

# AUTOMOTIVE & INDUSTRIAL

October 2023

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This document is provided by Soitec (the "Company") for information purposes only.

The Company's business operations and financial position are described in the Company's 2022-2023 Universal Registration Document (which notably includes the 2022- 2023 Annual Financial Report) which was filed on June 14, 2023 with the French stock market authority (Autorité des Marchés Financiers, or AMF) under number D.23-0482. The French version of the 2022-2023 Universal Registration Document and its English courtesy translation for information purposes are available for consultation on the Company's website (www.soitec.com), in the section Company - Investors - Financial Reports.

This document contains summary information and should be read in conjunction with the 2022-2023 Universal Registration Document.

This document contains certain forward-looking statements concerning Soitec. In some cases, you can identify these forward-looking statements by forward-looking words, such as "estimate", "expect", "anticipate", "project", "plan", "intend", "objective", "believe", "forecast", "guidance", "outlook", "foresee", "likely", "may", "should", "goal", "target", "might", "will", "could", "predict", "continue", "convinced" and "confident," the negative or plural of these words and other comparable terminology. These forward-looking statements include, but are not limited to, predictions of the Company's future prospects. activities, operations, direction, performance, results and strategy of Soitec 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 occurrence of any of the risks identified by the Company and described in Chapter 2.1 (Risk factors and controls mechanism) of the Company's 2022-2023 Universal Registration Document may have an impact on these forward-looking statements.

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.

Due to rounding, the sum of values presented in this presentation may differ from totals as reported. Such differences are not material.

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Neither the Company nor any other person intends to conduct a public offering of the Company's securities in the United States.







# AGENDA

#01 SOITEC AT A GLANCE

#02
AUTOMOTIVE
& INDUSTRIAL

#03
SMARTSiC<sup>TM</sup>
ADOPTION



# SOITEC AT A GLANCE

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# SOITEC HAS BUILT A UNIQUE POSITION IN THE VALUE CHAIN

# BUILDING CUSTOMER INTIMACY TO MAKE OUR PRODUCTS A STANDARD AND BECOME A REFERENCE



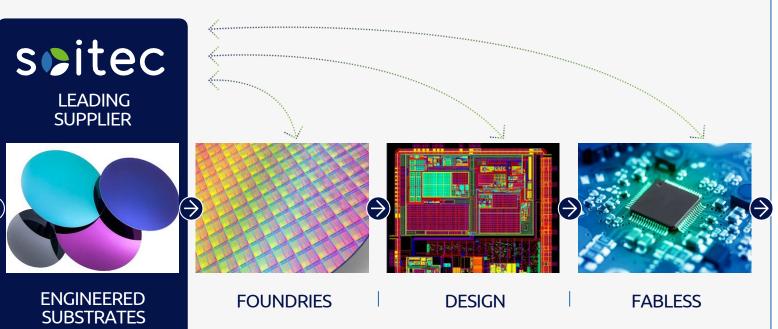
**EQUIPMENT** 



**BULK MATERIALS** 



**UTILITIES** 





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# BUILDING A DIVERSE PRODUCT PORTFOLIO TO FUEL OUR DIVISIONS VALUE CREATION ACROSS 3 STRATEGIC END MARKETS



InP

SmartGaN

PREPARING EXPANSION BEYOND

Power-GaN

RF-GaN

**SmartSiCTM** 

EXPANDING INTO COMPOUND SEMICONDUCTORS

POI

**Photonics-SOI** 

**Imager-SOI** 

Power-SOI

STRENGTHENING SOI LEADERSHIP

FD-SOI

**RF-SOI** 

+ LICENSING / PATENT MONETIZATION



#### **EXPANDING OUR SUSTAINABLE VALUE CREATION AMBITIONS REVENUE** (FINANCIAL MODEL) **BEYOND FY26 EXPAND** \$1.2B ~\$1.2B ~40% MARKET SHARE, STRATEGIC **REVENUE REVENUE** EBITDA MARGIN **PARTNERSHIPS** & IPMONETISATION PRODUCT PORTFOLIO (INNOVATION & BOLT-ON M&A) SUSTAINABLE CAPACITY ~36% ~36% AND GLOBAL FOOTPRINT **EBITDA MARGIN** EBITDA MARGIN

