

# PSI Company Roadshow

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Q4. 2022

# Safe harbor notice

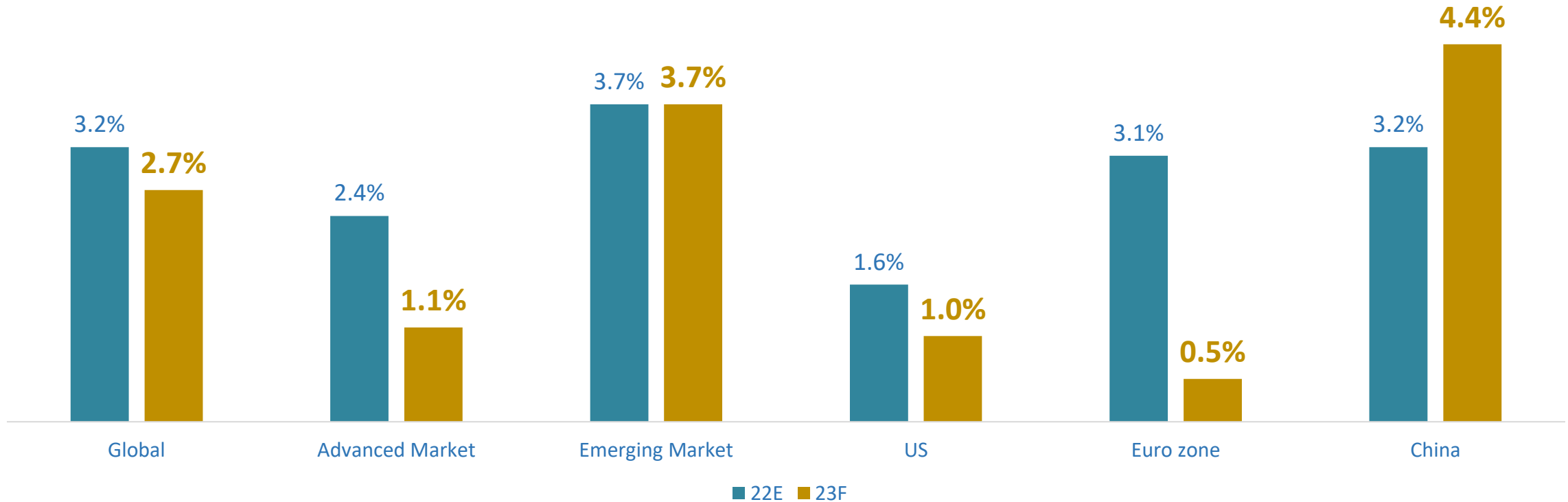
- Psi's statements of its current expectations are forward-looking statements subject to significant risks and uncertainties and actual results may differ materially from those contained in the forward-looking statements.
- Information as to those factors that could cause actual results to vary can be found in PSI's Annual or Quarterly Report filed with Taiwan Stock Exchange Corporation (TWSE) and such other documents as PSI may file with, or submit to the TWSE from time to time.
- Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events, or otherwise.
- The numbers of the presentation are prepared under IFRS.

# Industry Overview

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# GDP Growth FCST

- The world economy is facing the risk of another downturn due to the Russian Ukrainian war, China's lockdown measures, and tight fiscal policies to cope with rising prices

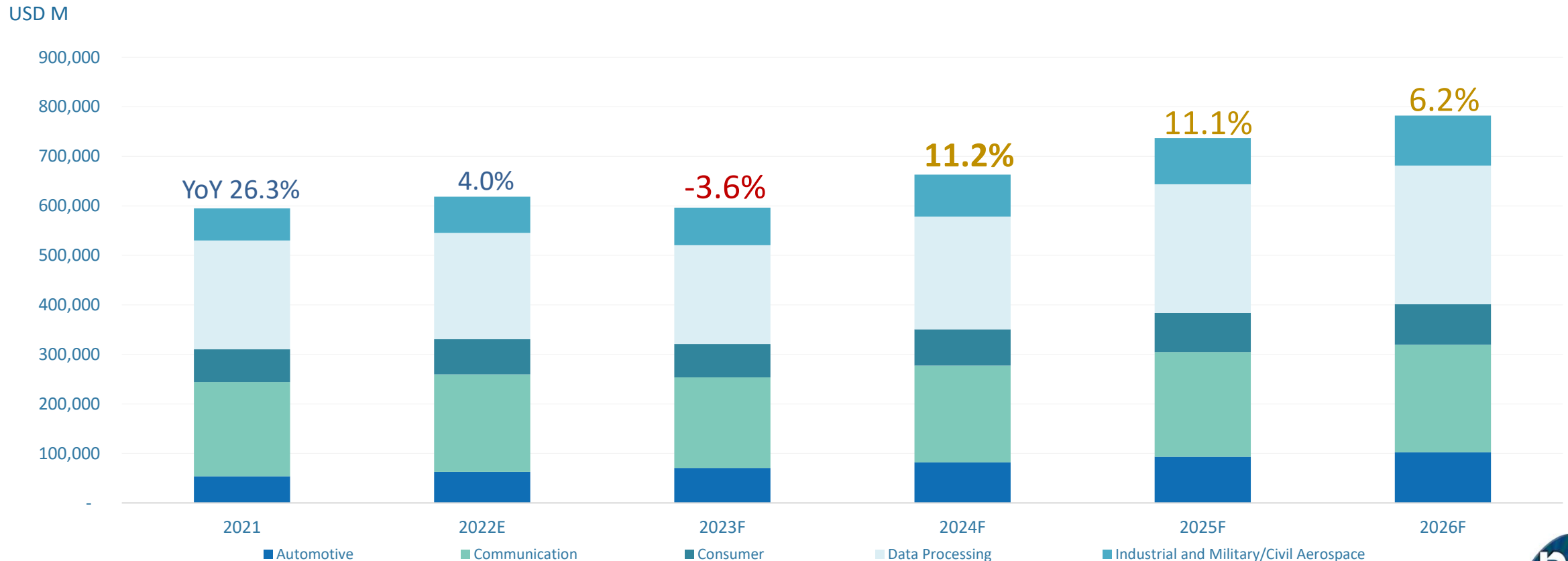


Source: IMF Oct. 2022



# Semiconductor Sales FCST

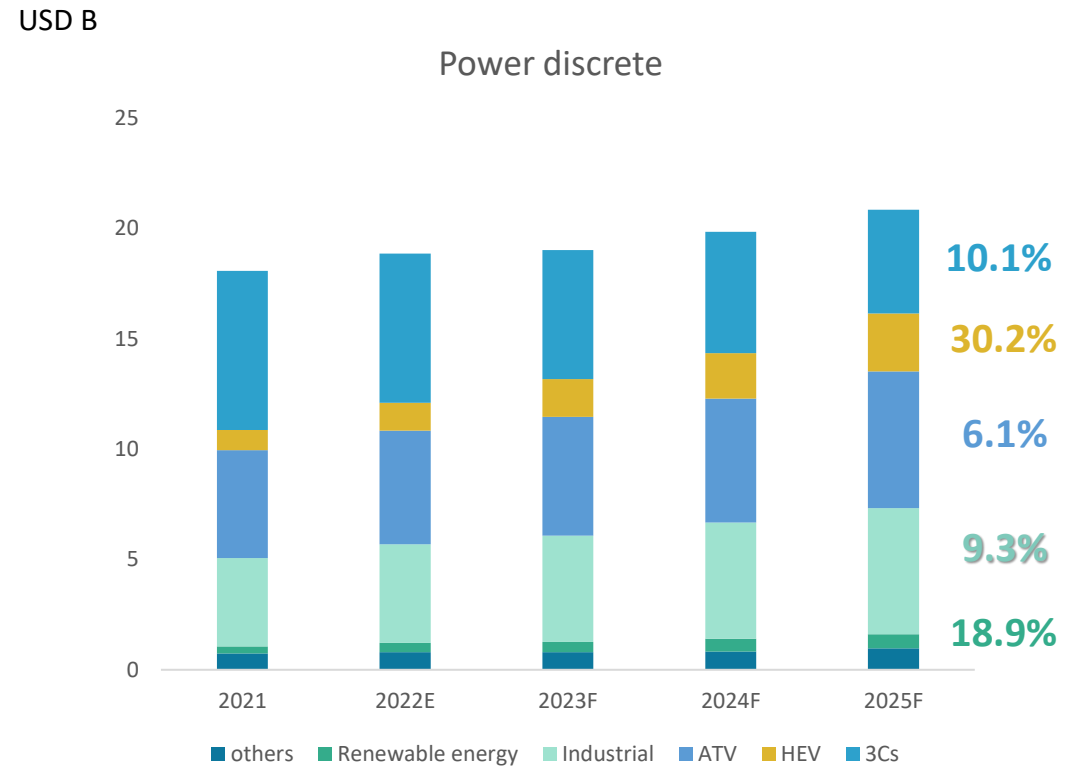
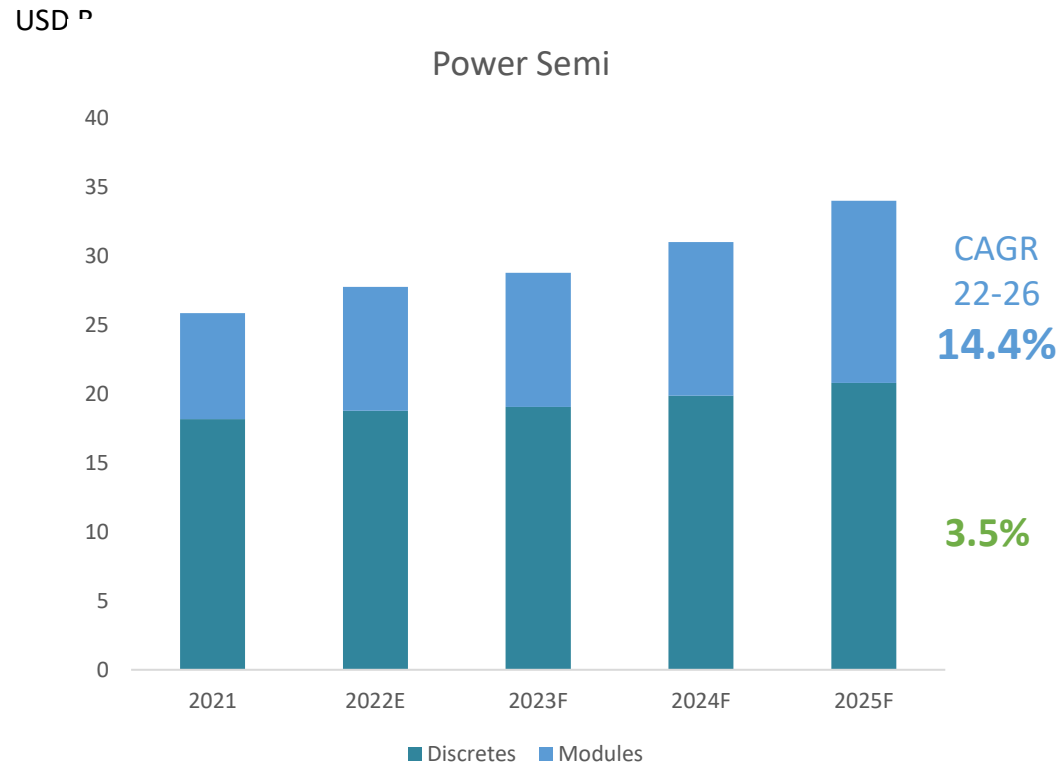
- Semiconductor end use applications in the automotive market will witness the highest CAGR of 13.4% between 2021 and 2026. Especial in HPC & power discrete.



