

Fiscal H1'20 results

> November 2019



soitec

Disclaimer

This document was prepared by Soitec (the “Company”) on November 27th, 2019 in connection with the announcement of the first half of fiscal year 2019-2020 (“FY’20”) results.

This document is provided for information purposes only. It is public information only.

The Company’s business operations and financial position is described in the Company’s registration document 2018-2019 registered by the Autorité des marchés financiers (the “AMF”) on July 4th, 2019 under visa D.19-0649 (the “Document de Référence”) and in the Company’s FY’20 half-year report. Copies of the Document de Référence are available in French and English languages through the Company and may as well be consulted on the AMF’s website (www.amf-france.org). The Document de Référence and the FY’20 half-year report can also be downloaded on the Company’s website (www.soitec.com).

Your attention is drawn to the risk factors described in Chapter 2 of the Document de Référence. A review of these risk factors has been conducted after the closing of FY’20 first half and no new risk was found.

This document contains summary information and should be read in conjunction with the Document de Référence and the FY’20 half-year report. In the event of a discrepancy between this document and the Document de Référence or the FY’20 half-year report, the Document de Référence or, as the case may be, the FY’20 half-year report, shall prevail.

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This document contains certain forward-looking statements. These forward-looking statements relate to the Company’s future prospects, developments and strategy and are based on analyses of earnings forecasts and estimates of amounts not yet determinable. By their nature, forward-looking statements are subject to a variety of risks and uncertainties as they relate to future events and are dependent on circumstances that may or may not materialize in the future. Forward-looking statements are not a guarantee of the Company’s future performance.

The Company’s actual financial position, results and cash flows, as well as the trends in the sector in which the Company operates may differ materially from those contained in this document. Furthermore, even if the Company’s financial position, results, cash-flows and the developments in the sector in which the Company operates were to conform to the forward-looking statements contained in this document, such elements cannot be construed as a reliable indication of the Company’s future results or developments.

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Agenda

1 H1'20 Business highlights

2 H1'20 Financials

3 FY'20 Guidance

4 Soitec company profile – Additional information

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Fiscal H1'20 Business highlights

SOI products portfolio

RF-SOI – FD-SOI – Specialty SOI

200mm wafer sales at 121 M€ (+15% y/y)

- Growth supported by higher volumes and more favorable product mix (RF-SOI, Power-SOI)
- Higher outsourcing activities with Chinese partner Simgui (RF-SOI)

300mm wafer sales at 125 M€ (+50% y/y)

- Strong growth driven by RF-SOI from tier-1 fabless & foundries
- Ongoing adoption of FD-SOI (automotive, wearables, smart home)
- Higher sales of Photonics-SOI (Cloud)

Overall SOI capacity deployment

- Bernin I & II running at full capacity
- Singapore capacity ramp along with refresh and epitaxy activities

Beyond SOI – POI & GaN

Piezo-on-insulator (POI)

- Decision to add POI substrates capacity (150-mm) to meet increasing demand for 4G/5G SAW filters customers
- Production in Bernin III fab to start in calendar Q1'20

EpiGaN acquisition (May 2019)

- Gallium Nitride (GaN) epiwafers to serve RF 5G and power electronics
- Completed full integration

Compound semiconductors

Silicon Carbide

- Joint-development program with Applied Materials on next generation SiC substrates to address surging demand for electric vehicles, telecommunication and industrial applications
- Pilot line at CEA-Leti (France) to start in calendar H1'20
- Sample production to start in calendar H2'20

InGaNOS (microLEDs)

- Ongoing R&D activities



Agenda

1 H1'20 Business highlights

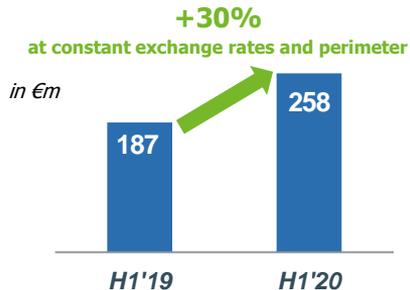
2 H1'20 Financials

3 FY'20 Guidance

4 Soitec company profile – Additional information

H1'20 highlights – Solid financial performance

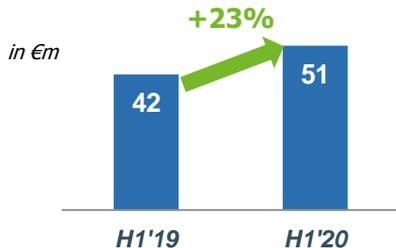
Sharp revenue growth



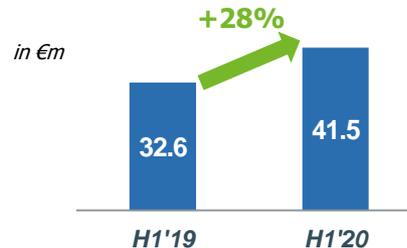
Strong increase in gross profit



Further increase in current operating income



Strong increase in net profit

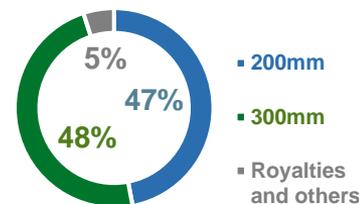


The income and expenses related to discontinued operations are directly reported as "Net result from discontinued operations". Down to the line "Net result after tax from continuing operations", the Group consolidated P&L account exclusively and fully reflects the Electronics activities as well as corporate expenses.

H1'20: revenue breakdown

In €m	H1'20	H1'19	Change vs H1'19	
			%	% at constant FX and scope
200mm wafer sales	121.4	102.0	+19%	+15%
300mm wafer sales	125.3	80.6	+56%	+50%
Royalties and other revenues	11.7	4.3	+174%	+20%
Total sales	248.5	186.9	+38%	+30%

H1'20 sales breakdown



› **200mm wafer sales up 15%** (at constant exchange rates and perimeter)

- Solid growth in RF-SOI
- Sustained demand for Power-SOI
- Higher volumes thanks to production outsourced to Simgui

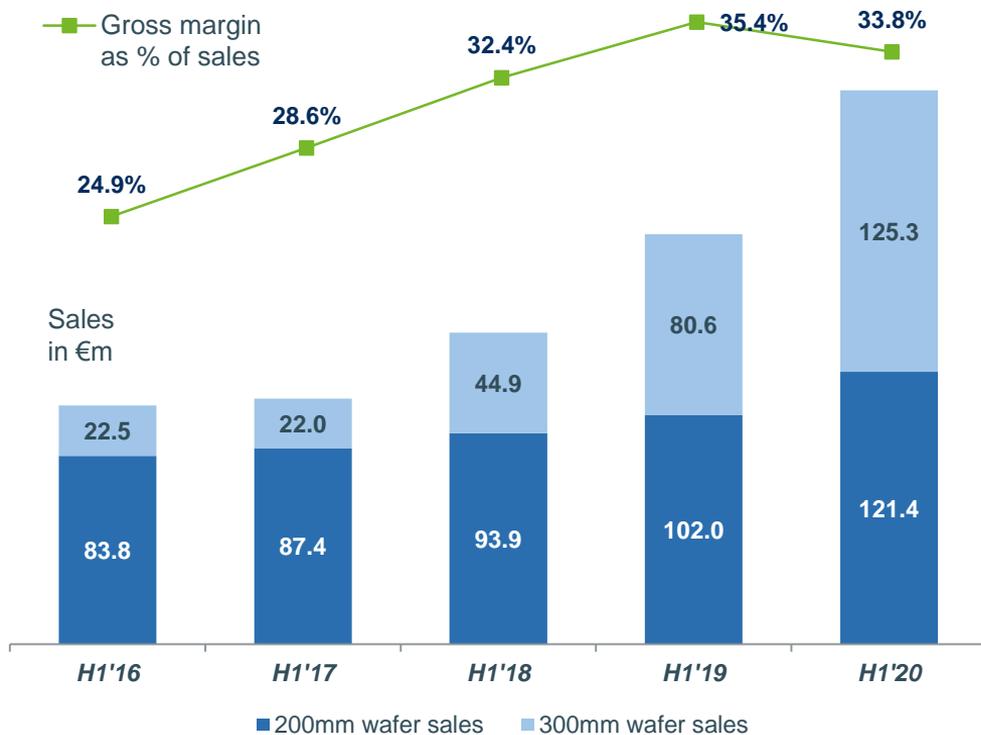
› **300mm wafer sales up 50%** (at constant exchange rates and perimeter)

- Much higher volumes driven by surge in RF-SOI 300 mm
- Further adoption of FD-SOI technology
- Sustained level of Photonics-SOI sales

› **Royalties and other revenues up 174%**

- 20% growth at constant exchange rates and perimeter
- Contribution from Frec|n|sys, Dolphin Design and EpiGaN reached €8.8m in H1'20

H1'20 gross margin slightly down, as anticipated



› Strong operating leverage

- Bernin I (200mm) running at full capacity
- Bernin II (300mm) utilization rate close to full capacity at the end of H1'20

› Favorable forex impact

› Impact of capacity increase

- Higher outsourced production (Simgui, 200-mm)
- Higher depreciation costs
- Ramp-up costs of Singapore facility

› Higher bulk material prices

Further increase in current operating income

<i>In €m</i>	H1'20	H1'19	Change
Sales	258.5	186.9	+38%
Gross profit	87.4	66.1	+32%
<i>As a % of sales</i>	33.8%	35.4%	
Gross R&D expenses	(30.8)	(24.0)	+28%
Prototype sales and others	4.1	5.6	-27%
Subsidies and income tax credit	10.7	10.1	+6%
Net R&D expenses	(16.0)	(8.3)	+93%
<i>As a % of sales</i>	6.2%	4.4%	
Sales & Marketing expenses	(4.9)	(4.2)	+15%
General and administrative expenses	(15.3)	(12.0)	+28%
Total SG&A expenses	(20.2)	(16.2)	+24%
<i>As a % of sales</i>	7.8%	8.7%	
Current operating income	51.3	41.6	+23%
<i>As a % of sales</i>	19.9%	22.2%	

› Net R&D expenses sharply up:

- Increase in gross R&D expenses largely due to the integration of Dolphin Design and EpiGaN
- Higher subsidies partially offset by lower research tax credits

› Lower SG&A / sales ratio despite:

- Increased expenses due to higher activity and integration of Dolphin Design and EpiGaN
- Increase in charges related to employee compensation schemes

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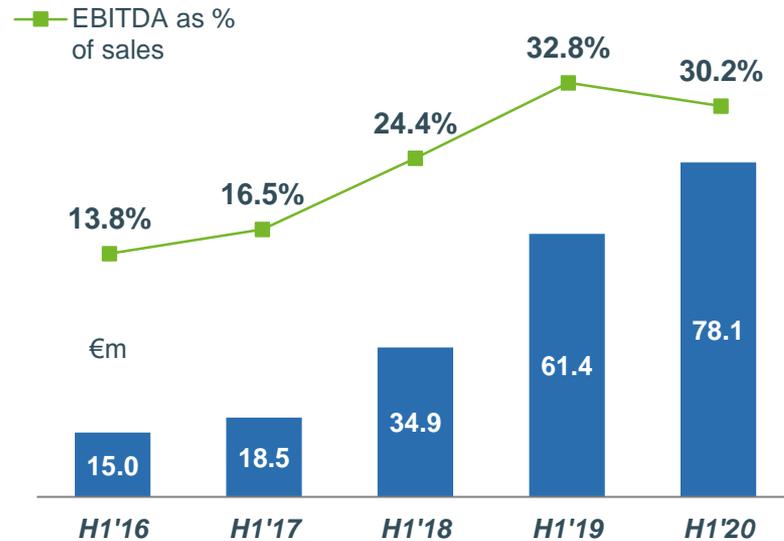
Net profit sharply up

<i>In €m</i>	H1'20	H1'19
Current operating income	51.3	41.6
Other operating income and expenses	1.8	(0.0)
Operating income	53.2	41.6
Net financial income/(expense)	(1.7)	(0.4)
Income tax	(9.9)	(5.2)
Net profit from continuing operations	41.6	35.9
Net profit / (loss) from discontinued operations	(0.0)	(3.3)
<hr/>		
Net profit (Group share)	41.5	32.6