EBITDA represents operating income (EBIT) before depreciation, amortization, impairment of non-current assets, non-cash items relating to share-based payments, provisions for impairment of current assets and for contingencies and expenses, and disposal gains and losses. EBITDA is not a financial indicator defined by IFRS and may not be comparable to EBITDA as reported by other groups. It represents additional information and should not be considered as a substitute for operating income or net cash generated by operating activities

FY26

FY25

FY24

FY23

**FY30** 

### RAMPING GLOBAL INDUSTRIAL FOOTPRINT

## TO ADDRESS GROWING DEMAND IN SOI AND COMPOUND ENGINEERED SUBSTRATES



SOITEC BERNIN 1 - SOI 200 FRANCE

RF-SOI

Power-SOI

Photonics-SOI



SOITEC BERNIN 2 - SOI 300 FRANCE

RF-SOI Photonics-SOI

SOI Imager-SOI

FD-SOI



**SOITEC BERNIN 3 - POI** FRANCE

POI



**SOITEC BERNIN 4 - SmartSiC™** FRANCE

SmartSiC™

300mm Refresh

Extension under construction



SOITEC PASIR RIS 1 - SOI 300 SINGAPORE

RF-SOI Photonics-SOI FD-SOI Refresh



SOITEC PASIR RIS 1A - SOI 300 SINGAPORE

RF-SOI Photonics-SOI FD-SOI Refresh

Extension under construction



SIMGUI PARTNERSHIP - SOI 200 CHINA

RF-SOI

Power-SOI



SOITEC BELGIUM - GaN
BELGIUM

GaN

SOIWafers

Compound Wafers

#### ~ 1.45 mwpy

200mm SOI capacity reaching limit

- B1: full at 1M
- Simgui: up to 450K

#### **✓** Up to 2.75 mwpy

300mm SOI capacity target

- B2: 750K by end of FY25
- PR1: 1M by end of FY25
- PR1A: up to 1M in line with customer demand

#### **☐ Up to 700 kwpy**

Ramping capacity for POI in B3

#### **⊘**Up to 500 kwpy

Ramping capacity for SmartSiC<sup>™</sup>in **B4**First production expected Q3 FY24

### **☐ Up to 60 kwpy**

For Epi capacity in Hasselt



### A DIVERSE AND STREAMLINED **MANAGEMENT TEAM**

FOCUSED ON VALUE CREATION EXPANSION, SPEED OF EXECUTION, AND <u>DELIVERY</u> OF OUR AMBITIOUS STRATEGIC PLAN



Pierre Barnabé CEO



Léa Alzingre Chief Financial Officer



Jeannette Schuh **Human Resources** 



Jean-Marc Le Meil Mobile Communications Division



Emmanuel Sabonnadière Automotive & Industrial Division



Michael Reiha Smart Devices Division



Cyril Menon Operations Excellence & Quality Chief Operations Officer



Christophe Maleville Innovation Chief Technology Officer



Yvon Pastol Customer Group



**Emmanuelle Bely General Secretary** 



Steve Babureck Strategy &InvestorRelations



Caroline Sasia Communications & Chief of Staff

**EXECUTIVE COMMITTEE** MEMBERS1

36% WOMEN

(1) As of October 2023

# AUTOMOTIVE & INDUSTRIAL











#### **AUTOMOTIVE - In vehicle**

#### Carincreasingly becoming a connected hub

- In-vehicle Networking
- In-vehicle Sensors & Actuators
- Power Management IC (PMIC)
- System Basis Chip (SBC)
- Multimedia application processor
- Class Daudio amplifier

#### **AUTOMOTIVE – Edge computing**

# Improving automation features to improve functional safety

- Front, Rear, Edge & imaging radars
  - 10015
- Zonal / Edge Computing

LiDARs

- MCU/MPUVision / Data F
- Vision / Data Fusion Processor
- Airbag / Braking system