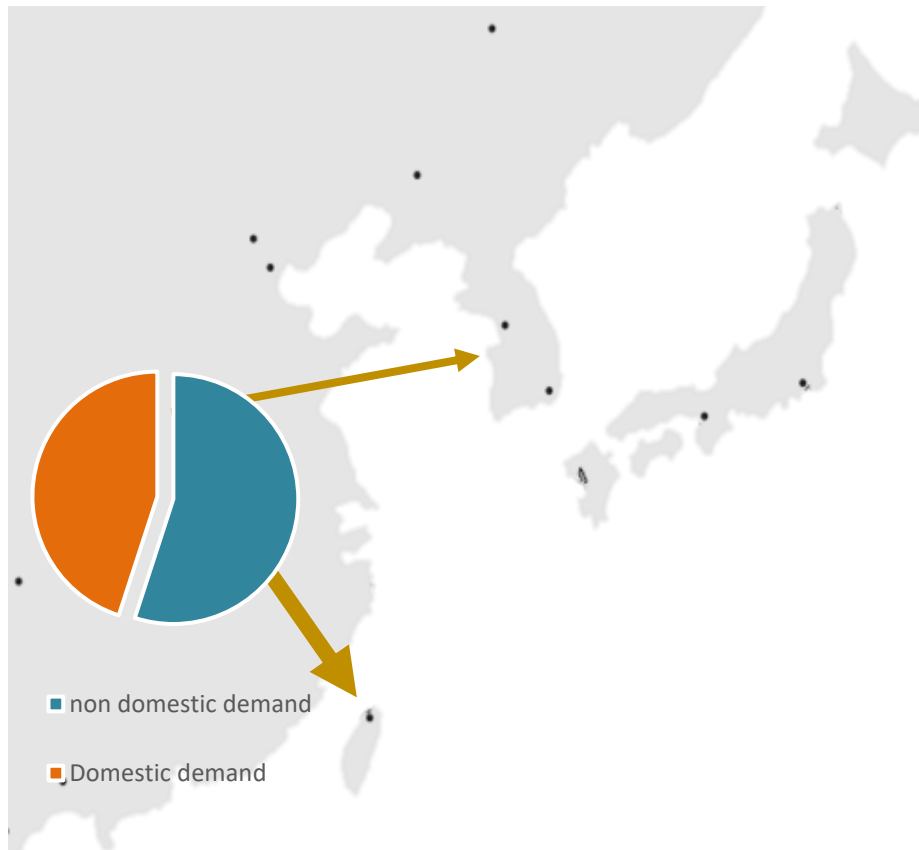
Source: Gartner Q3. 2022

# Power Semi Sales FCST

- New energy is the major demand driver for power discrete



# Benefiting From BIS Restriction



- All about security : One world, two systems.
- Non-domestic demand is transferring to Taiwan & Korea.
- Logic IC, power IC, and power discrete.