- › **H1'20 other operating income** includes a gain on the disposal of an industrial site no longer in use
- › **H1'20 net financial loss** mainly includes:
 - The full impact of non cash financial interests related to OCEANES 2023 issued in June 2018
 - A foreign exchange gain of €2.1m
- › **H1'20 loss from discontinued operations** reduced to nearly zero
- › **H1'20 net profit sharply up (+28%)**

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Significant increase in EBITDA of the continuing operations (Electronics)



- › Half-year EBITDA increased more than 4x compared to H1'17
- › H1'20 EBITDA up 27% vs. H1'19
- › H1'20 EBITDA margin slightly down vs. H1'19, as anticipated
- › H1'20 EBITDA in line with FY'20 EBITDA margin guidance

Strong increase in operating cash-flow

Continuing operations operating cash-flows

In €m	H1'20	H1'19
Net profit	41.6	35.9
Depreciation and amortization	19.4	10.6
Other items	17.1	15.0
EBITDA	78.1	61.4
Change in working capital	(41.8)	(53.5)
Net cash generated by / (used in) operating activities	36.2	8.1

› Increase in D&A mainly results from continuous investments

› Other items include:

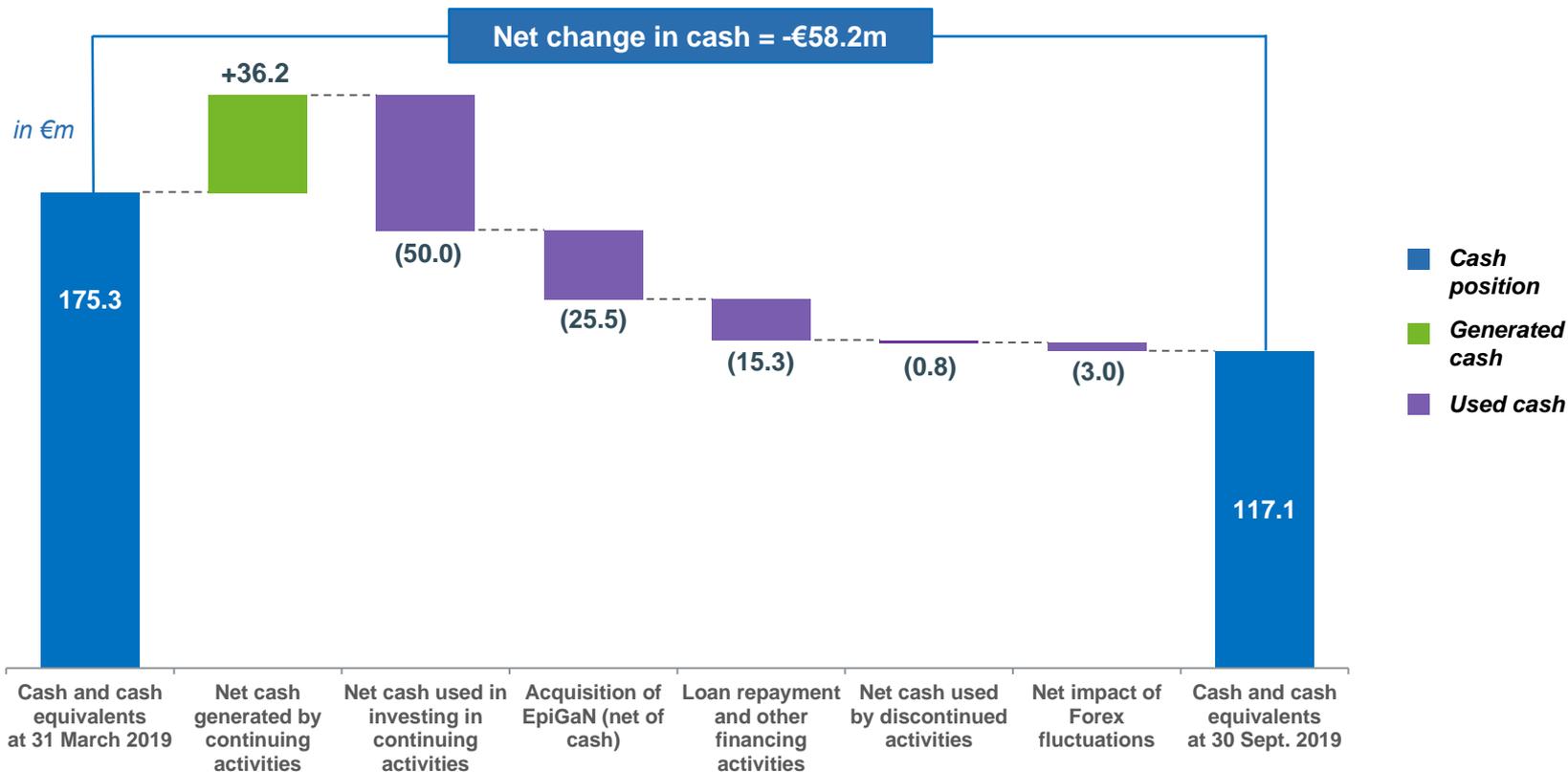
- Income on asset disposals
- Income tax
- Financial loss
- Share-based payments
- Other non-cash items (provisions)

› Increase in WCR due to:

- Higher level of activity
- €47.2m increase in inventories reflecting anticipated H2'20 deliveries
- Despite €20.8m decrease in trade receivables

› Strong increase in cash generated by operating activities

Decrease in cash position reflects high level of capex and EpiGaN acquisition



A sound balance sheet

<i>In €m</i>	30 Sept. 2019	31 March 2019	<i>In €m</i>	30 Sept. 2019	31 March 2019
Intangible assets	75.1	38.5			
Tangible assets	287.4	253.6			
Non-current financial assets	11.8	11.0			
Other non current assets	24.0	44.3			
Deferred tax assets	24.6	25.6			
Total non-current assets	422.9	373.0	Total equity	452.3	398.3
Current assets	307.8	257.5	Long-term financial debt	195.7	199.2
Cash and cash equivalents	117.1	175.3	Provisions and other non-current liabilities	30.4	21.4
Total current assets	424.9	432.8	Total non-current liabilities	226.1	220.6
Assets held for sale and discontinued	16.3	16.7	Current liabilities	156.9	174.8
Total assets	864.0	822.5	Short-term financial debt	23.6	22.6
			Total current liabilities	180.5	197.4
			Liabilities from discontinued operations	5.0	6.2
			Total liabilities and equity	864.0	822.5

A solid financial structure

Shareholders' equity
€m



Gross debt
€m



Cash and cash equivalents
€m



Net debt
€m



- › **Equity reinforced by €54m:**
 - Mainly thanks to retained H1'20 earnings
- › **Gross debt decreased by €3m:**
 - €10m decrease in drawings on credit lines
 - New leasing contracts
 - €3m put option granted to the minority shareholders of EpiGaN
- › **Decrease in cash position reflects:**
 - Cash used to finance capex and EpiGaN acquisition
- › **Net debt / Equity ratio: 22.6%**



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FY'20 guidance (2019/2020 fiscal year)

- Soitec confirms expecting FY'20 sales to grow by around 30% at constant exchange rates and perimeter
- Soitec confirms expecting and Electronics EBITDA margin to reach around 30%
- Soitec now expects FY'20 capital expenditure to reach around 110 M€ (vs. 130 M€ previously indicated)

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Soitec and its markets

Soitec – Who we are

DESIGNER & MANUFACTURER OF INNOVATIVE SEMICONDUCTOR MATERIALS



OUR MISSION

“ To be recognized as a leader in innovative semiconductor standards for products shaping the future ”



1,450

Employees Worldwide
GLOBAL PRESENCE

4

High-growth Markets

SMARTPHONES, AUTOMOTIVE, CLOUD & INFRASTRUCTURE, IOT

2

Unique Technologies

SMART CUT, SMART STACKING

Core expertise

Epitaxy, Compound semiconductors

6

Wafer fabs

300-mm – France (Bernin II) + Singapore*
200-mm – France (Bernin I) + China (via Simgui)
150 mm – France (Bernin III)
150 – 200-mm GaN Epitaxial wafers – Belgium (EpiGaN)
CAPABILITY

1

Largest manufacturer of engineered substrates
LEADER

Soitec at a glance



2019

Acquisition of EpiGaN for 5G RF, power electronics, and sensor applications



2018

First 300-mm wafers being shipped to RF-SOI/ FD-SOI customers from Singapore



2017

Back to profitable Results
Long-term supply agreement signed with GF



2015-16

Reinforce core semiconductor business
& Return to profitability



2014

Manufacturing Partner in China – 200-mm



2008

Singapore Fab 300-mm



2002

Bernin II Fab 300-mm



1999

Bernin I Fab 100/200-mm



1992

Soitec foundation



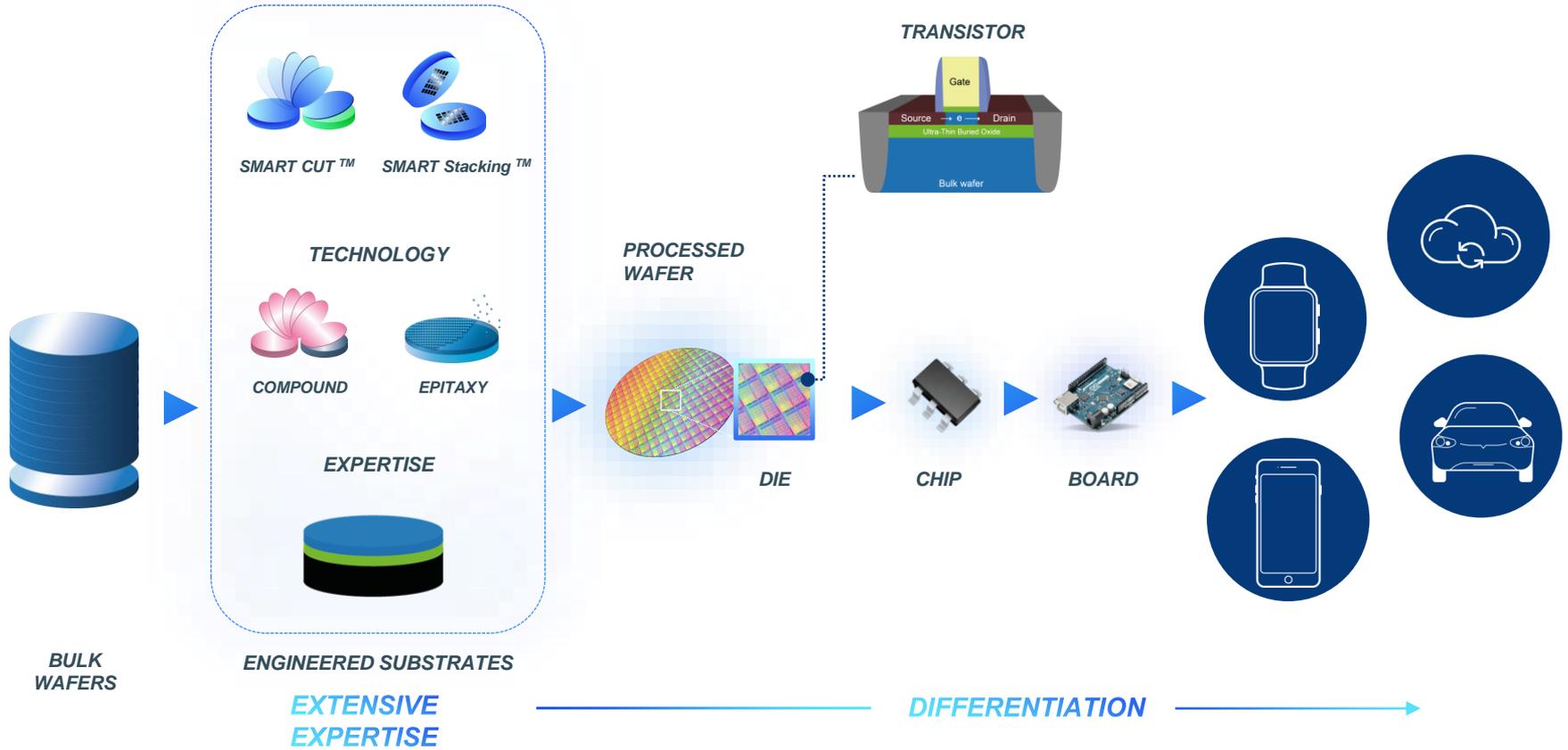
1991

Smart Cut™
Invention

- › Revenue: €444m in 2018-2019
- › Stock Exchange: Euronext since 1999
- › Employees: 1,450 worldwide, +20 nationalities
- › Patent portfolio: >3,500
- › R&D spending: 12% of annual revenue