#### **AUTOMOTIVE – Powertrain**

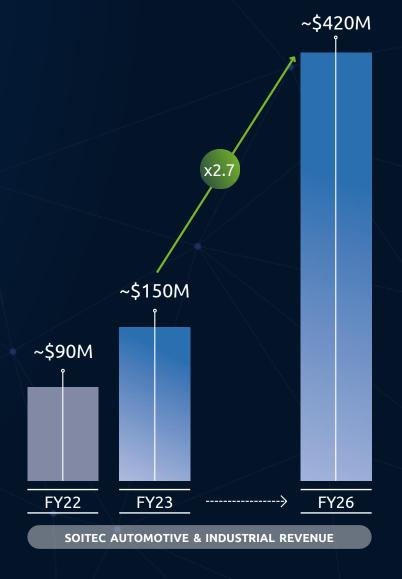
# Accelerating Electric Vehicle adoption

- Powertrain / Traction inverter
- On-Board Charger
- Battery Management System
- DC-DC converter

#### **INDUSTRIAL – Industry 4.0**

# Enabling factories of the future with more safety, automation and efficiency

- Solar field DC/AC stations
- Motor drive & gate driver
- Powerconverter
- PMICs & SBCs
- Low CO<sub>2</sub> footprint power devices



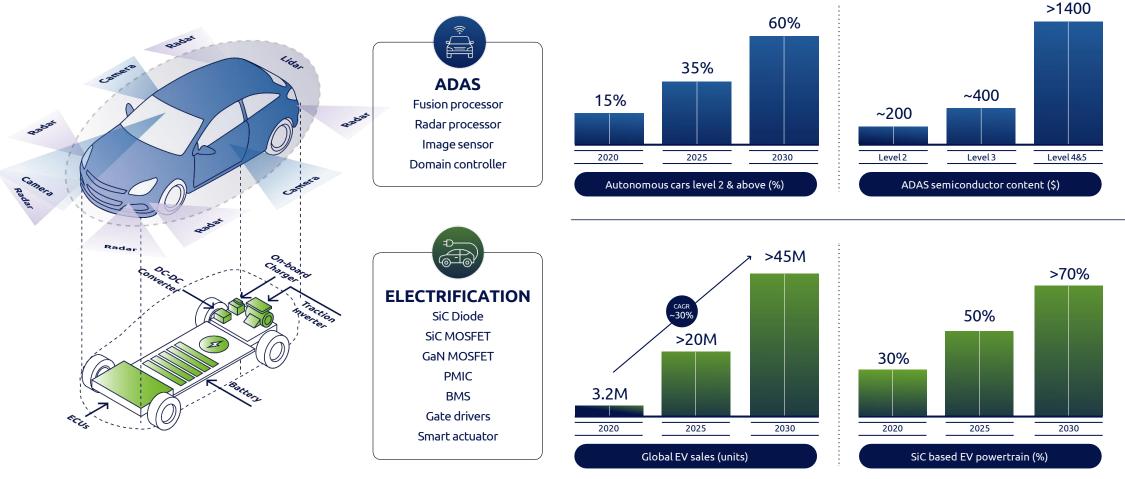






# **AUTOMOTIVE MEGATRENDS**

# DRIVE INNOVATION FROM SYSTEMS TO SUBSTRATES

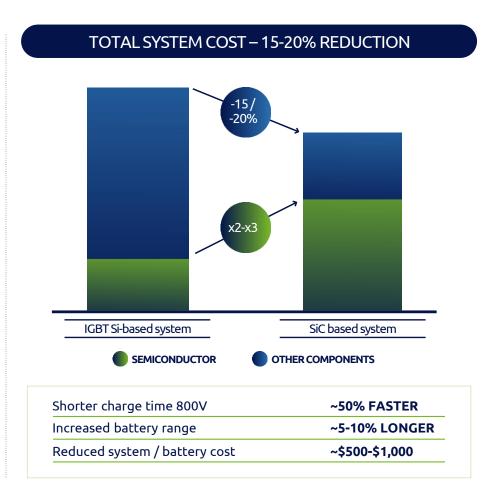


Source: Soitec estimates, Infineon, NXP, IHS, The International Council on Clean Transportation (ICCT) 2020