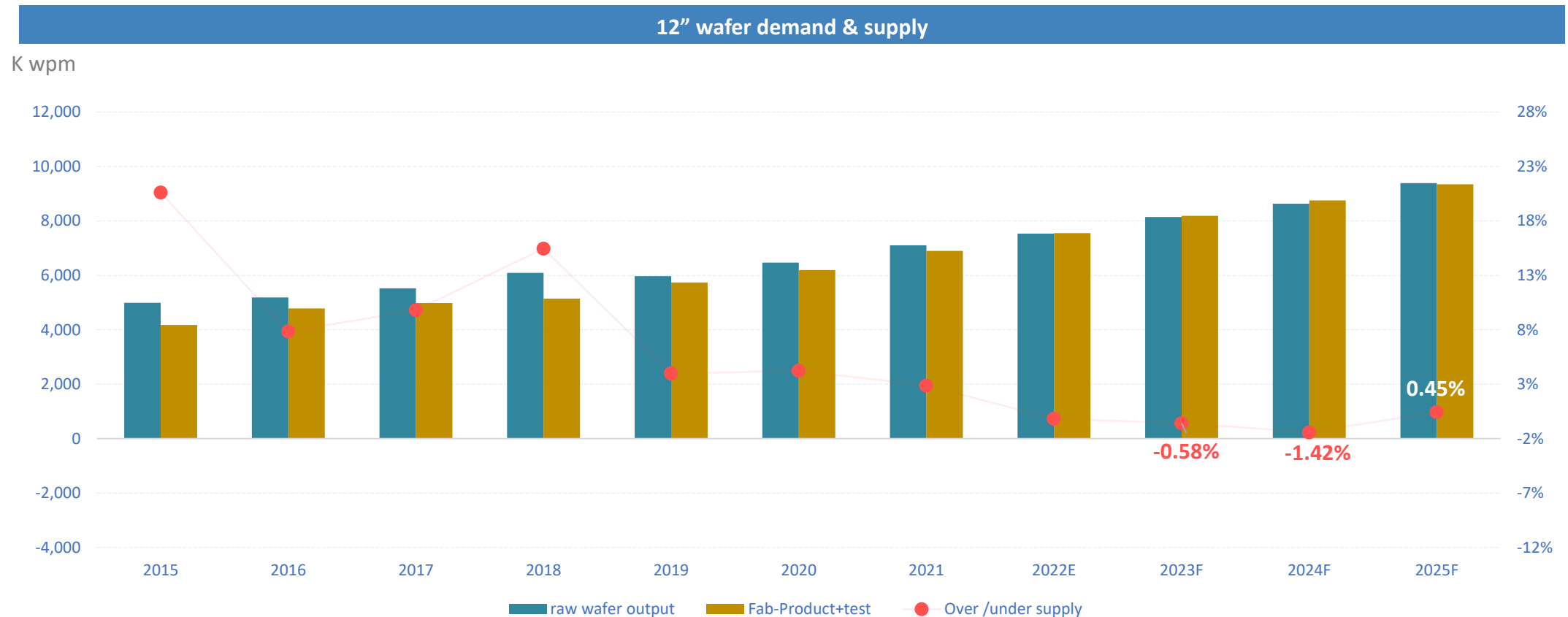
# Beyond Reclaim

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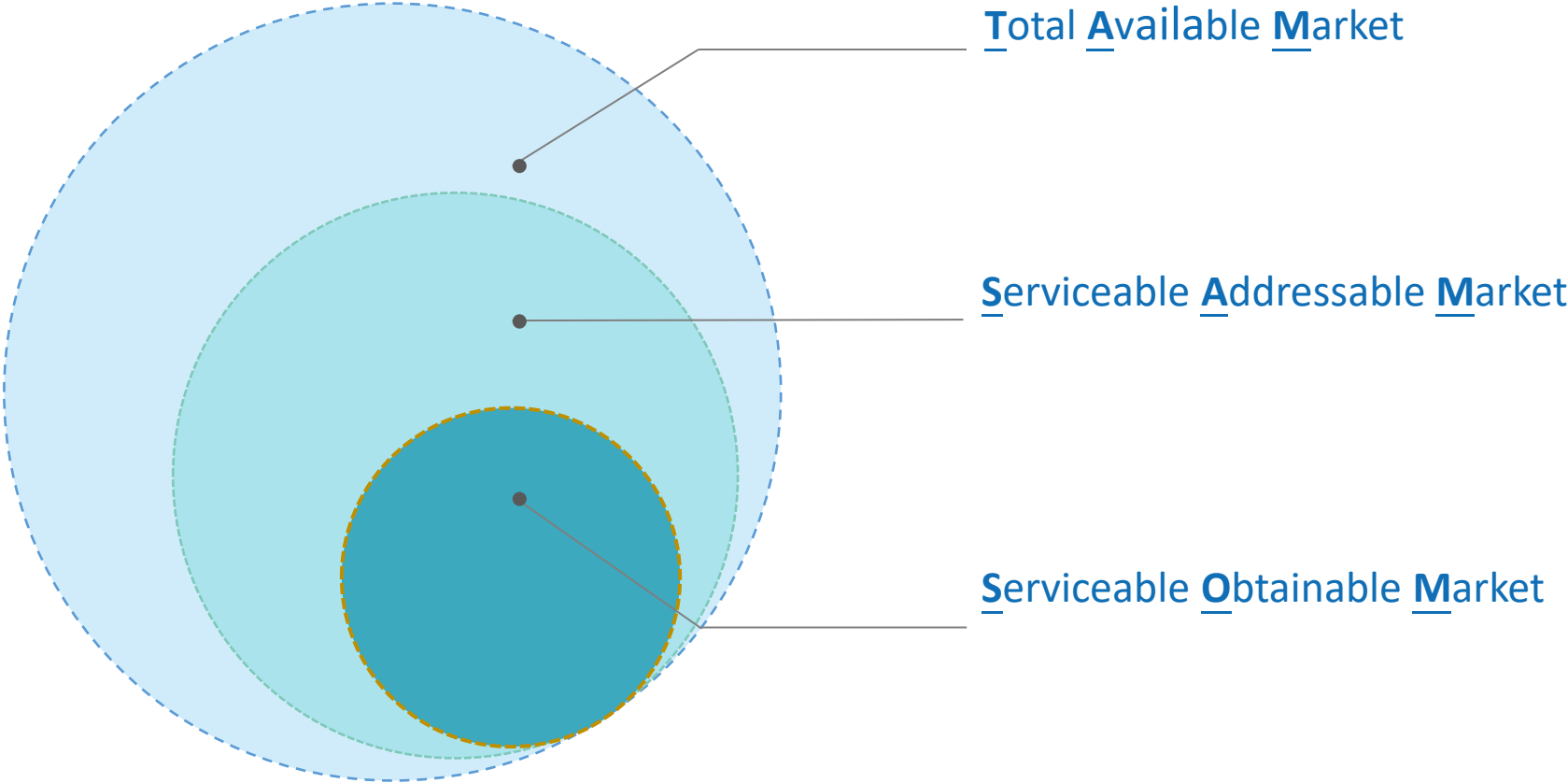
# Silicon Raw Wafer FCST

- Wafer makers will allocate resource to concentrate on prime wafer, even though, it still just meet foundries and IDMs' need.
- D/S low single digital means that test wafer still shortage. **23F: > 47.3Kwpm, 24F: > 122.5Kwpm**