- › Worldwide leader in engineered substrates
- › Capacity:
 - 150-mm – Planned capacity: 400K wafers/y.
 - 200-mm – Up to 1.3M wafers/y.
 - 300-mm – 0,9M wafers/y.
- › Business model: wafers manufacturing + licensing

A unique competitive position in the value chain



Our pillars to build a unique competitive position



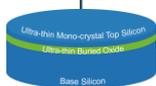
A global multi-site industrial footprint



A broad product portfolio of engineered substrates

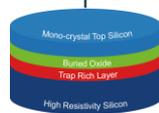
PROCESSOR & CONNECTIVITY SOC

FD-SOI
For power-efficient integration of digital/analog/RF



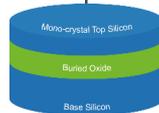
RF FRONT-END MODULE

RF-SOI
For highly efficient mobile communication



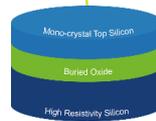
POWER

Power-SOI
For high voltage device integration



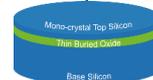
PHOTONICS

Photonics-SOI
For high perf. photonics device integration into silicon



IMAGERS

Imager-SOI
For improved imager performance in NIR



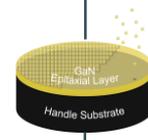
PIEZO-ON-INSULATOR

POI
For high performance 5G filters



GaN

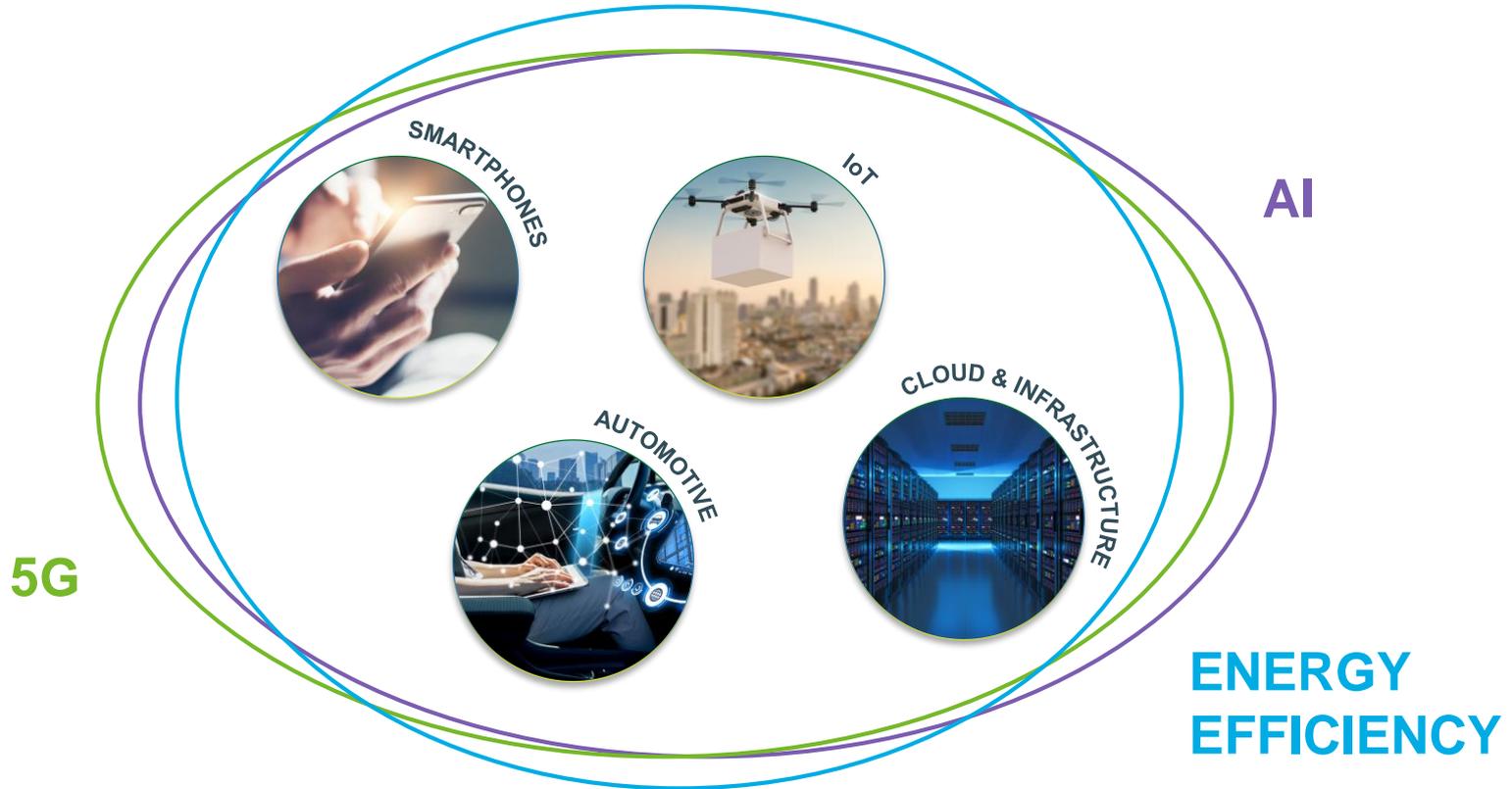
GaN
For radio frequency (RF) 5G and power systems



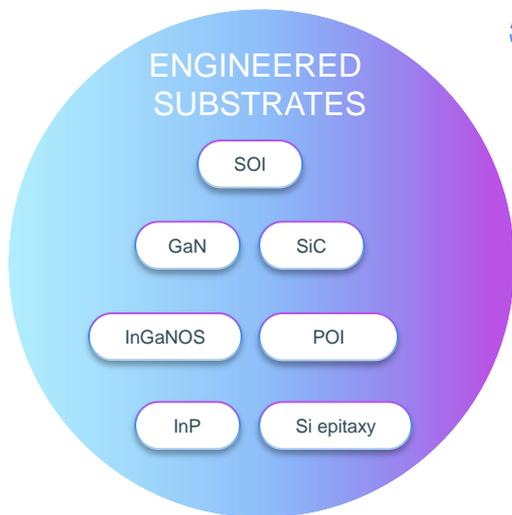
Silicon-On-Insulator products

Piezo & compound products

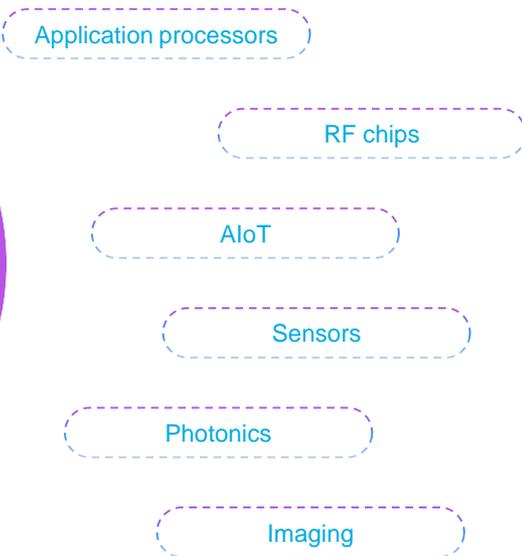
4 key markets & three mega-trends driving semi. growth



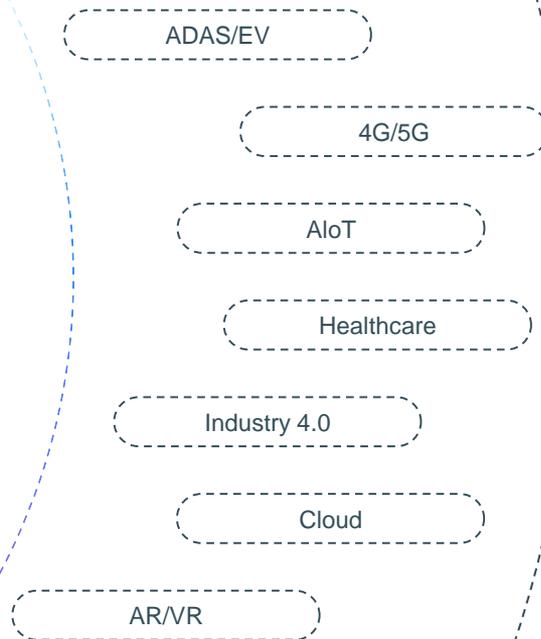
The engineered substrates market is growing into a multi-billion \$ market