# POWERTRAIN – A CRITICAL COMPONENT OF THE EV MARKET SIC ADDS VALUE AT SYSTEM LEVEL AND ENABLES COST REDUCTION

#### POWERTRAIN COST: ~\$10,000 **ELECTRIC BATTERY PACK & POWER MOTOR ELECTRONICS MODULES** - Electric motors Battery pack - E-drive / inverter (DC/AC) - Modules and cells - DC/DC Converter e-transmission - BMS On-board charger (AC/DC) ~\$1,100**\\\** ~\$8,000 ~\$1,500<del>></del> **STANDARDISATION** OF 800V IN BATTERY **ACCELERATES SIC ADOPTION**



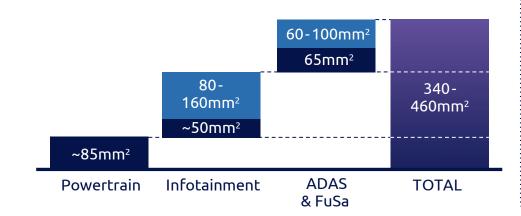


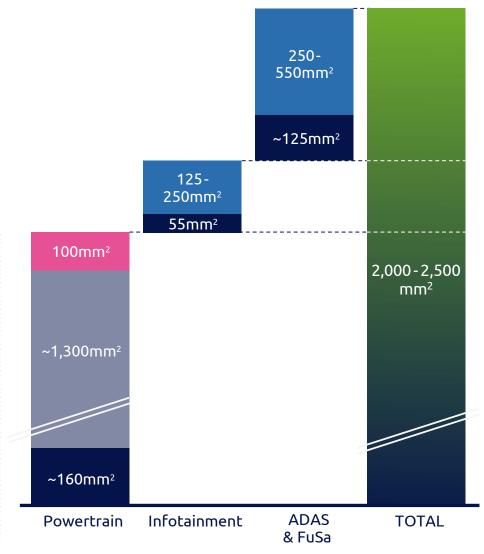


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# **AUTOMOTIVE CONTENT OPPORTUNITY** IN THE NEXT THREE YEARS IN mm<sup>2</sup>

- **Auto Power-SOI**
- **Auto FD-SOI**
- Auto SmartSiC™
- Auto Power-GaN





**TOWARD FY26 FY21** 









# **AUTOMOTIVE & INDUSTRIAL PRODUCT PORTFOLIO AUTO POWER-SOI**



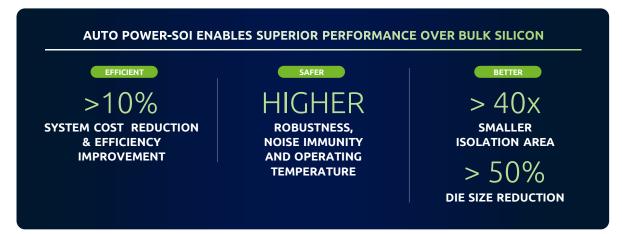


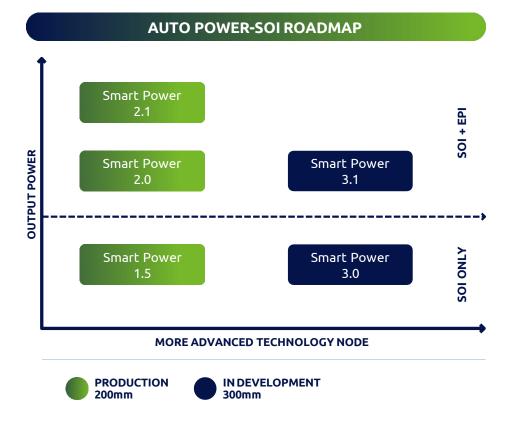
#### **AUTO POWER-SOI FOR IVN, PMIC, SBC, BMS & GATE DRIVERS**