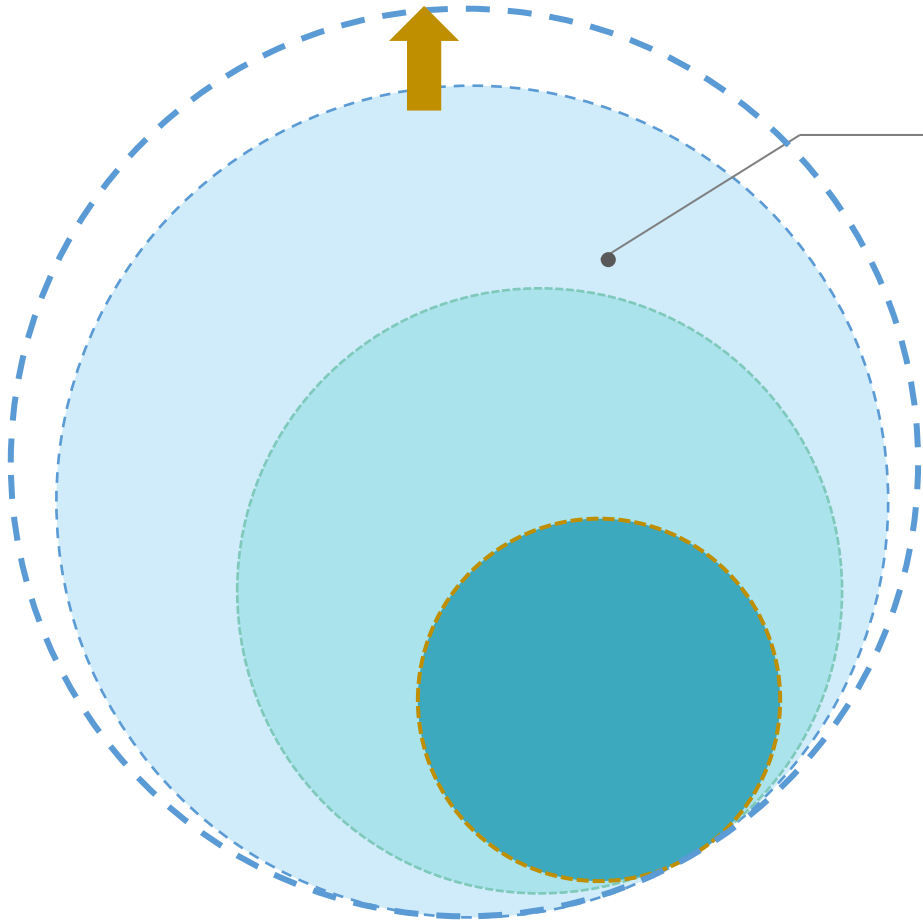


Source: Gartner, Semi.org, Nov. 2022

# TEST Wafer: TAM SAM SOM



# TEST Wafer Growing TAM

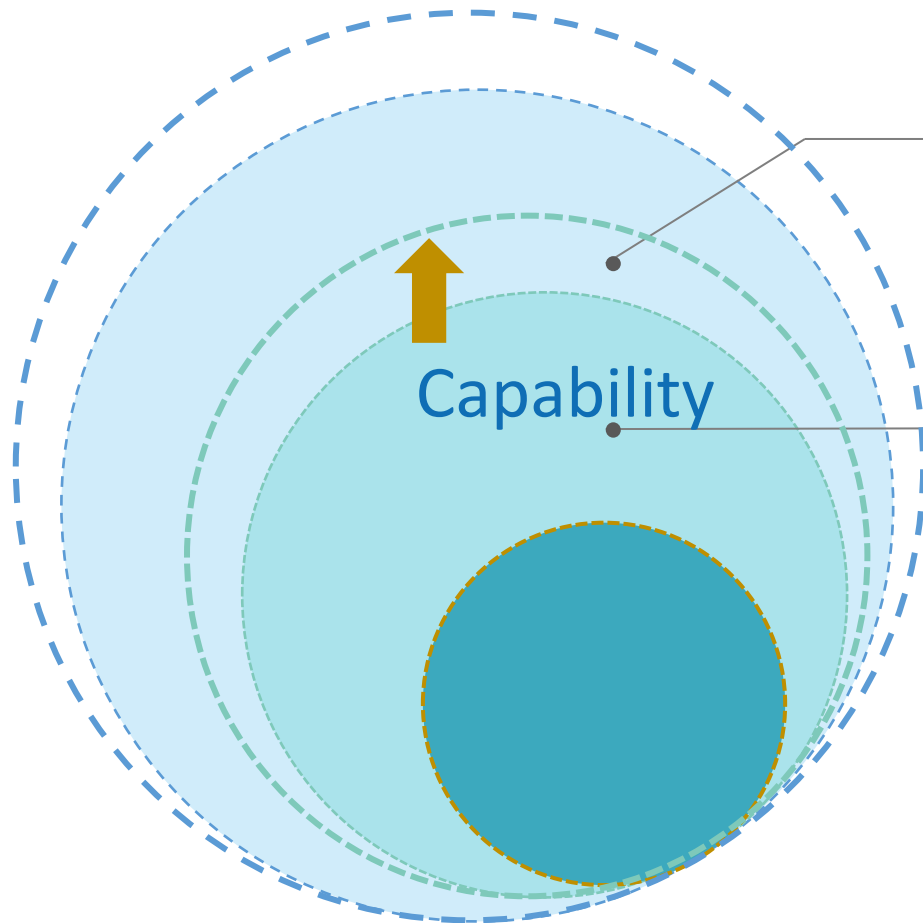


Total Available Market

- HPC: Automotive, AI, Server, Datacenter



# TEST Wafer Growing SAM



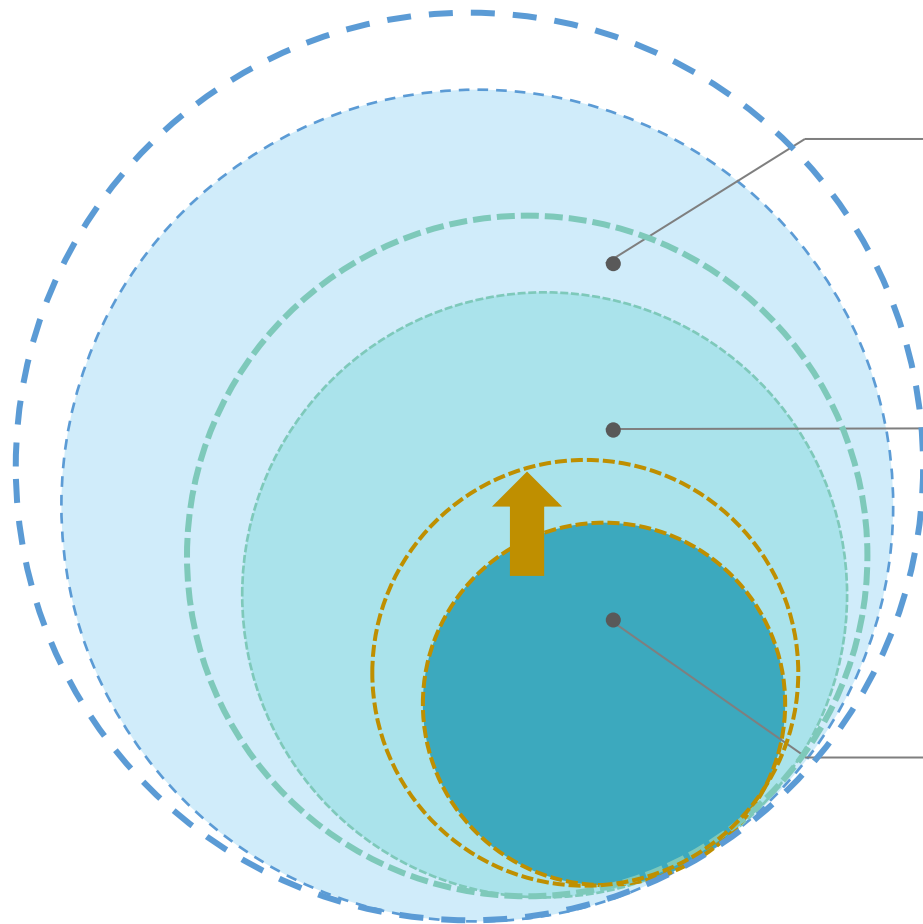
## Total Available Market

- HPC: Automotive, AI, Server, Datacenter

## Serviceable Addressable Market

- **Tech. EVO:** Power via; 3nm, 2nm, and beyond
- **Heterogeneous integration:** CIS BSI, 2.5D Si interposer

# TEST Wafer Growing SOM



## Total Available Market

- HPC: Automotive, AI, Server, Datacenter

## Serviceable Addressable Market

- **Tech. EVO:** Power via; 3nm, 2nm, and beyond
- **Heterogeneous integration:** CIS BSI, 2.5D Si interposer

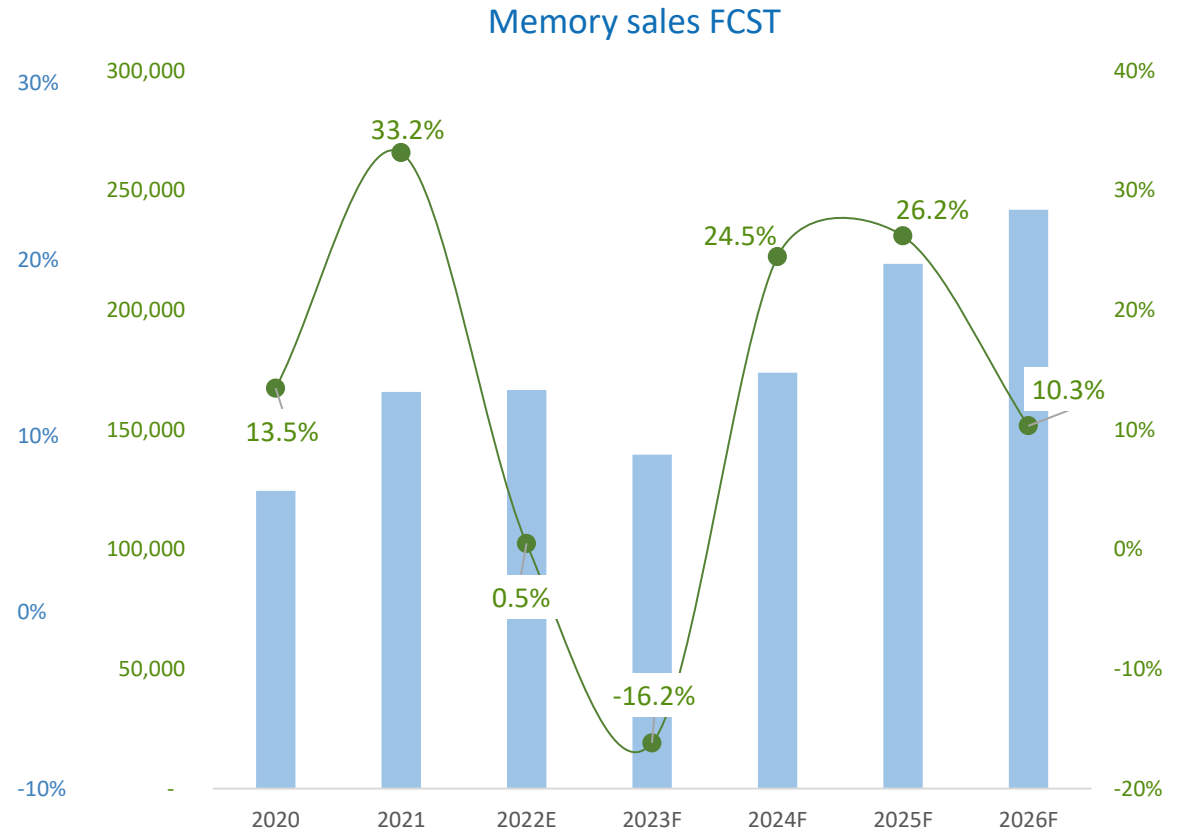
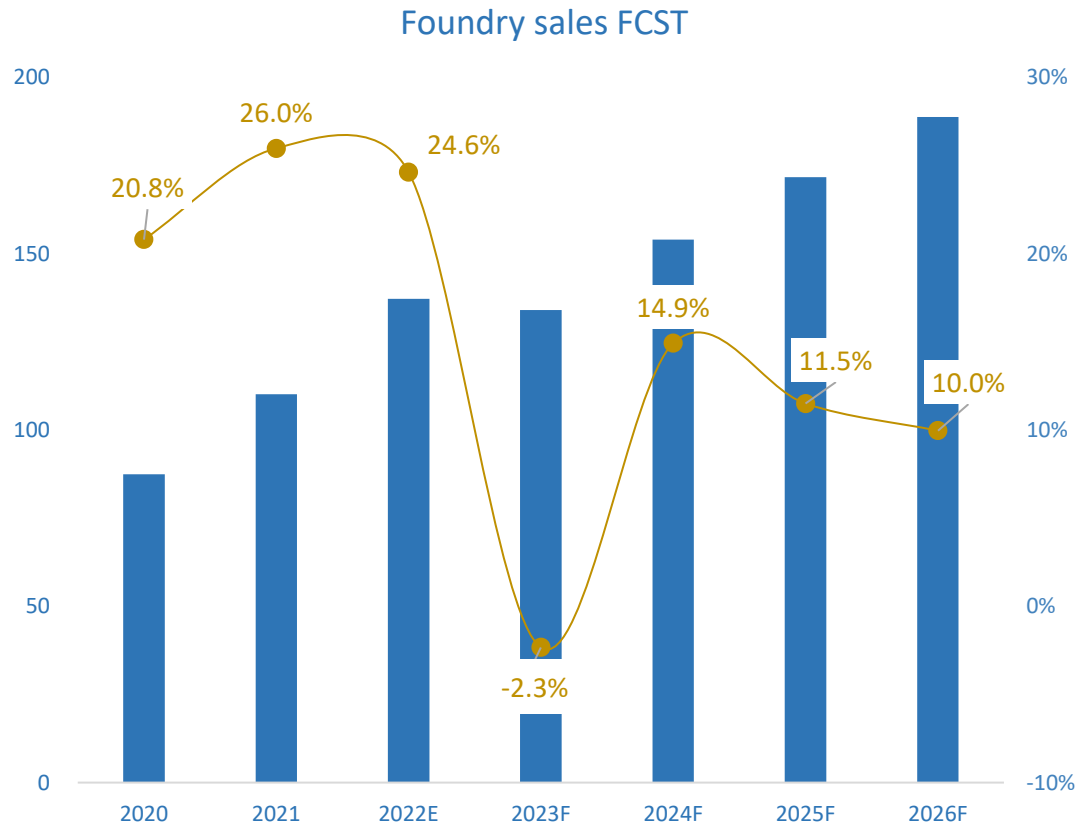
## Serviceable Obtainable Market

- Gaining market share from tier-2 supplier

# TAM Is Growing

- Foundry sales 21-26 CAGR 11.4%; Memory 7.9%
- The tier-1 foundry will outperformance with CAGR 15-20%