SEMICONDUCTOR CHIPS



ELECTRONIC DEVICES



Today's engineered substrate content in 4 strategic end-markets

TODAY



SMARTPHONES



IoT
Internet of Things



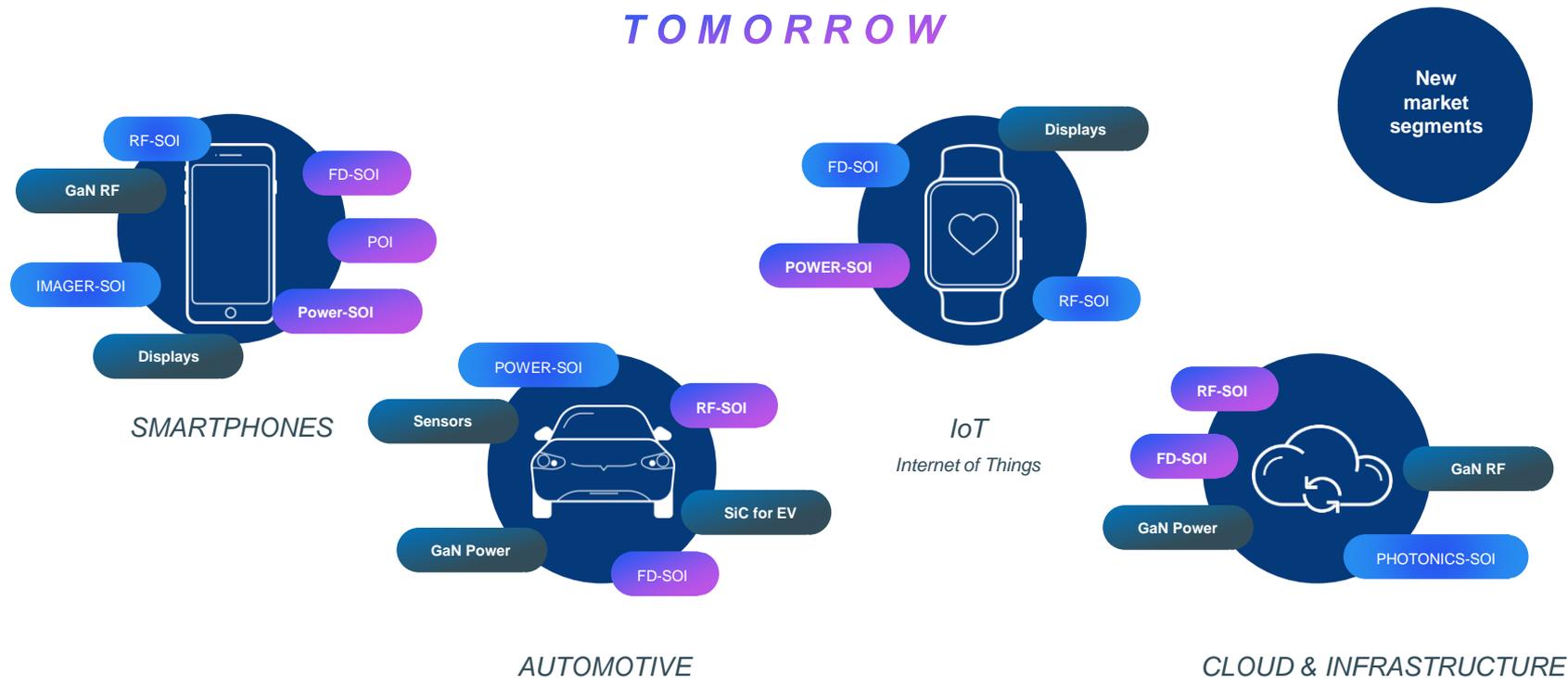
AUTOMOTIVE



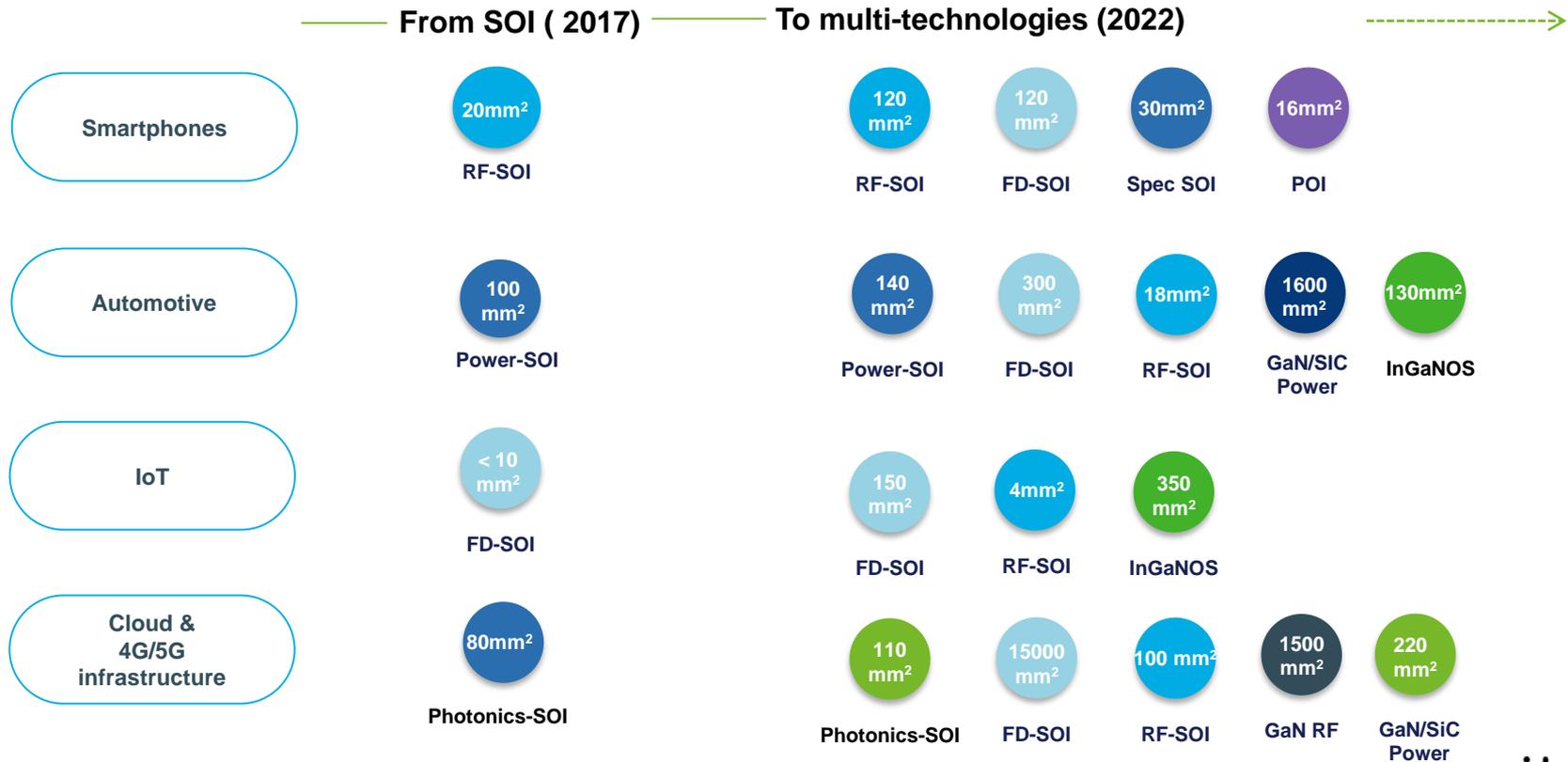
CLOUD & INFRASTRUCTURE

Expected content growth across markets and applications

TOMORROW



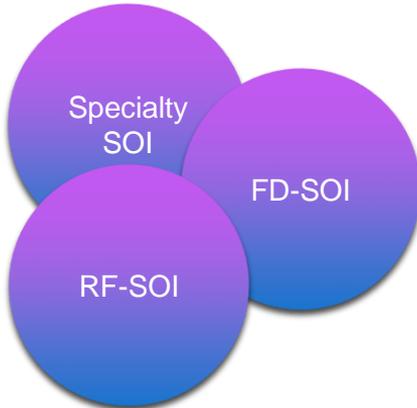
Soitec technologies content



Expansion of our leadership in multiple markets

FY24 SAM*
~1.6-2.4 Billion \$
4G/5G – Auto – IoT – Cloud

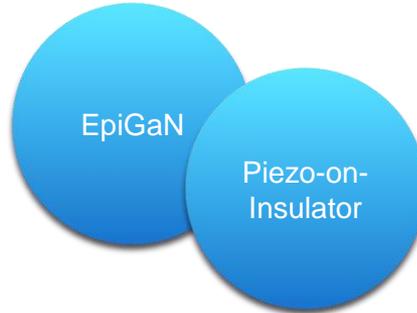
SOI products portfolio



CAGR ~15-25% between FY19-24

New products:
> 500 M\$ SAM* in FY24
5G – Auto – Sensors

Beyond SOI – POI & GaN



New opportunities:
>1 Billion \$ SAM*
Displays – Auto – Imaging...

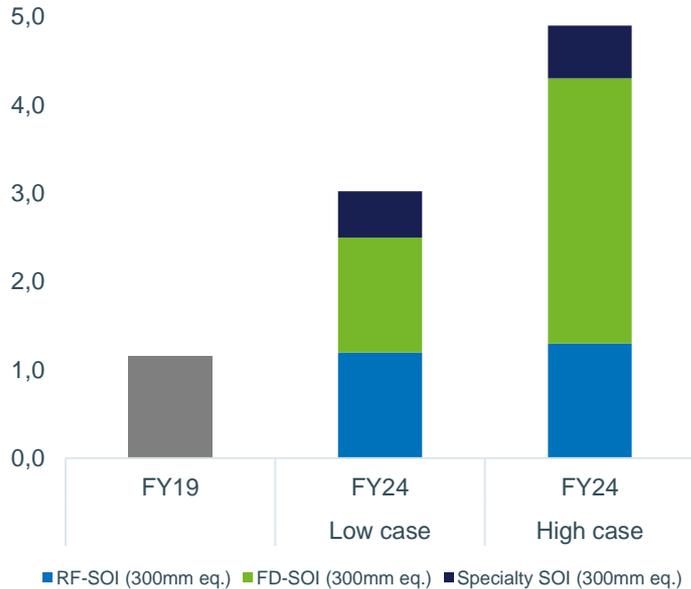
Compounds semi.



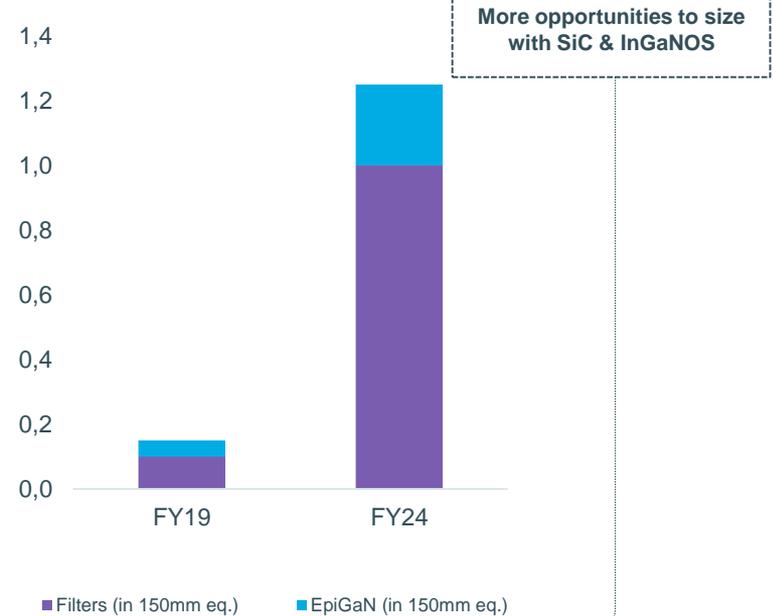
* Source: Soitec market estimates in FY24

Profitable growth with many opportunities

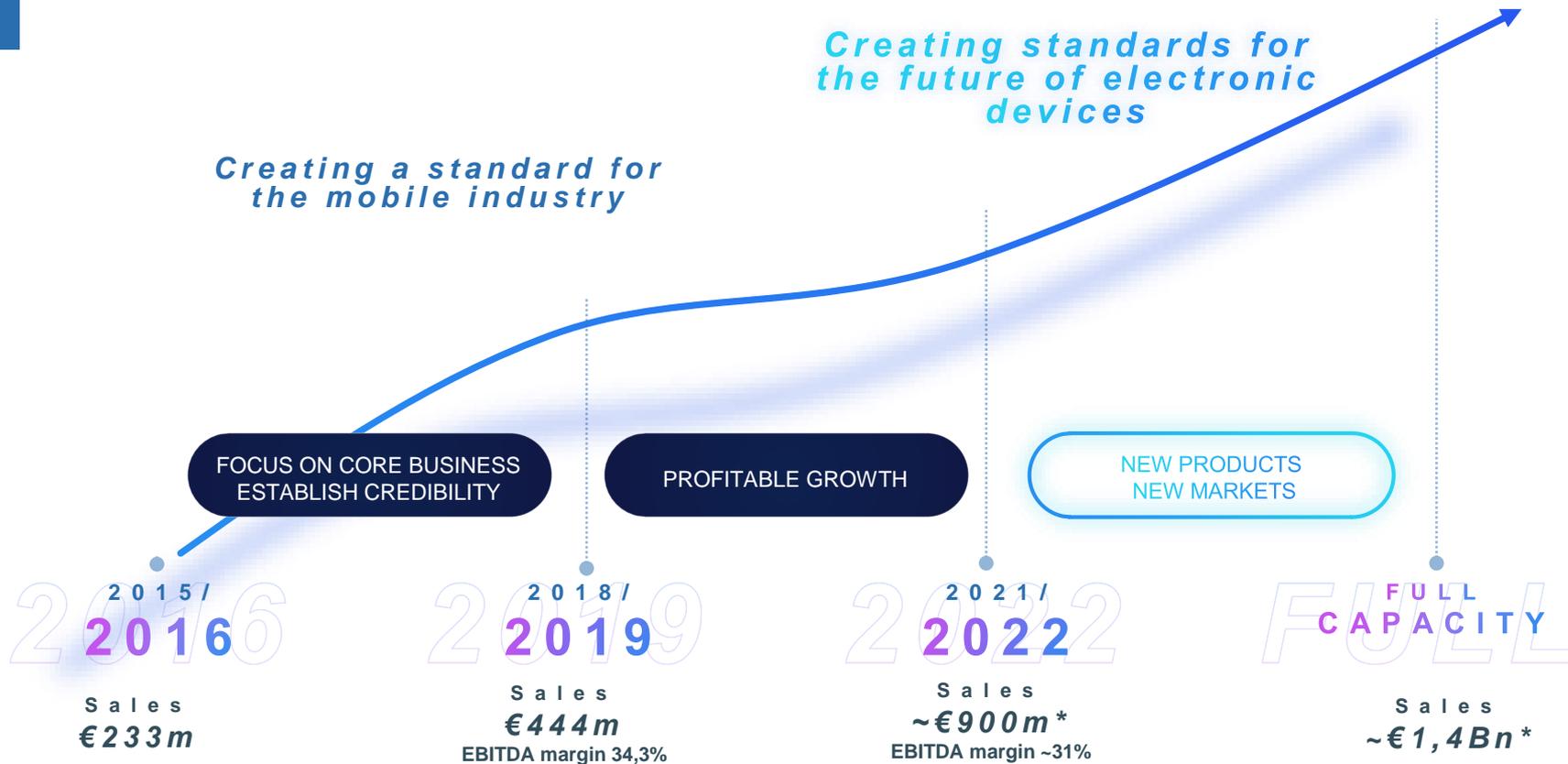
SOI products SAM (M wafers eq. 300 mm)
+ 20% to +30% CAGR between FY19 and FY24



