actual developments as well as actual earnings and performance may differ materially from those which explicitly or implicitly assumed in the forward-looking statements.

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