USD Bn

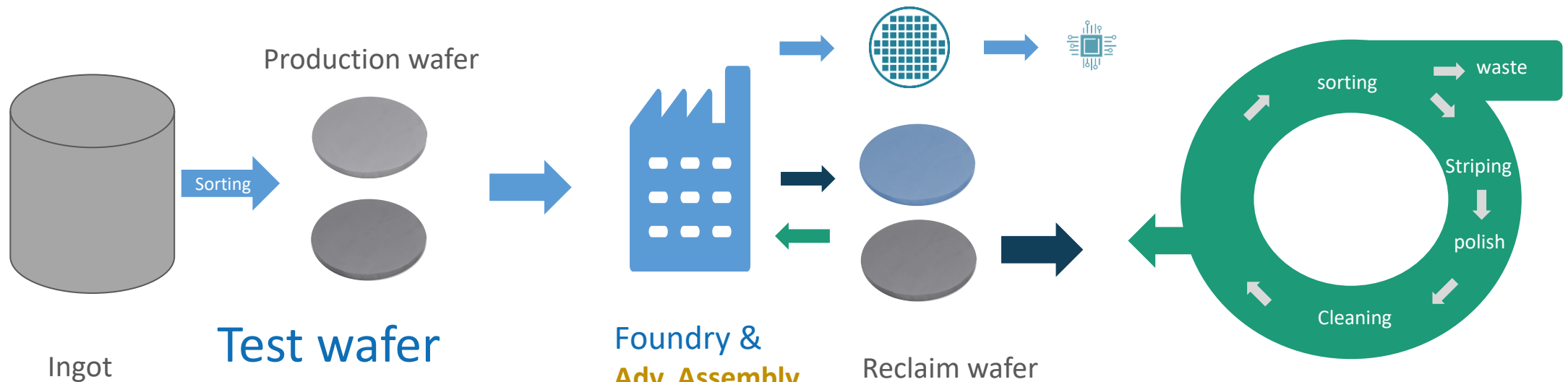


Source: Gartner, IC insights, Digitimes research, Oct. 2022



# PSI's SAM Is Growing

## Silicon Wafer Life Cycle



### Test wafer

- Si interposer
- Carrier wafer
- Monitor wafer

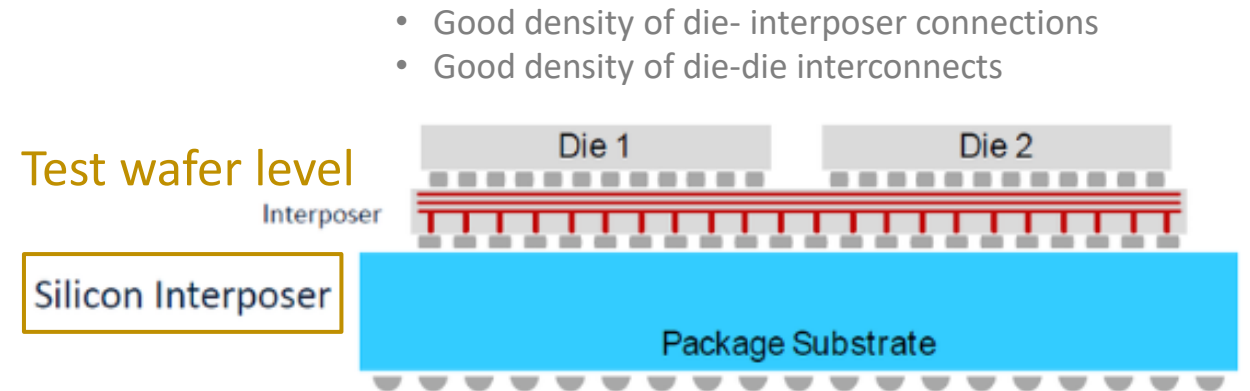
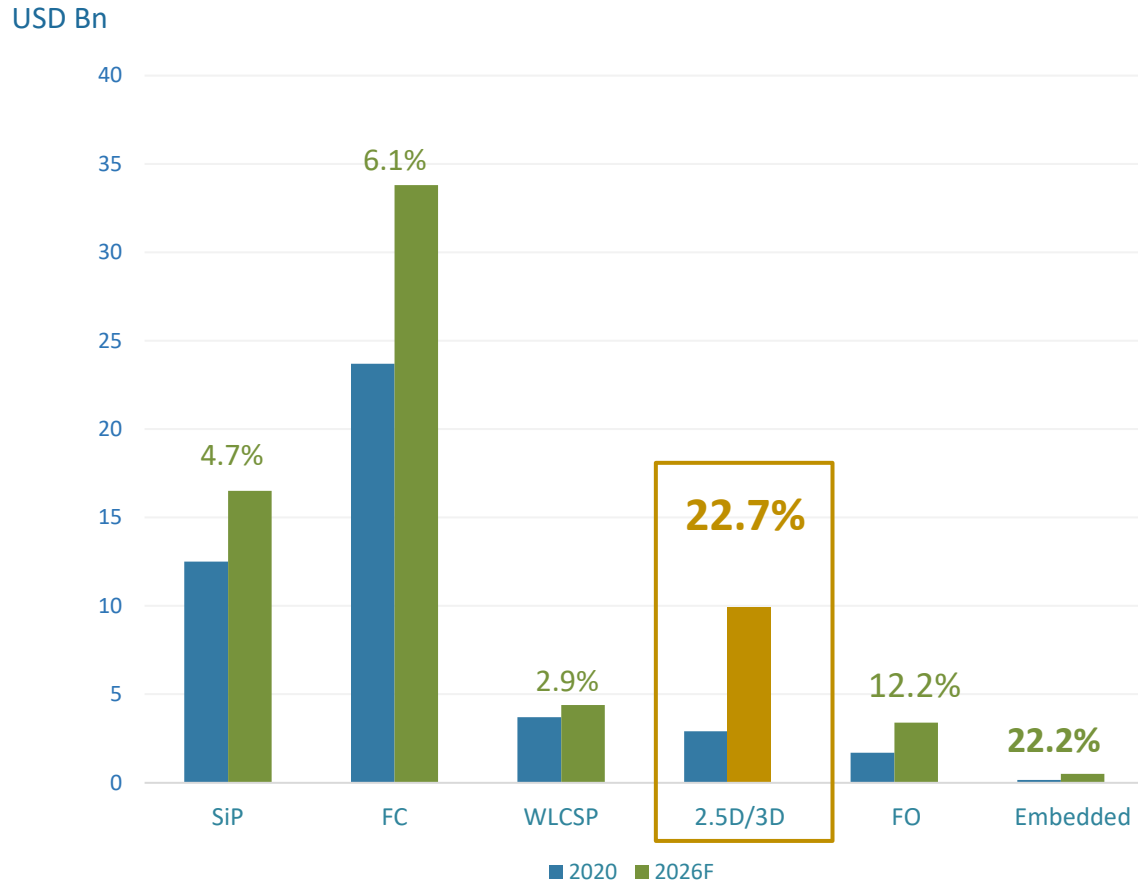
### Foundry &