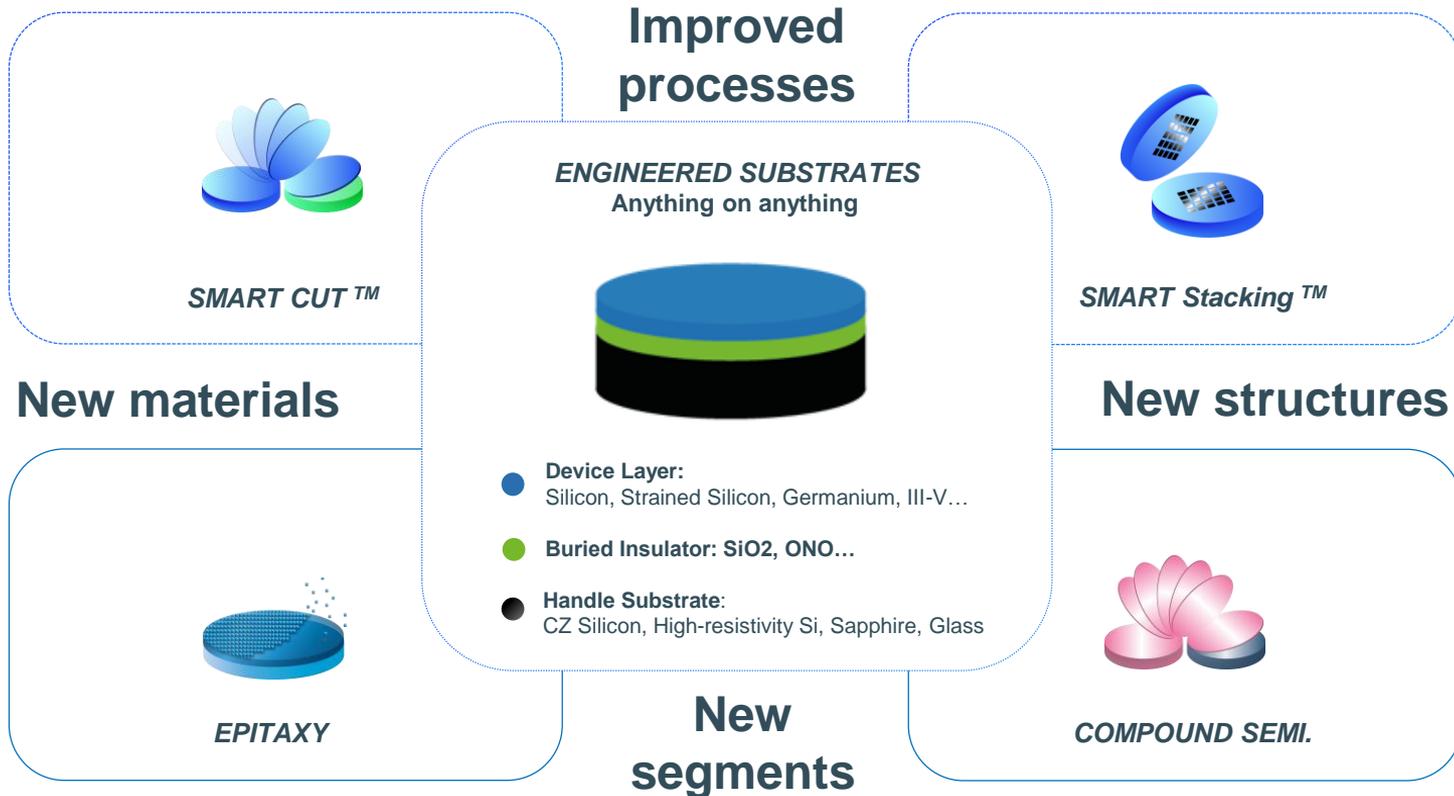
New products SAM (M wafers eq. 150 mm)
>1M wafers in FY24



A solid growth path



New substrate technologies

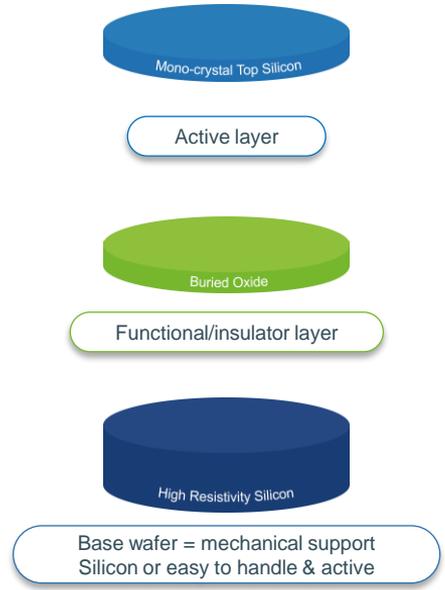
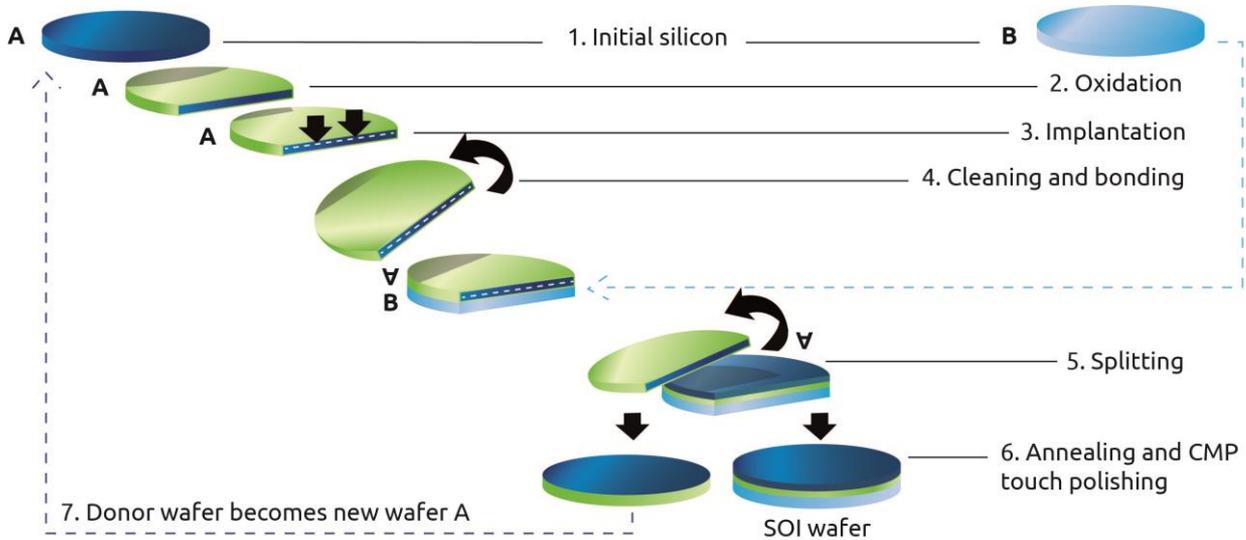


Revolutionary Smart Cut™ – a mature technology

TECHNOLOGY

Industrial manufacturability of SOI – high yield
 Drastical improvement of uniformity & quality

Re-use of donor wafer increases cost efficiency
 Flexibility of material integration



Product portfolio: tailored to meet market growth

Production

RF Front-End Module
RF-SOI
For highly efficient mobile communication



Cellular – Wifi – V2X

Power
Power-SOI
For high voltage device integration



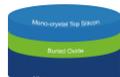
IVN – audio – gate Driver

Processor & connectivity SoC
FD-SOI
High Reliable - Power-efficient - Digital computing with easy analog/RF integration



μ controller – processors – radar 77GHz

Photonics
Photonics-SOI
To integrate high performance photonics devices into silicon