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# **AUTOMOTIVE & INDUSTRIAL PRODUCT PORTFOLIO AUTO FD-SOI**



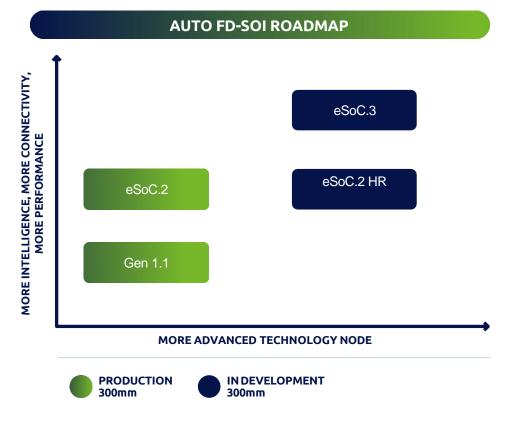
#### **AUTO FD-SOI EMPOWERS THE FUTURE OF AUTOMOTIVE AND INDUSTRIAL SMART DEVICES**











# **AUTOMOTIVE & INDUSTRIAL PRODUCT PORTFOLIO**AUTO SMARTSIC<sup>TM</sup>



#### **AUTO SmartSiC™, A DISRUPTIVE SOLUTION FOR LARGER SIC ADOPTION**

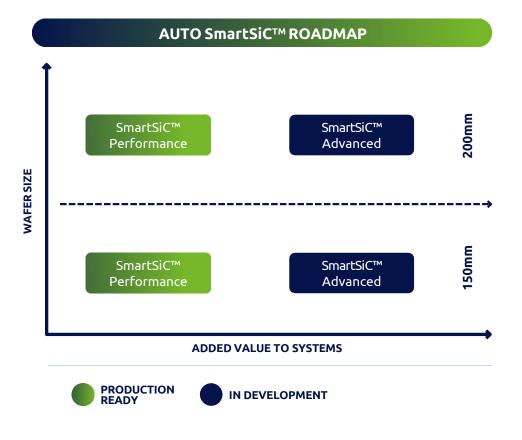


Powertrain









# SMARTSICTM ADOPTION



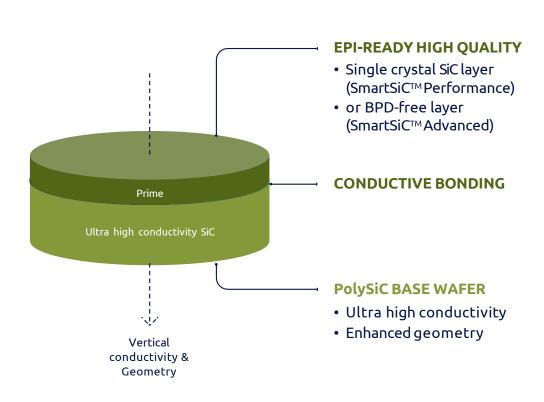








# **SMARTSIC<sup>TM</sup>** UNRIVALED VALUE PROPOSITION TO ENABLE EV ADOPTION



#### UNPARALLELLED VALUE PROPOSITION

- 40,000 Tons of CO reduction for each 1 million wafers vs SiC
- 200mm scalability to accelerate SiC adoption by 2 years through 10x re-usability
- Enabling new generations of SiC devices thanks to an improvement of R<sub>DSON</sub> of up to 20%
- Reducing CAPEX & OPEX for device manufacturers