### Adv. Assembly

- 2.5D packaging
- CIS BSI

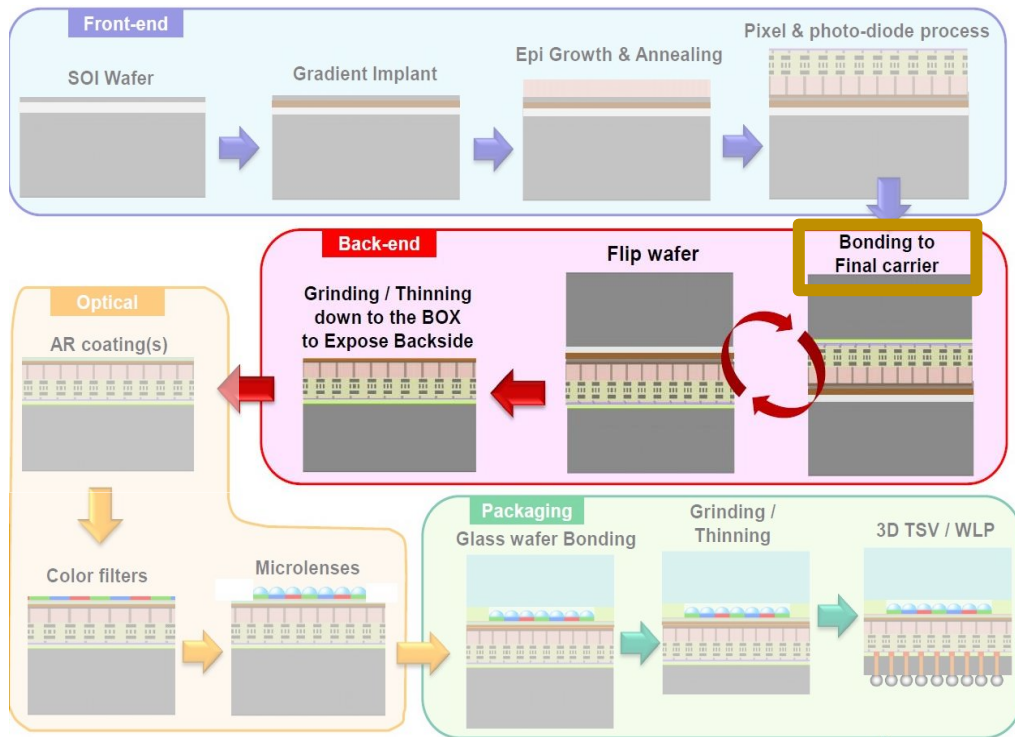
### Reclaim wafer

# 2.5D/3D Packaging 20-26 CAGR 22.7%



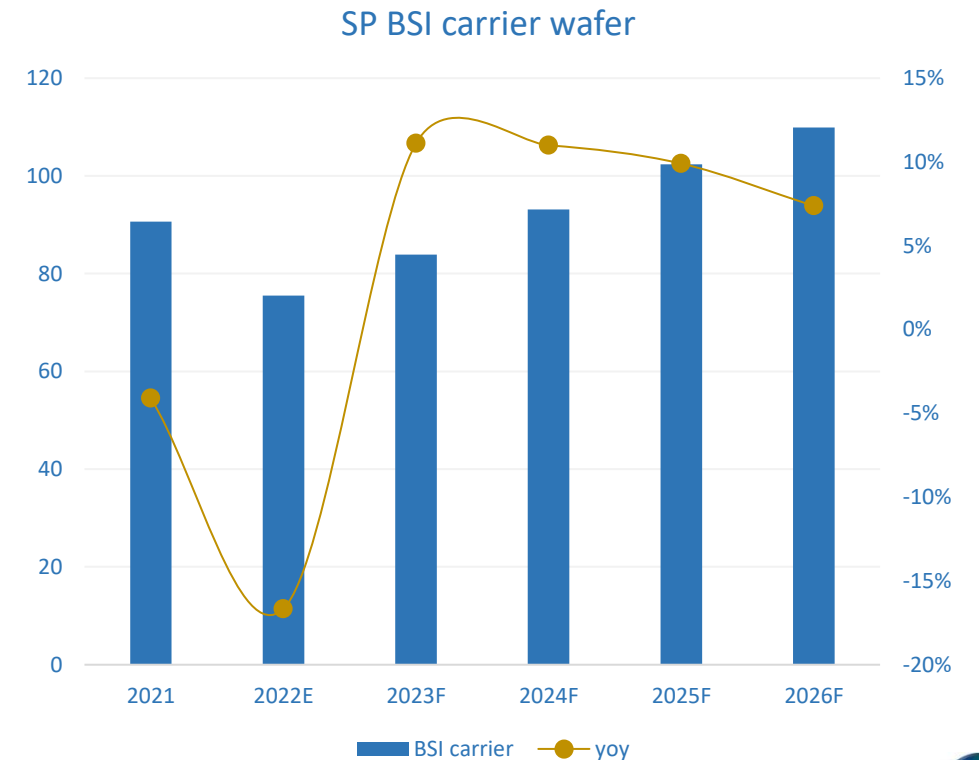


# CIS BSI Consume Test Wafer 1:1



Test wafer level,  
global flatness is  
major priority

Kwpm



Source: Sumco, Yole, Statista

# WW No.1 Automatic Wafering Fab in 2022



- Output reach 60k wpm in Nov. 22
- Industry 4.0 automation and green energy compliant factories
- Brand new construction and operation model for future site expansion
- Fulfill QCDS criteria to enlarge test wafer business territory

# Power Efficiency

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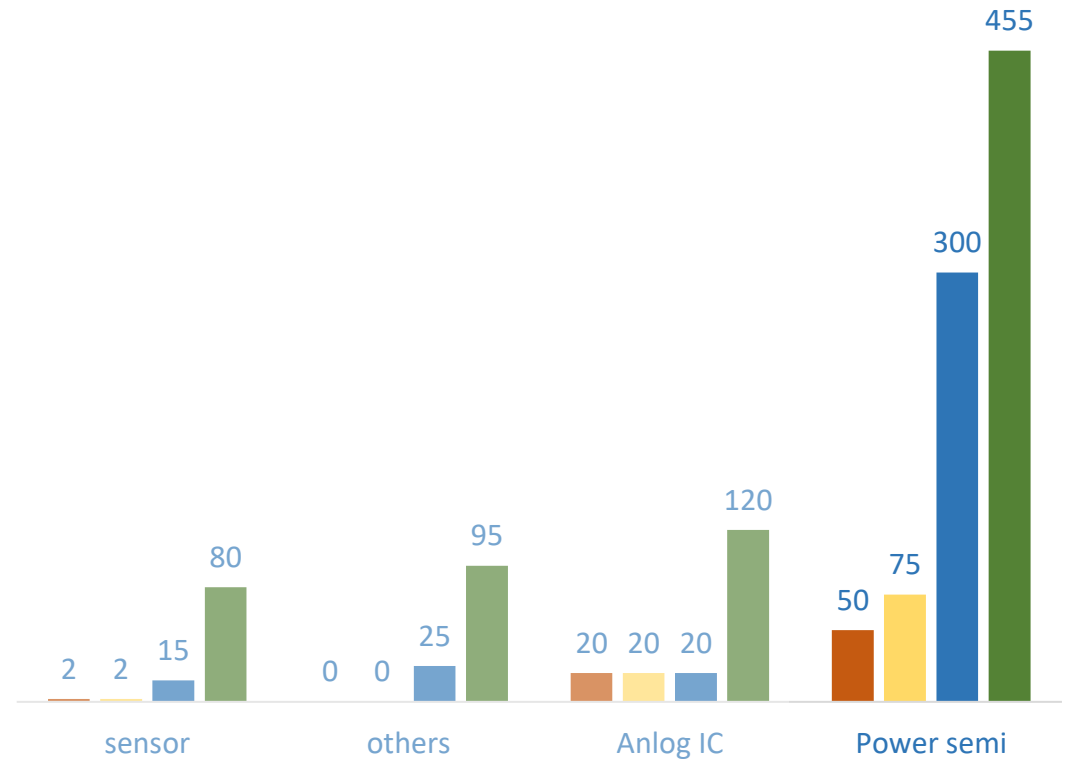
# EV Power The Semiconductor