Today in data center

Imagers
Imager-SOI
For improved imager performance in NIR



Today in smartphones

Piezo-on-insulator
POI
New engineered substrates for filters



Ramp in 2019 in smartphones

GaN
GaN
For radio frequency (RF) 5G and power systems



Ramp in 2020 for 5G NR

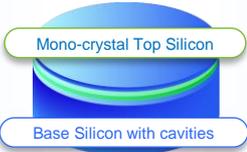
R&D

μ LED
InGaNOS
Bright low power LED - RGB



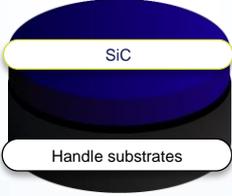
Display – AR/VR

MEMS
Cavity-SOI
High performance sensors



Ultrasonic - sensors

SiC Power
Compounds, etc...
High performance devices



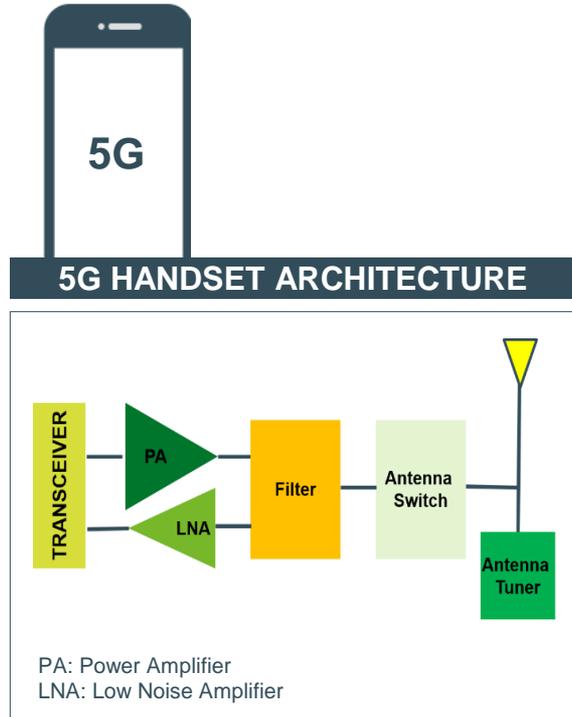
EV - industrial

Back-end integration
Compounds, etc...
High performance devices



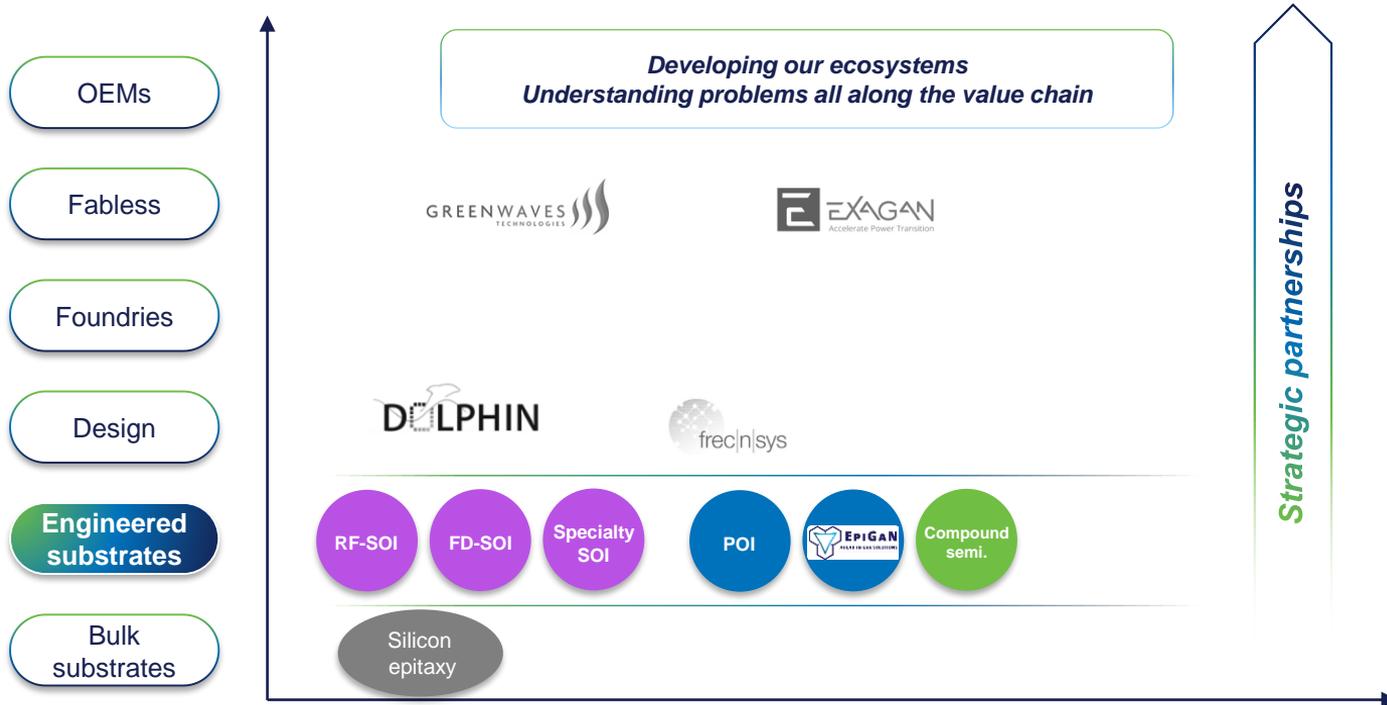
System-in-package

A complete product portfolio for handsets & base station communication



	TRANSCEIVER < 6GHz	TRANSCEIVER mmW	PA < 6GHz	PA mmW	LNA	Filter	Antenna Switch	Antenna Tuner
RF-SOI		✓	✓	✓	✓		✓	✓
FD-SOI	✓	✓		✓	✓		✓	
POI						✓		
GaN				✓	✓		✓	

Expanding our leadership in engineered substrates





Trends & markets

AI is about transforming data into meaningful information

AI Everywhere



Classification



Object detection



Speech detection



Data analysis

Key drivers

Latency / reliability



Data privacy



Power consumption



Cost



AI Computing trend

Cloud computing



Edge computing



On-Device AI

Smartphones

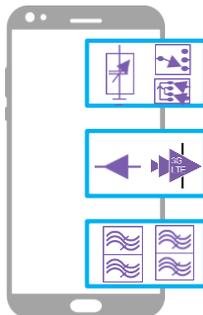
4G fueling current growth Beginning of 5G deployment



4G



5G



RF-SOI
for RF FEM

FD-SOI
for 5G mmW
Transceivers

POI
for RF Filters

GaN
for 5G PA

FD-SOI value proposition recognized for several critical applications

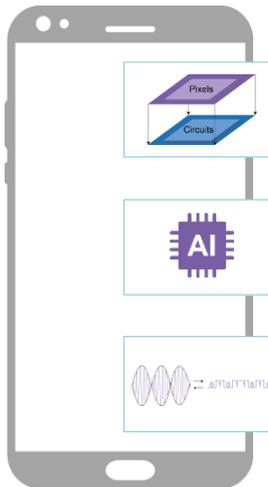


Image signal
processors

Artificial
intelligence
system-on-chips

mmW short
distance
communication

3D image sensors for facial recognition and AR/VR. High res displays



Facial recognition

**Imager-SOI &
Compound** for
face facing 3D sensor

InGaNOS for MicroLED
of functional display
FD-SOI for display
driver IC



Free form-factor display

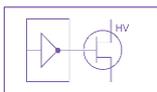


Position & object recognition

**Imager-SOI &
Compound** for
world facing 3D sensor

Automotive

GaN, SiC and Power-SOI to benefit from structural semi content increase



Power-SOI/GaN
for gate drivers



Power-SOI for
Class D audio
amplifiers



Power-SOI
for in-vehicle
networking



SiC, GaN
for On-Board
Chargers

FD-SOI to ramp for ADAS and infotainment application processors



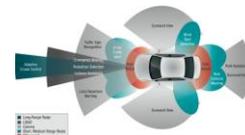
FD-SOI for ASICs
of radars/Lidar/Camera
FD-SOI for MCU's
for various functions

FD-SOI for AI chips
of image
classification &
voice recognition



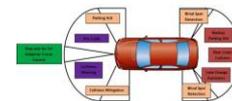
FD-SOI for
Multimedia
application
processors

Engineered substrates for high sensitive sensor and bright display



Imager/Photonics-SOI
for Lidar sensor

FD-SOI for Radar
sensor FEM



MicroLED using InGaNOs
for In-vehicle
display

FD-SOI offers low power operation for industrial & consumer applications



GPS for



Ear buds



Smarthome



Drones



Security cameras



Smart meters

Together with 5G, **FD-SOI** & **InGaNOs** enable AR/VR/MR applications



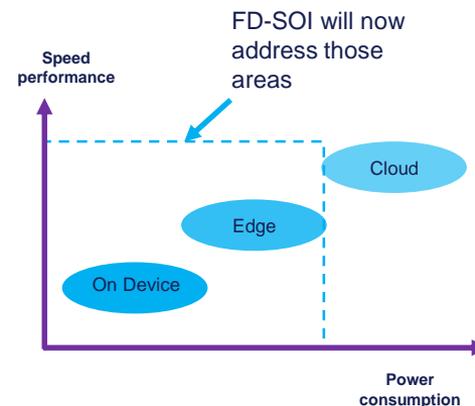
FD-SOI for ASICs of AR/VR/MR

InGaNOs for MicroLED display of AR/VR & Smartwatch



FD-SOI for IoT (MCU+Memory +RF)

FD-SOI offers the best value proposition for edge- AI computing



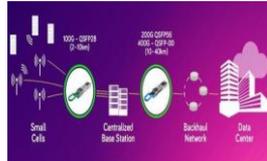
Cloud & 4G/5G infrastructure

Photonics-SOI for high data rate and low latency for 4G/5G base station & data center



Photonics-SOI for optical transceiver of data center

Photonics-SOI for optical transceiver of 5G infrastructure



RF-SOI, FD-SOI, GaN, SiC for 5G base station & data center



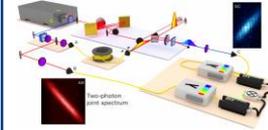
GaN, SiC for data center power supplier of hyper computing

GaN for power amplifier of 5G basestation



RF-SOI and FD-SOI for 5G basestation

FD-SOI, Photonics-SOI, GaN for hyper scale & secure computing



Photonics-SOI for quantum computing

FD-SOI for high efficient hyper computing of data center, crypto-currency mining



FD-SOI for broadband communications in Low Earth Orbit (LEO) satellites



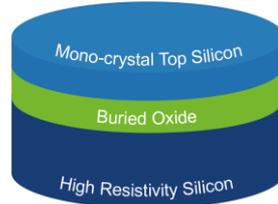
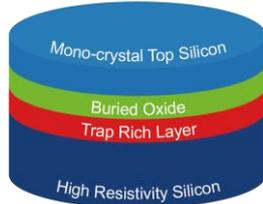
Soitec products



RF-SOI

RF-SOI: an industry standard for Front-End Module (FEM)

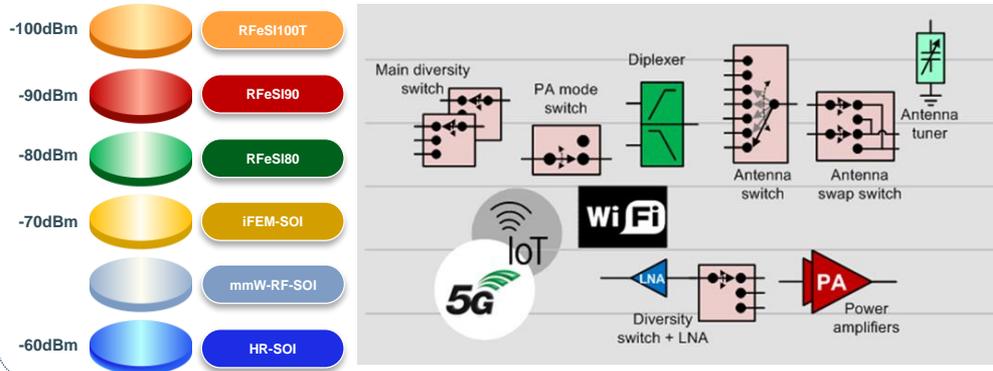
Product description



200
mm

300
mm

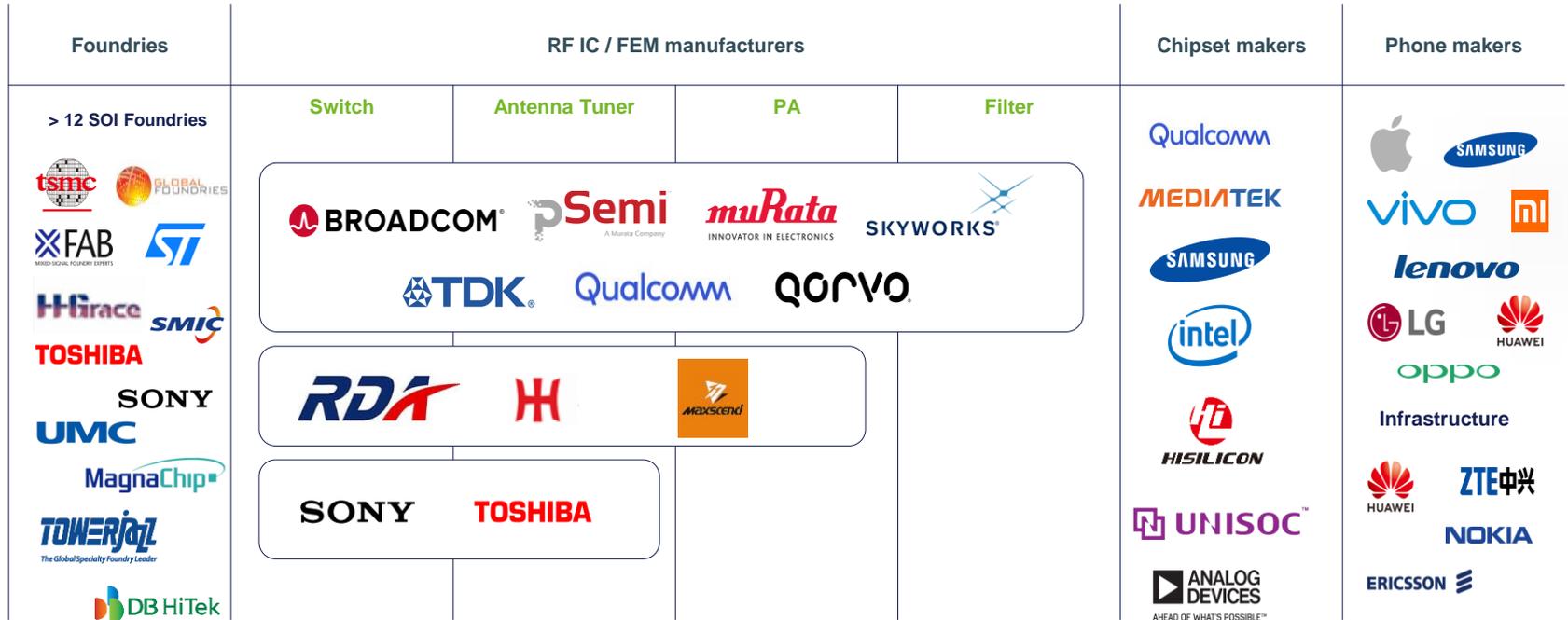
A solid product roadmap to cover all RF FEM components