>10x

MONO-SIC WAFER **RE-USABILITY** 

**POLY-SIC WAFER BETTER** CONDUCTIVITY

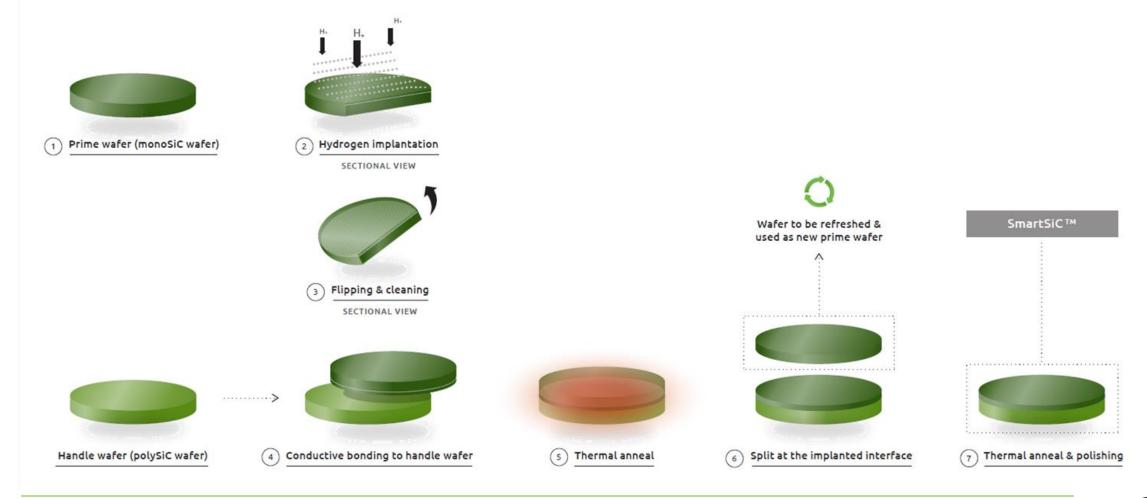






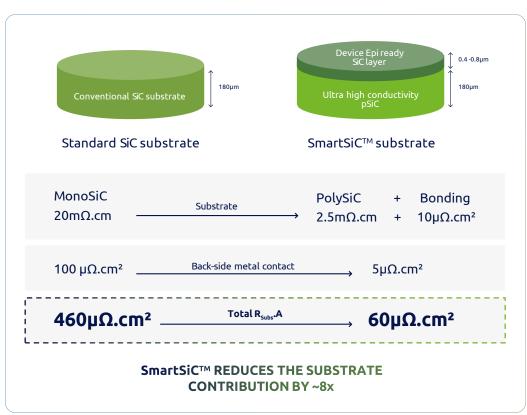
## SMART CUT<sup>TM</sup> PROCESS ADAPTED TO SIC

## LEVERAGING HIGH VOLUME MANUFACTURING EXPERIENCE: >2M WAFERS PER YEAR



# SMARTSIC<sup>TM</sup> ENGINEERED SUBSTRATE DRIVING SIGNIFICANT PERFORMANCE GAIN AT DEVICE LEVEL

## Lower R<sub>DSon</sub>.A



SmartSiC<sup>TM</sup> gains the equivalent to one-generation device improvements

	MOSFET 1200V	Α	В	C	D
	Generation (release year)	3 (2022)	3 (2021)	2 (2022)	4 (2022)
	MOSFET design	Planar	Planar	Trench	Trench
	Back-grinding Thickness (in µm)	180	180	110	150
	SmartSiC™ Gain (* vs SiC	<b>)</b> 14.9%	14.9%	11.2%	14%



ADDITIONAL GAINS OF SMARTSIC™ ON BETTER FLATNESS
AND EASIER BACK-GRINDING PROCESS
+
GAINS ON CAPEX AVOIDANCE

<sup>\*</sup> Soitec estimates based on publicly available information





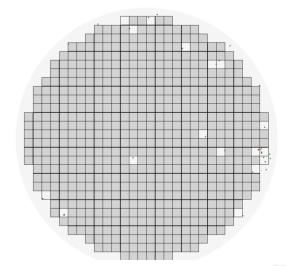


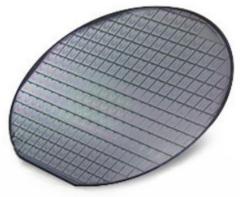


# SMARTSIC<sup>TM</sup> ENABLES UP TO +25% DIE / WAFER IMPROVEMENTS DIE SHRINK AND BETTER EFFICIENCY GENERATE MORE DIES PER WAFER