160-284 MOSFETs & 48 IGBTs Per Car



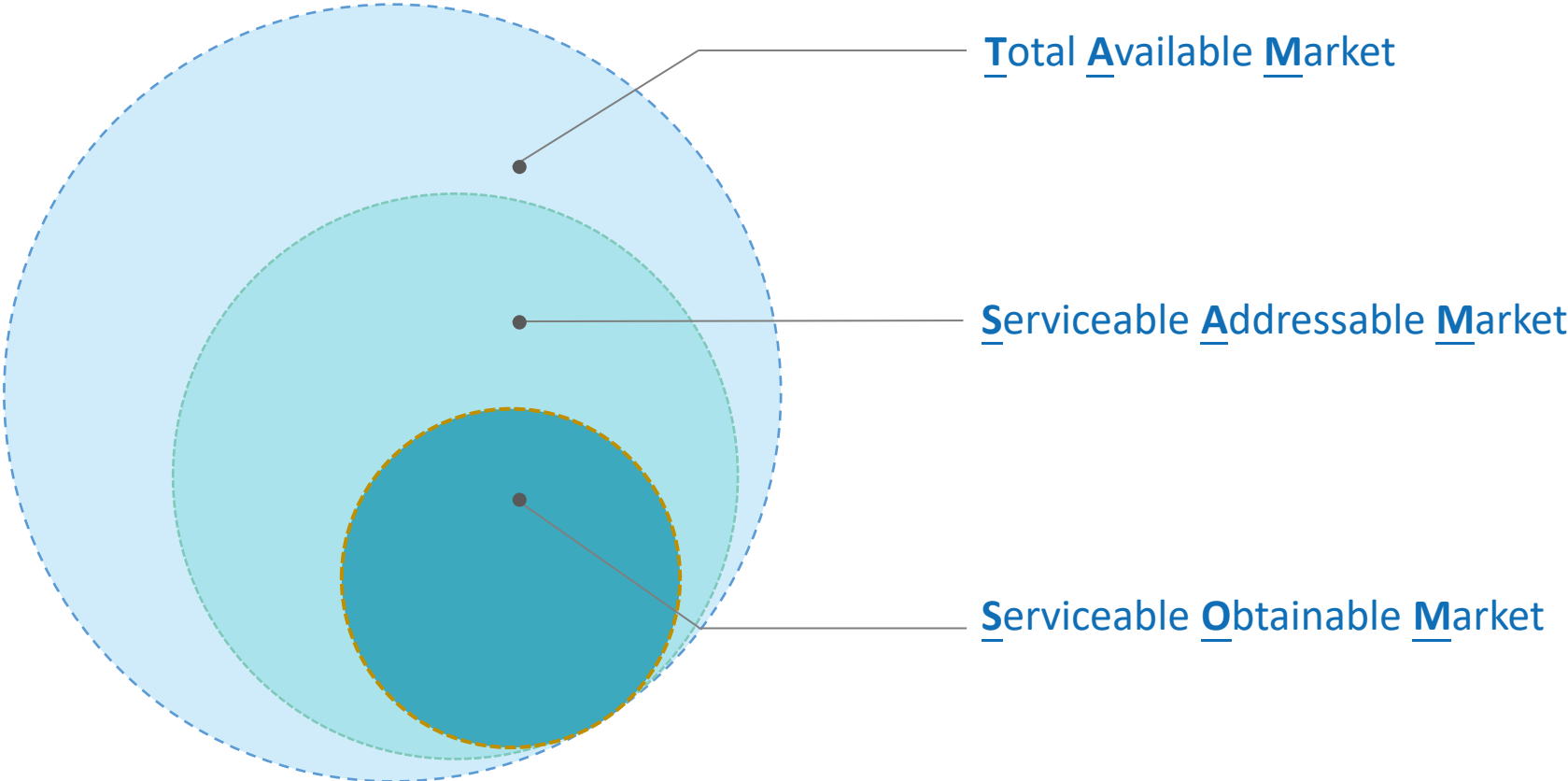
USD

ICE hybrid 48V hybrid EV

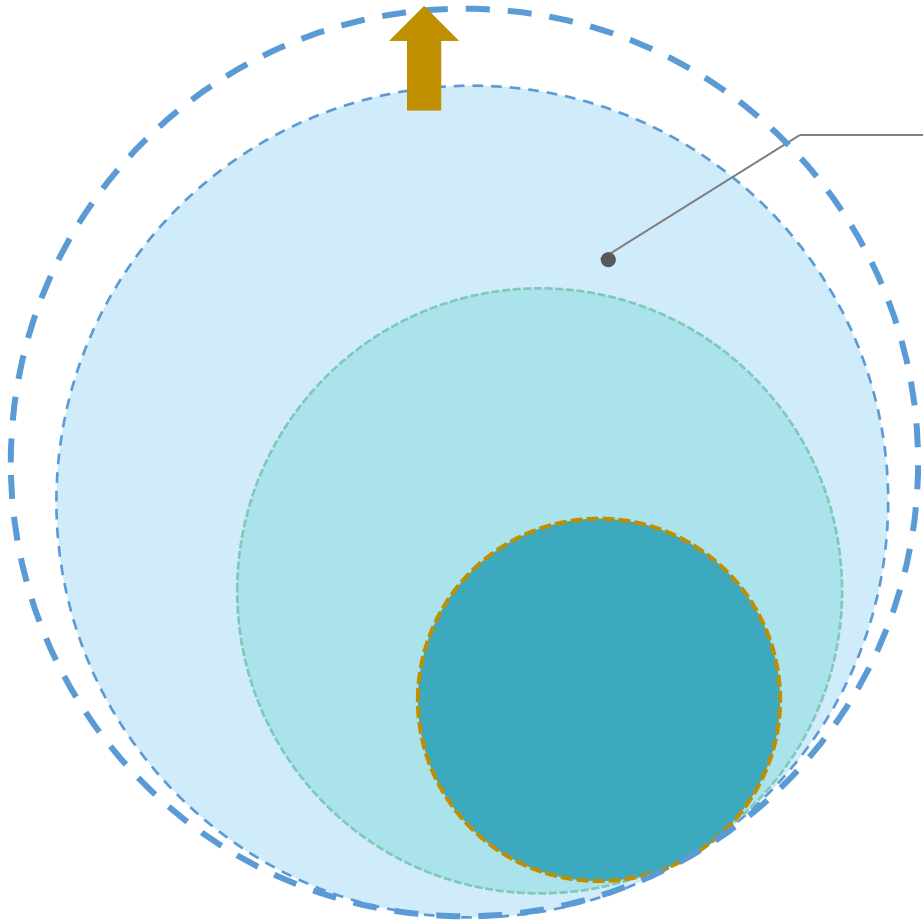


Source: Zodiac consulting, Infineon

# Thinning: TAM SAM SOM

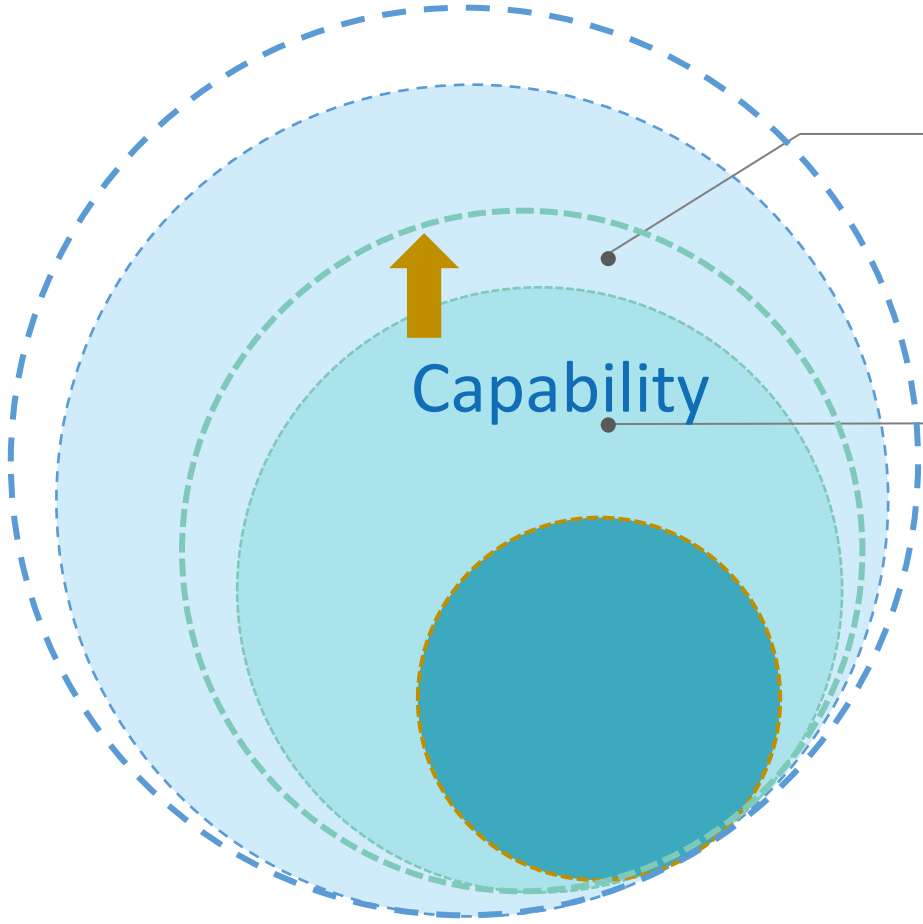


# Thinning Growing TAM



Total Available Market  
• Electric & Electronic Vehicle

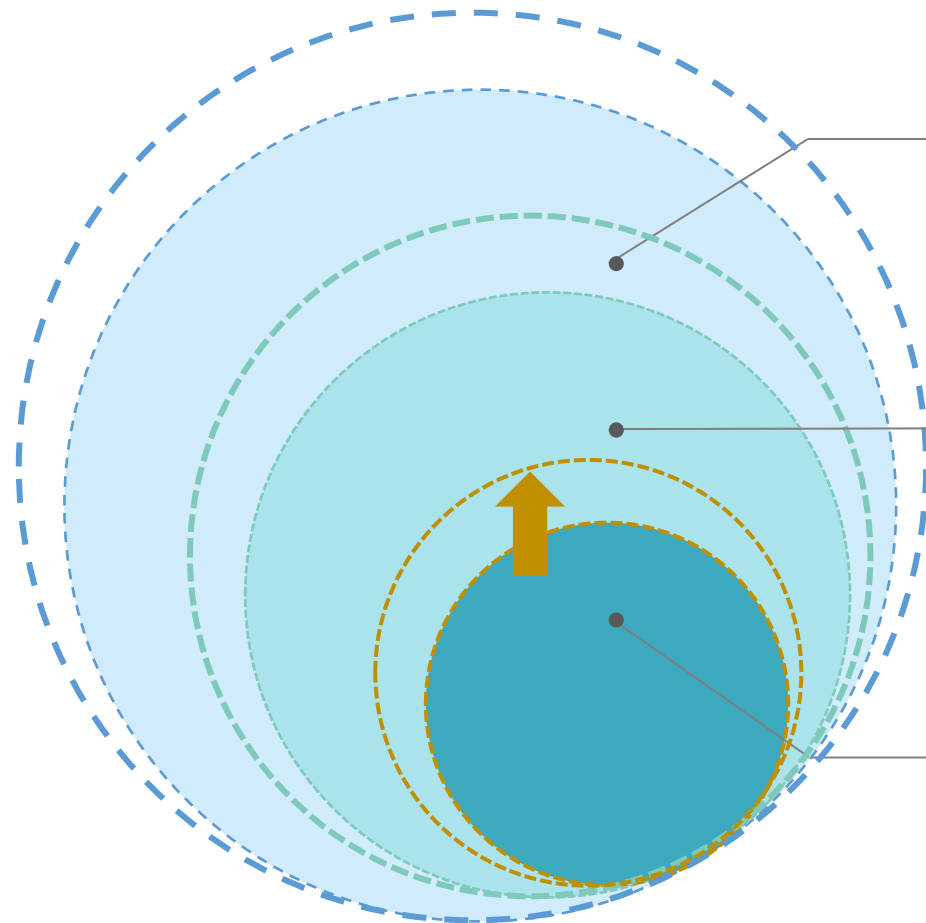
# Thinning Growing SAM



Total Available Market  
• Electric & Electronic Vehicle

Serviceable Addressable Market  
• Automotive grad thinning process  
• MEOL total solution: FSM, BGBM, CP, Carrier bound