Value proposition

- > RF-SOI is present in 100% of smartphones
- > RF-SOI is a standard for RF FEM components (antenna tuners, switches, LNAs, PAs)
- > RF-SOI is a unique platform for FEM integration
- > RF-SOI provides inherent isolation and signal integrity for LTE and 5G
- > Best in class performance per cost

Soitec leveraging RF ecosystem





FD-SOI

Soitec FD-SOI: Versatile platform to connect the unconnected

Early adopters

	Nodes	RF	eMRAM
SAMSUNG	28nm 18nm		
GLOBALFOUNDRIES	22nm 12nm		
ST	28nm		
RENESAS	65nm		



Customer requirements

5G Networks

Wide bandwidth
RF / Digital integration

Automotive

Reliability
High-voltage integration

Mobile

Manufacturability
Low (energy) leakage

Edge AI

Performance computing
reconfigurability

IoT

Cost efficiency
Battery efficiency

FD-SOI success factors

Integration

Reduced components
Seamless packaging

Size

Thick RF metal
Planar Beyond 28nm

Manufacturing

Large volume (300mm)
Fewer mask layers

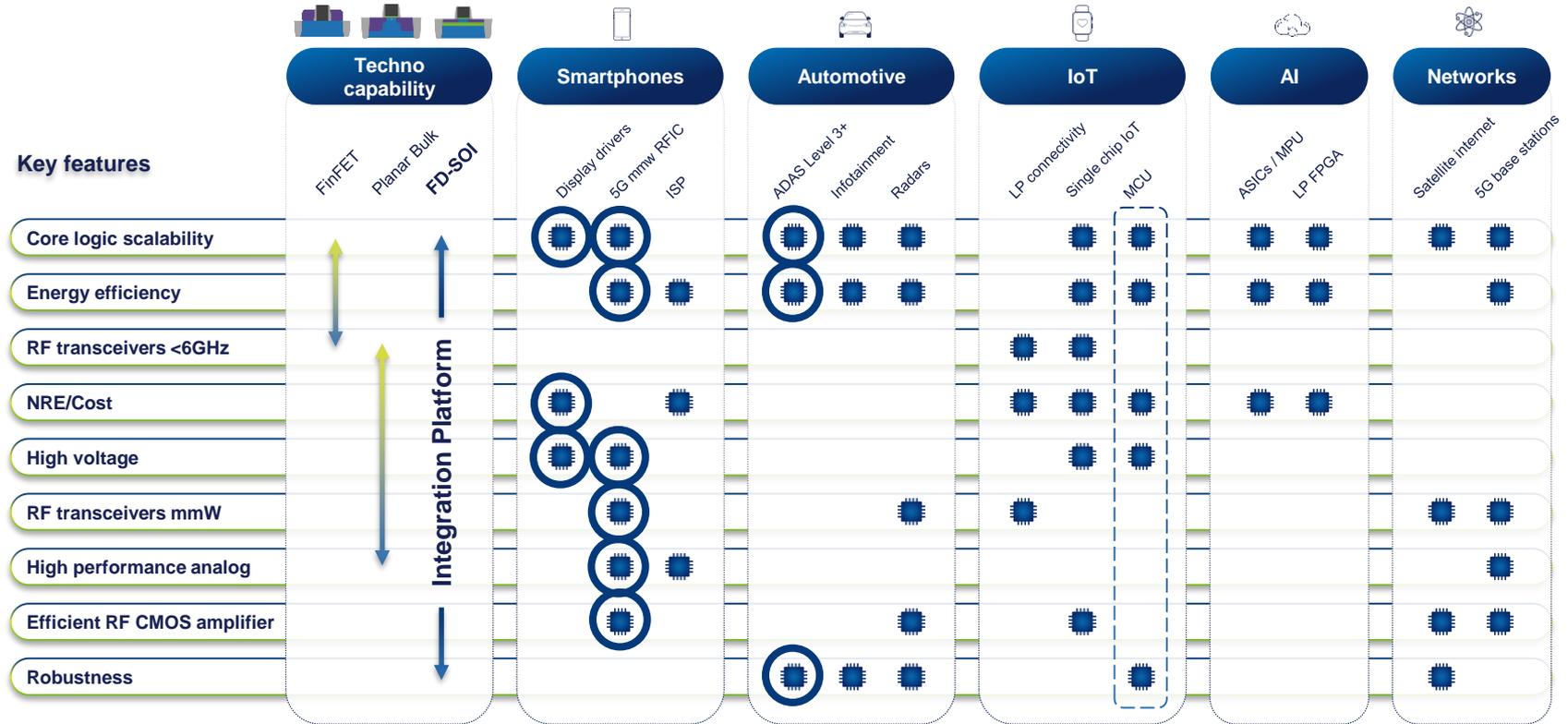
Robustness

Less (digital) errors
Error (Body-Bias) tuning

Opportunities

AI-Aware Design
All-in-One platform Sol'n

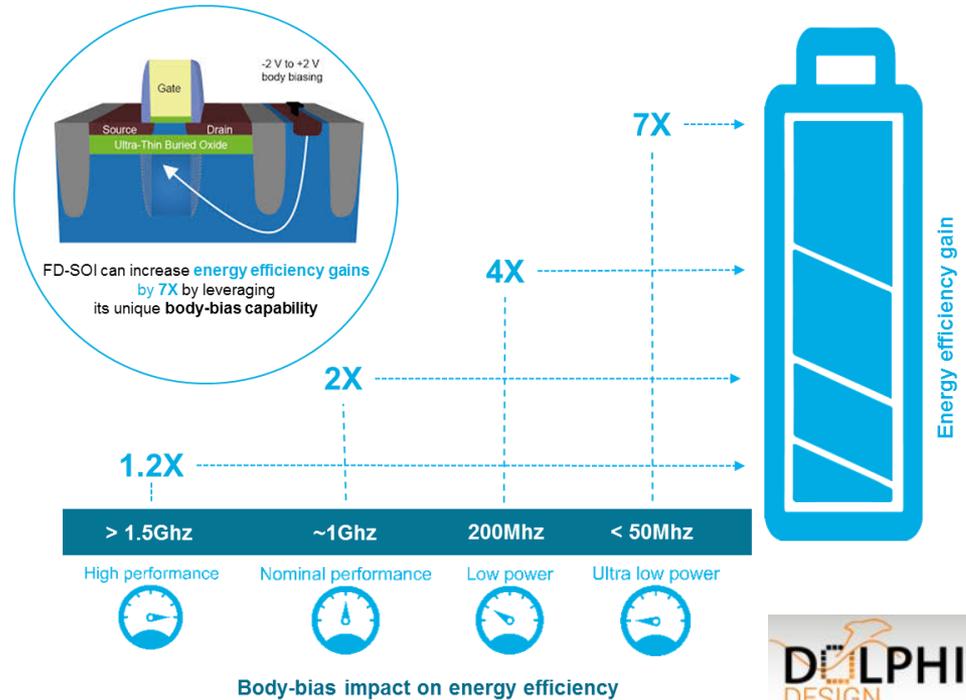
FD-SOI: best trade-off to integrate Digital/Analog/RF...



FD-SOI body bias: leveraging substrate architecture to enable transistor performance on-demand

- Dolphin Design providing IP solution to fables to master power management

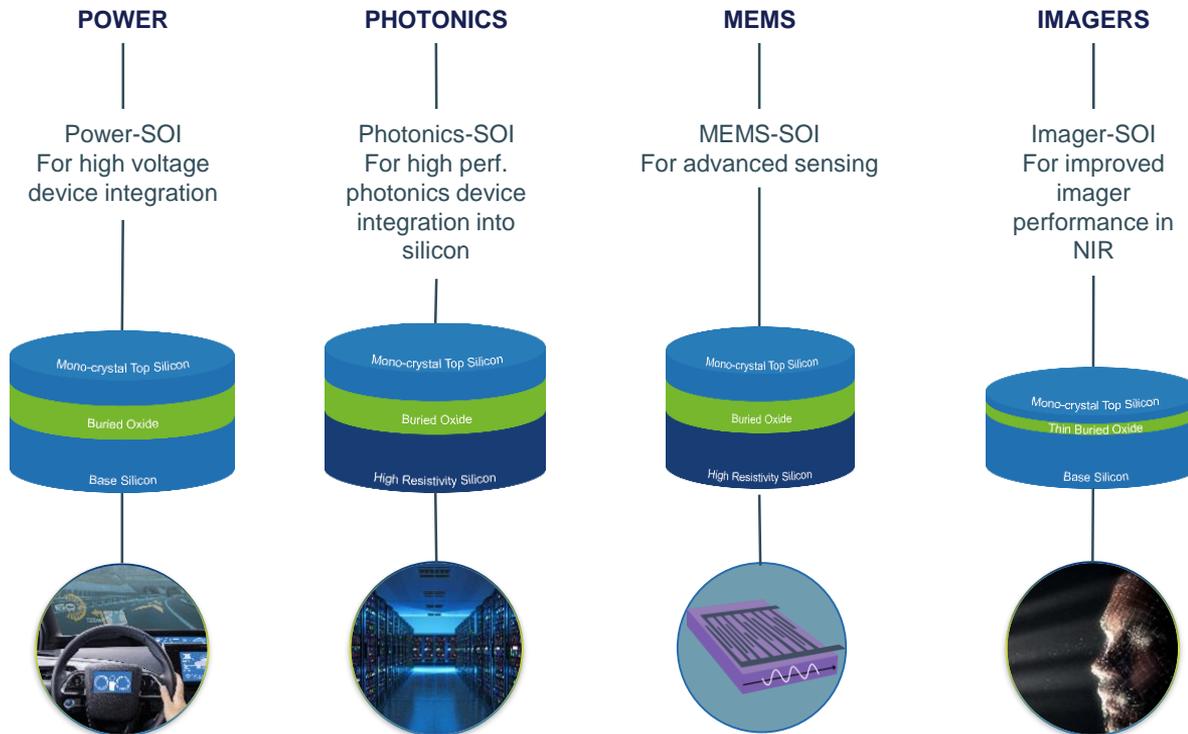
- FD-SOI body biasing deployed as main pillar





Specialty-SOI

Specialty-SOI products



Specialty-SOI: Power-SOI

Product description

200 mm

300 mm

Value proposition

HIGH RELIABILITY

PERFORMANCE

- > Excellent electrical isolation
- > Higher temperature operation
- > Multiple voltage domain integration (digital/analog/high voltage)
- > Ease of design for IC protection

COST

- > Smaller die size

Automotive



Industrial



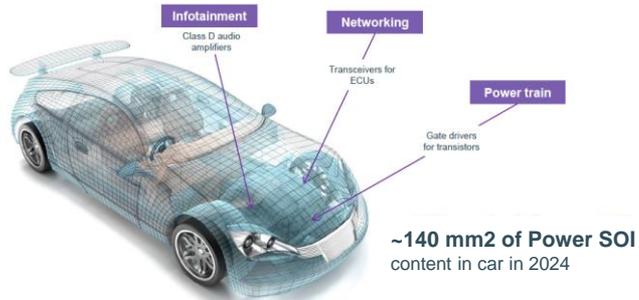
Consumer



Growth drivers & outlook

Power-SOI footprint expected to rise further in automotive

- > In-Vehicle Networking
- > Infotainment
- > Power train



Power-SOI SAM in FY24
~900 k wafers (200 mm eq.)