	Constant R <sub>ON</sub> redesign   MOSFET 1200V				
200mm wafer	Single Crystal SiC	SmartSiC™	Gain		
Initial die size	<b>25</b> mm²	<b>21.3</b> mm²	+15%		
Gross dies / Wafer	1,108*	1,313*	+18%*		
Die process yield	<b>70%</b> by 2024	<b>74%</b> by 2024	<b>+4%</b> by 2024		
Good dies / Wafer	<b>776</b> by 2024	<b>969</b> by 2024	<b>+25%</b> by 2024		

<sup>\*</sup>Edge Exclusion : 3mm + Scribe line  $80\mu$ m





Source: Littelfuse







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# SMARTSIC<sup>TM</sup> 200mm DISRUPTIVE ACCELERATION FACTOR

#### SMARTSIC<sup>TM</sup> ENABLES DEVICE MULTIPLICATION



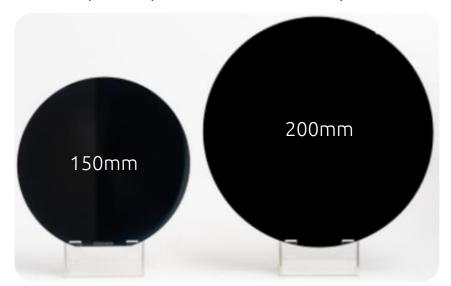
#### Lower Die size

SmartSiC<sup>TM</sup> enabling more products per wafer



#### Higher surface area

200mm allowing device multiplication



#### 200mm SMARTSiC™ FURTHER DIFFERENTIATION

# 200mm further adds to 150mm SmartSiC<sup>™</sup> performance improvements



Higher **yield** through **repeatability** 



Better **efficiency** of Smart Cut<sup>TM</sup> bonding



Fast **scalability** in 200mm



Lower cost of ownership









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# STMICROELECTRONICS AND SOITEC COOPERATE ON SIC SUBSTRATE MANUFACTURING TECHNOLOGY

- Partnering with a pioneer and leader of SiC Power Devices in the Automotive Industry
- Main goal: Qualifying 200mm product
- SmartSiC<sup>TM</sup> is a game-changer for automotive chip manufacturing



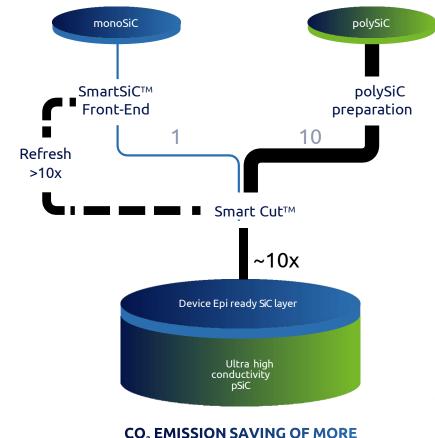


# **SUSTAINABLE AND AGILE SUPPLY CHAIN**

#### monoSiC

#### **FLEXIBLE SUPPLY MODEL**

- Qualification strategy customized to customer requirements
- 3 suppliers already engaged:
  - vertically integrated
  - independent sources
- Suppliers located in different regions



**CO, EMISSION SAVING OF MORE THAN 70% COMPARED TO CONVENTIONAL SIC** 

#### polySiC

#### **ECOSYSTEM DRIVEN BY SOITEC**

- Suppliers targeted across different regions
  - 1 supplier under LTA
  - 2 suppliers engagement on track with roadmap
- Others under evaluation
- Strong collaboration with suppliers to design the most efficient polySiC wafers
- High degree of agility between 150mm and 200mm wafers