# Thinning Growing SOM



## Total Available Market

- Electric & Electronic Vehicle

## Serviceable Addressable Market

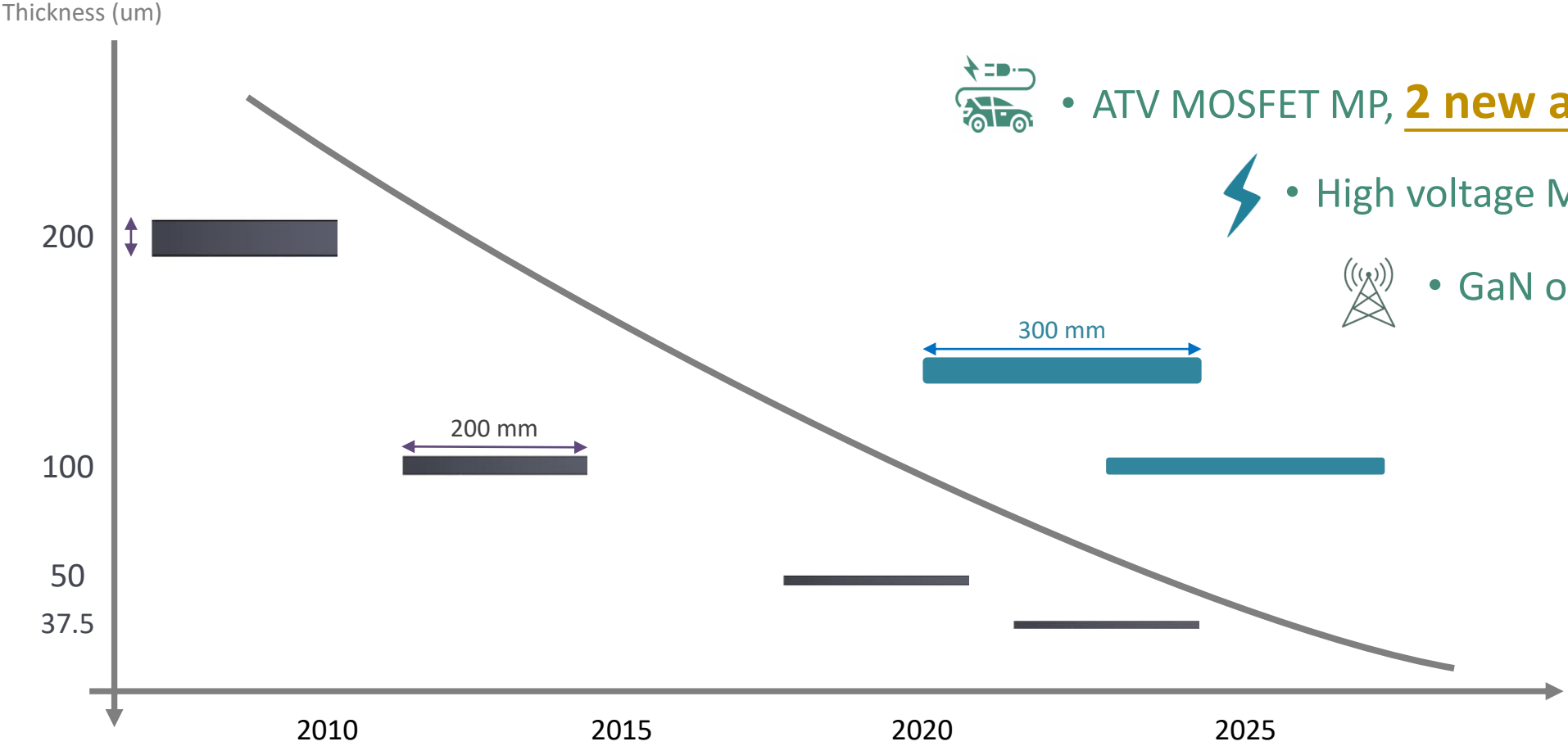
- Automotive grad thinning process
- MEOL total solution: FSM, BGBM, CP, Carrier bound

## Serviceable Obtainable Market

- Potential benefit from US BIS restrictions



# Thinning Roadmap



• ATV MOSFET MP, **2 new accounts in 2022**



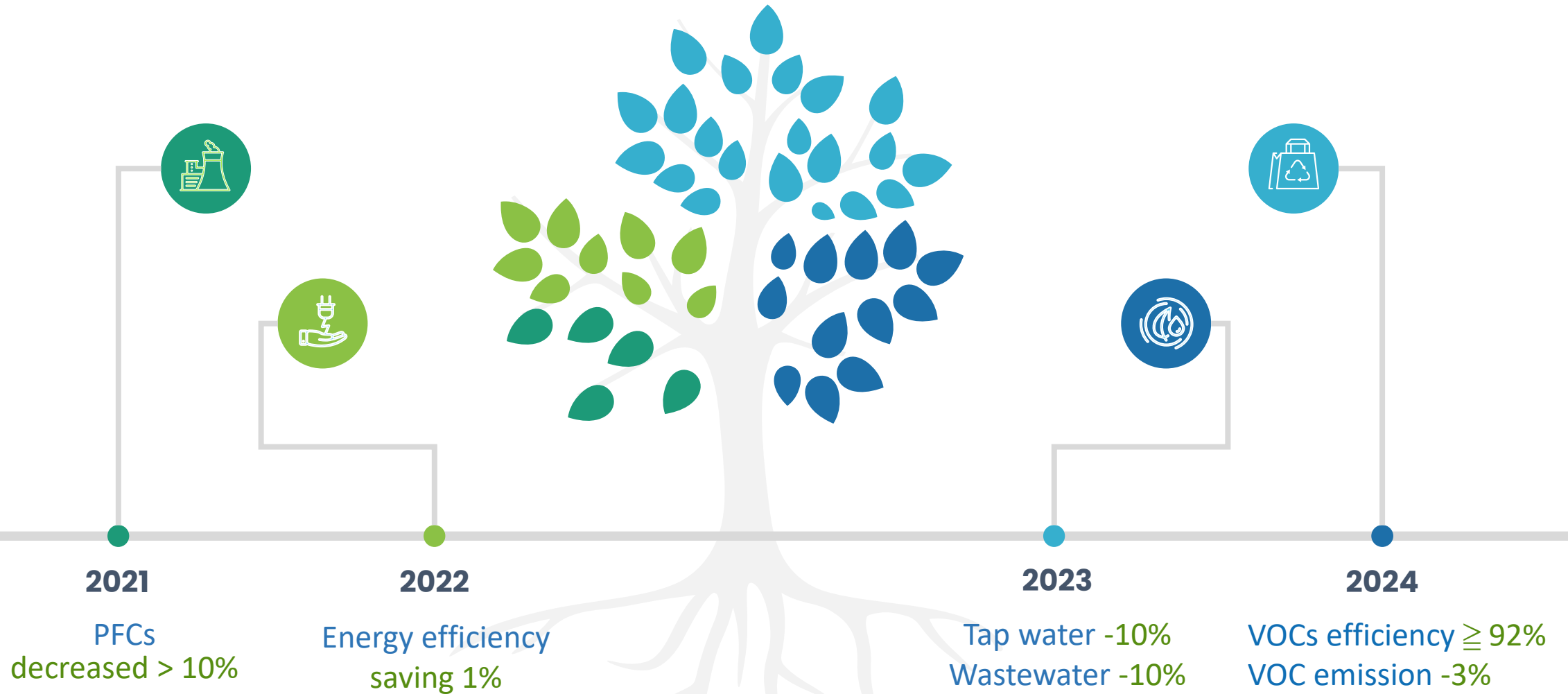
• High voltage MP



• GaN on Si MP

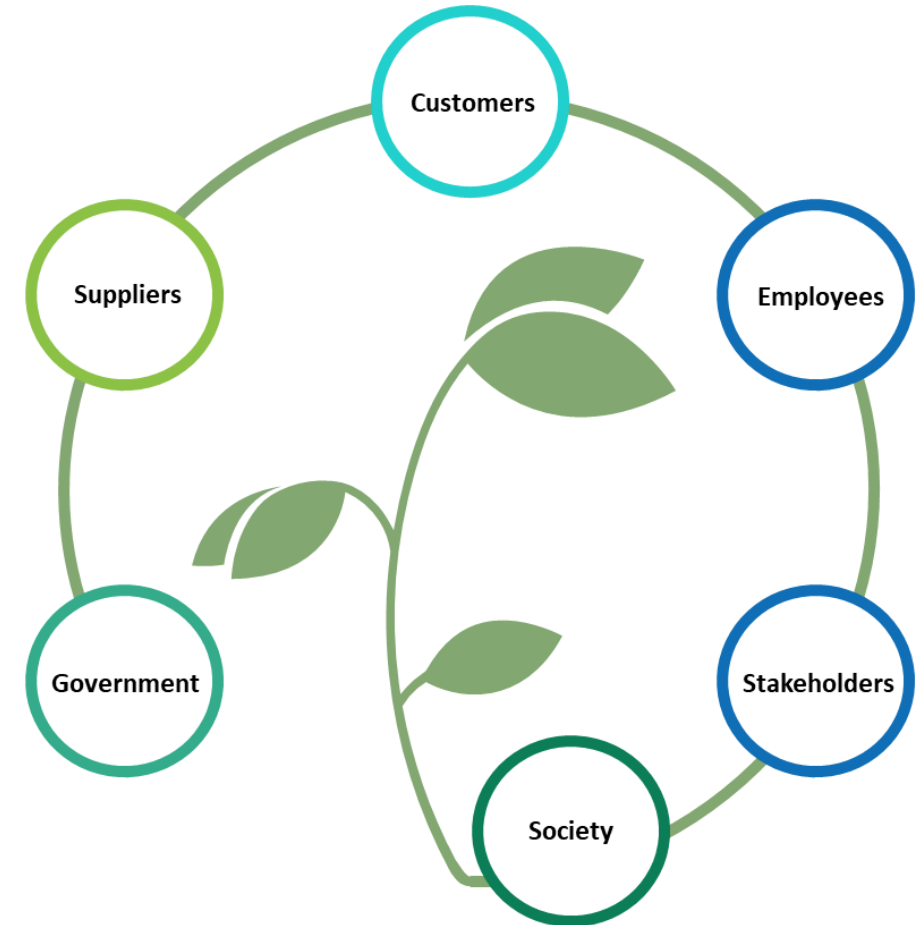
Source: Psi, image\_shutterstock

# Green Manufacturing Goal



# Key Takeaways

- PSI is continuously pursuing to be an ESG compliant supply chain partner.
- Reclaim new fab delivery as we said, Reclaim & Test expansion plan in 2023 unchanged.
- Thinning QoQ growth in 2022 as we said; dynamic macro uncertainty increase in 1H23.
- Semiconductor face headwind in 1H23; expected to recover from 2H23 as best wish.



# PSI is A Rising Company

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