Specialty-SOI: Photonics-SOI

Product description

200 mm

300 mm

Value proposition

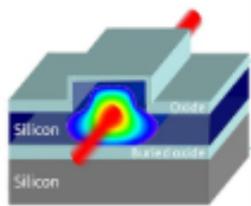
Integration platform for complex optical function using CMOS fab

High speed modulation compliant

Low loss wave guide

Scalable solution for:

- > Integration
- > Performance
- > Cost



Datacenters



5G



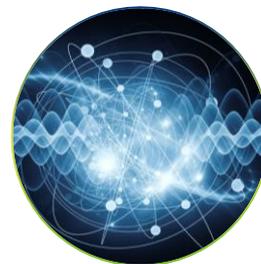
High-performance Computing



Ecosystem & TAM

Silicon photonics growth drivers:

- > Data center traffic
- > Optical transceivers for data rate $\geq 100\text{G/s}$
- > Optical chip-to-chip interconnect
- > Quantum computing



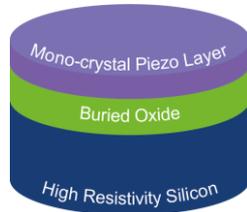
Photonics-SOI SAM in FY24
~100 k wafers (300 mm)



Piezo-electric-on-Insulator (POI)

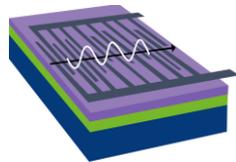
Piezo-On-Insulator to enable new generation of filters

Product description



POI:

Thin piezo layer on oxide on high resistivity silicon



Enable manufacturing of high performance surface acoustic wave (SAW) filters

Growth drivers & market outlook

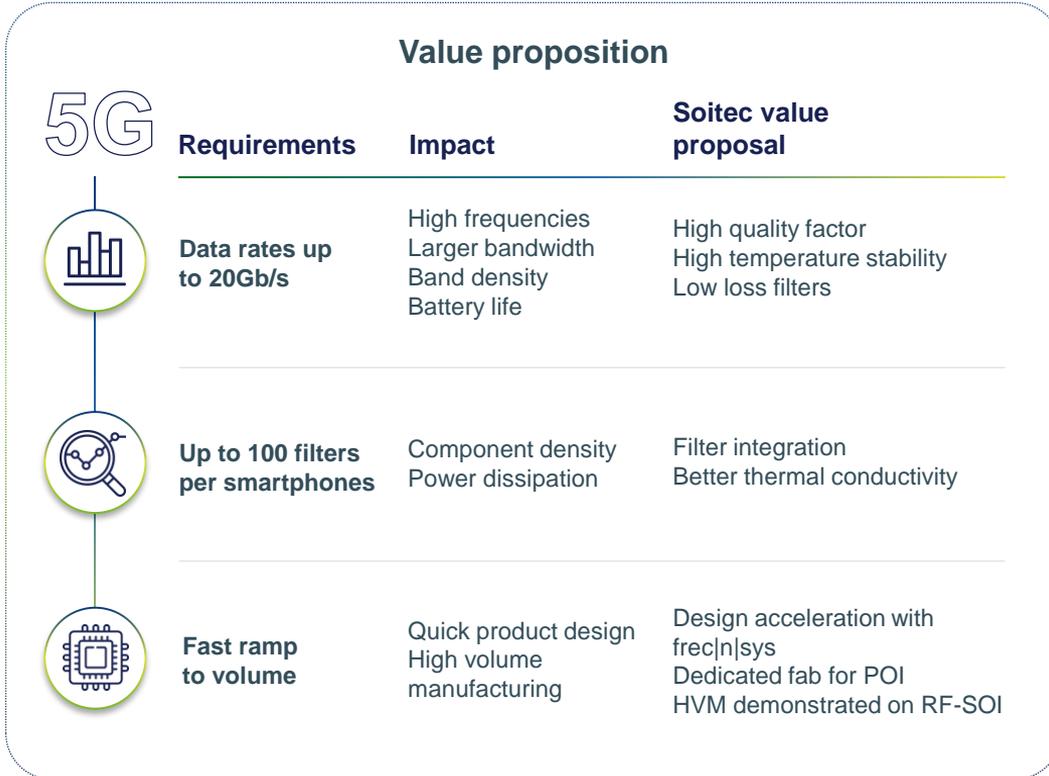
Among all RF devices, **filters** will:

- > grow the fastest with **~15-20% CAGR** till 2022
- > account for **~60%** of the overall RF component market



Source: Yole, Bernstein estimates and analysis

Piezo-On-Insulator enabling new generation of filters



Filters competitive environment

	SOITEC POI	SAW	TC SAW	BAW
High quality factor	✓	✗	✗	✓
High temperature stability	✓	✗	✓	✗
Low loss filters	✓	✗	✗	✓
High frequencies	=	✗	✗	✓
Efficient same die integration	✓	=	=	✗
Cost	=	✓	✓	✗

Several product qualifications ongoing

POI SAM in FY24 ~1 Million wafers (150 mm)



 EpiGaN

External growth strategy: expand core business

May, 2019 - Soitec acquires EpiGaN to accelerate engineered substrates penetration in booming 5G and Power markets

EpiGaN at a glance

- Start-up founded in 2010 as a spin-off from IMEC
- Widely recognized for its strong expertise in GaN for several years
- Technology ready and optimized for 5G broadband network applications



Strategic rationale

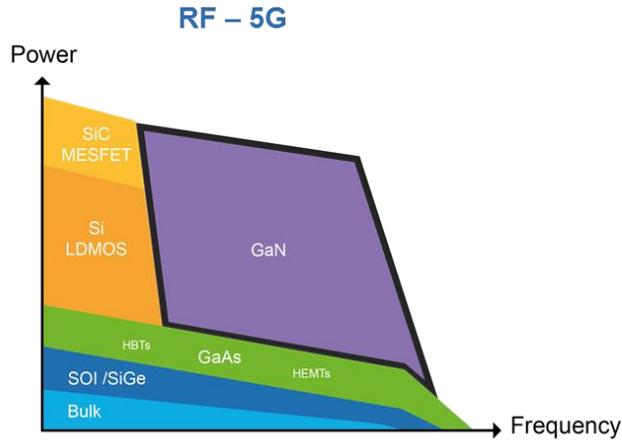
- Creation of a unique and comprehensive offering for 5G
- Similar market and RF customer base
- Expansion of Soitec's product portfolio beyond silicon (SOI) into Gallium Nitride (GaN) technology

Outlook

- EpiGaN is now integrated as one of Soitec's business units
- Focus on 5G application initially



GaN epi wafers: leading technology for 5G



Source: Figure adapted from Analog Device 2017

- > Cellular base stations (>5W power amplifier)
GaN - becoming mainstream for **4G / 5G <6Ghz and mmW**
- > Cellular handset (<3W Power amplifier)
GaAs – Mainstream technology for **4G / 5G <6Ghz**
GaN – advantage for **5G mmW**

Market outlook



EpiGaN SAM in FY24
~300 k wafers (150mm eq.)

Future opportunities on power automotive & sensors



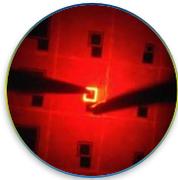


InGaNOS

InGaNOS – A new approach with engineered substrates for a huge display market

Technology

Proven technology for InGaN red LEDs



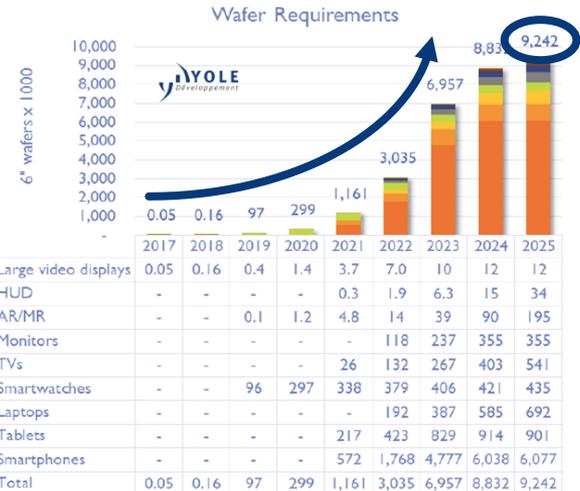
50x50 μm² red microLED fabricated on Soitec substrate

Value proposition

- › Better red efficiency at micrometer-scale than phosphide
- › Same InGaN material for blue, green and red LEDs
- › Technology scalable to 200 mm

Wafer volume projection

InGaNOS TAM in FY24
>4 Million wafers (150 mm)

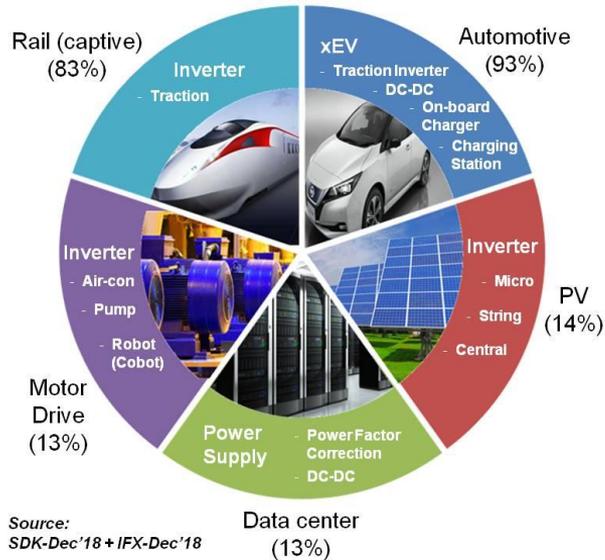




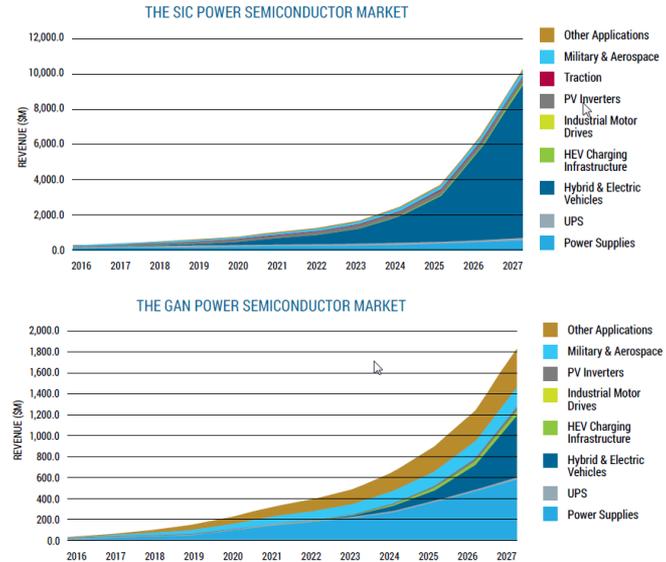
Silicon-Carbide (SiC)

Exponential growth in high voltage power applications

High growth applications (CAGR – '17~'25)



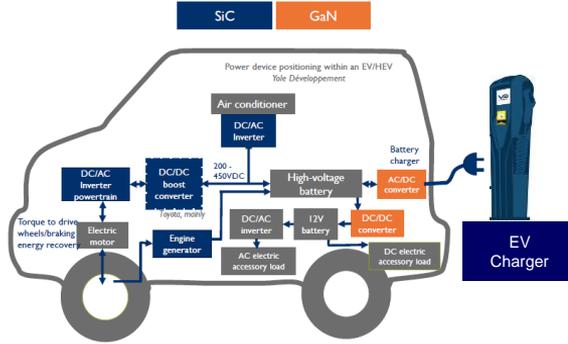
SiC and GaN Power semiconductor forecast



Source: IHS Markit'18

Electrical vehicle - First mass market for SiC

Positioning of SiC and GaN in xEV



Source: Yole - PowerSiC'17

Potential of SiC to replace Silicon in xEV



Source: Rohm - BodoPowerSystems'17

SiC vs. Silicon

Performance improvement and size reduction in inverter



200 kW Inverter Si-Based

200 kW Inverter Utilizing SiC

From Si-IGBT based module to SiC MOSFET based module:

- miniaturization: **30%**
- weight Reduction: **40%**
- high power density: **>1.5times**

Extra 60 miles of cruising range!

Source: Rohm

Thank you

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