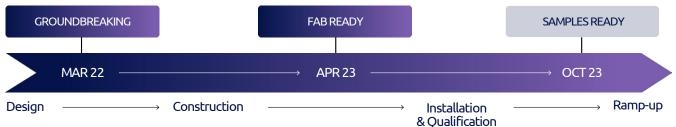


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### **BERNIN 4**

# NEW CLEANROOM FOR SMARTSiC<sup>TM</sup> 500kwpy 150/200mm CAPACITY





# BERNIN 4 TRIGGER SMARTSiC™ CAPACITY

High flexibility 150-200mm Designed with efficient principles

- 2,000m² agile new cleanroom able to produce SmartSiC™ 150/200mm
- 300mm Refresh located in the same building to enable fixed cost absorption as early as CY24
- Facilities redundancy, industrial synergies (utilities, warehouse, know-how...)
- Fully connected with former cleanroom and new logistics platform





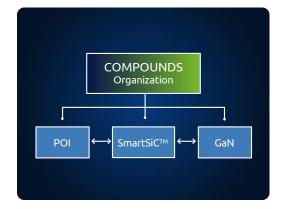
### RAMPING A SCALABLE AND AGILE MODEL





# ADAPTING SUPPLY TO CUSTOMER DEMAND

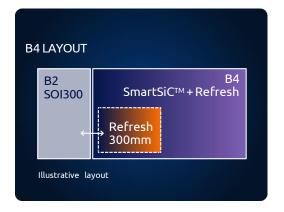
- Piloting equipment installation
- Driving raw material supply implementation



#### OPTIMIZE COMPOUND ORGANIZATION

## LEVERAGING ASSET SYNERGIES

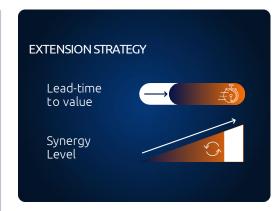
- >50% for POI / SmartSiC<sup>™</sup> Tools
- ~90% of tools are bridge 150 / 200mm (both POI and SmartSiC<sup>TM</sup>)
- Global Compounds team



#### **DEPLOYING AGILE FABS**

## ENABLING FIXED COST ABSORPTION

- SmartSiC<sup>TM</sup> / 300mm SOI refresh
- Ramp-up designed to absorb fixed costs early stage through refresh / epi



#### **FAB EXTENSIONS**

# DELIVERING SYNERGIES & ACCELERATED QUALIFICATION

- Synergies / Leveraging existing footprint
- Faster qualification











## **SMARTSICTM ROADMAP**

#### Qualification 150mm **High Volume Manufacturing Recent Highlights** Prototyping **Device and System** ✓ >1,000 prototypes SmartSiC<sup>TM</sup> Performance Qualification delivered 200mm **High Volume Manufacturing** Prototyping Low resistivity **Device and System** √ 30 players engaged across 3 continents √ 1 qualification SmartSiC<sup>TM</sup> Advanced **Qualification** ongoing with 150m 200mm Ultra-low defectivity High Volume Manufacturing Prototyping **Device and System STMicroelectronics** & low resistivity











# AUTOMOTIVE & INDUSTRIAL KEY MESSAGES

# AUTOMOTIVE & INDUSTRIAL DIVISION EXPECTED TO TRIPLE ITS REVENUE BY FY26

- We leverage 2 main trends, Digitalization
   & Electrification of the car
- The automotive semiconductor content opportunity is expected to x4 between FY21 and FY26
- SmartSiC<sup>TM</sup> expected to generate around 50% of the division revenue by FY26

# A DYNAMIC AND ATTRACTIVE PRODUCT PORTFOLIO

- Power-SOI, a critical product to enable greater performance and support an increasing number of functional safety features
- FD-SOI is now a reality in the automotive industry, addressing the blossoming market of radars / LiDARs, the transition to Zonal Architectures and enabling AI for mobility

# SMARTSIC™, AN INDUSTRY GAME CHANGER

- Silicon Carbide is positioning itself as the new standard for EV powertrain and an asset to accelerate the transition to EV
- SmartSiC<sup>TM</sup>: Greener, Faster, Better. Value Creation & Performance demonstrated
- First customer in Qualification; SmartSiC<sup>™</sup> in cars expected by end of CY24
- On track with our roadmap, ready for 1st production in Sept 2023, at our new Fab Bernin 4. Ramp-up in FY25









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AUTOMOTIVE & INDUSTRIAL THANK YOU