REVASUM

# 10th Annual December CEO Summit

**Rebecca Shooter-Dodd**
President, CEO and Executive Director

8 December 2021

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**Non-IFRS financial measures**

Revasum uses certain measures to manage and report on its business that are not recognised under Australian Accounting Standards or IFRS. These measures are collectively referred to in this document as 'non-IFRS financial measures' under Regulatory Guide 230 'Disclosing non-IFRS financial information' published by ASIC. Management uses these non-IFRS financial measures to evaluate the performance and profitability of the overall business. The principal non-IFRS financial measures that are referred to in this document is EBITDA. EBITDA is earnings before interest, tax, depreciation and amortisation and significant items. Management uses EBITDA to evaluate the operating performance of the business prior to the impact of significant items, the non-cash impact of depreciation and amortisation and interest and tax charges.

Although Revasum believes that these measures provide useful information about the financial performance of Revasum, they should be considered as supplements to the income statement measures that have been presented in accordance with the Australia Accounting Standards and IFRS and not as a replacement for them.

Financial Data
All dollar values are in US dollars (US$) unless otherwise presented.

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## FULLY-AUTOMATED SINGLE-WAFER GRINDING & POLISHING SOLUTIONS FOR SILICON CARBIDE

Revasum **designs and manufactures capital equipment** for substrate conditioning and device manufacturing in the global semiconductor industry with a strategic focus on the **Silicon Carbide (SiC) Market** and wafer sizes ≤200mm. The Company's manufacturing and R&D is based in San Luis Obispo, California, USA.

**7AF-HMG**
Silicon Carbide Grinder

**6EZ**
Silicon Carbide Polisher

# REVASUM AT A GLANCE

## COMPANY OVERVIEW

**80+**
Patents for CMP, Grind & Polish

**600+**
Worldwide Active Tool Install Base

**100%**
R&D and Manufacturing In the US

**$15.4M**
FY20 Total Revenue

**70+**
Employees

**SiC**
Experts in SiC Processing

## STOCK SNAPSHOT*

**ASX:RVS**
Stock Ticker

**A$55.6M**
Market Capitalization

ASX
AUSTRALIAN SECURITIES EXCHANGE

**A$0.53**
Stock Price 1 December ‘21

## HIGHLIGHTS

**$9.0M**
**Total Confirmed Sales Order Backlog As of December 4, 2021**

**$6.1M**
**Q321 Total Revenue 117% q/o/q Increase**

**6EZ**
**PO Received for 2 x 6EZs First Unit Shipped, Installed & Accepted**

**$13.3M- $15.6M**
**Forecast FY21 Total Revenue**

**$25M-$35M**
**Forecast FY22 Total Revenue 60% - 125% y/o/y Increase**



*Stock information as of December 1st, 2021

# CORPORATE LEADERSHIP

## MANAGEMENT TEAM

**Rebecca Shooter-Dodd**
President & CEO and
Executive Director

**Karey Holland**
CTO

**Bill Kalenian**
VP of Engineering

**Chris Sloan**
VP of Worldwide Sales &
Marketing

## BOARD OF DIRECTORS

**Kevin Landis** | Chairman & Non-Executive Director

Firsthand

**Rebecca Shooter-Dodd** | Executive Director

REVASUM BDO

**Ryan Benton** | Independent Non-Executive Director

TEMPO EXAR ASM INTERNATIONAL

**Paul Mirabelle** | Independent Non-Executive Director

amplifon vita Greencross Pet Wellness Company

# OVERVIEW

## MARKET LEADER FOR SiC SINGLE-WAFER PROCESSING SOLUTIONS

PRODUCT OFFERING OF FULLY-AUTOMATED SINGLE-WAFER TOOLSET
7AF-HMG SiC GRINDER & 6EZ SiC POLISHER

6EZ SiC POLISHER COMMERCIALIZED
DURING FY21, THE FIRST TOOL HAS BEEN SHIPPED, INSTALLED AND ACCEPTED

OVER !5 YEARS EXPERIENCE
PROCESSING SILICON CARBIDE

CONTINUED PROCESS DEVELOPMENT
ALONGSIDE LEADING MARKET PARTICPANTS

## POSITIONED FOR LONG TERM SUSTAINABLE GROWTH

REVENUE GUIDANCE FOR FY22
US$25M – US$35M
60%-125% y/o/y increase

EXPECT TO BE
FREE CASH FLOW POSITIVE IN FY22

GROSS MARGINS CONTINUE TO INCREASE WITH FY21 YTD* MARGIN OF 35.4% (FY20: 31.8%)

BUSINESS STRATEGY TO
GROW RECURRING REVENUE STREAMS

## EQUIPMENT DEMAND DRIVEN BY HIGH-GROWTH END MARKETS

BATTERY ELECTRIC VEHICLE (BEV)
MARKET GROWING EXPONENTIALLY

BEV MARKET TO GROW TO 11.8 MILLION UNIT SALES BY 2026, A CAGR OF 40% FROM 2019

SiC TECHNOLOGY SIGNIFICANTLY ENHANCES EV PERFORMANCE

SiC INVERTERS ARE LIGHTER, SMALLER AND MORE EFFICIENT, WITH AN ESTIMATED
5-10% INCREASE IN VEHICLE RANGE

# Market Update

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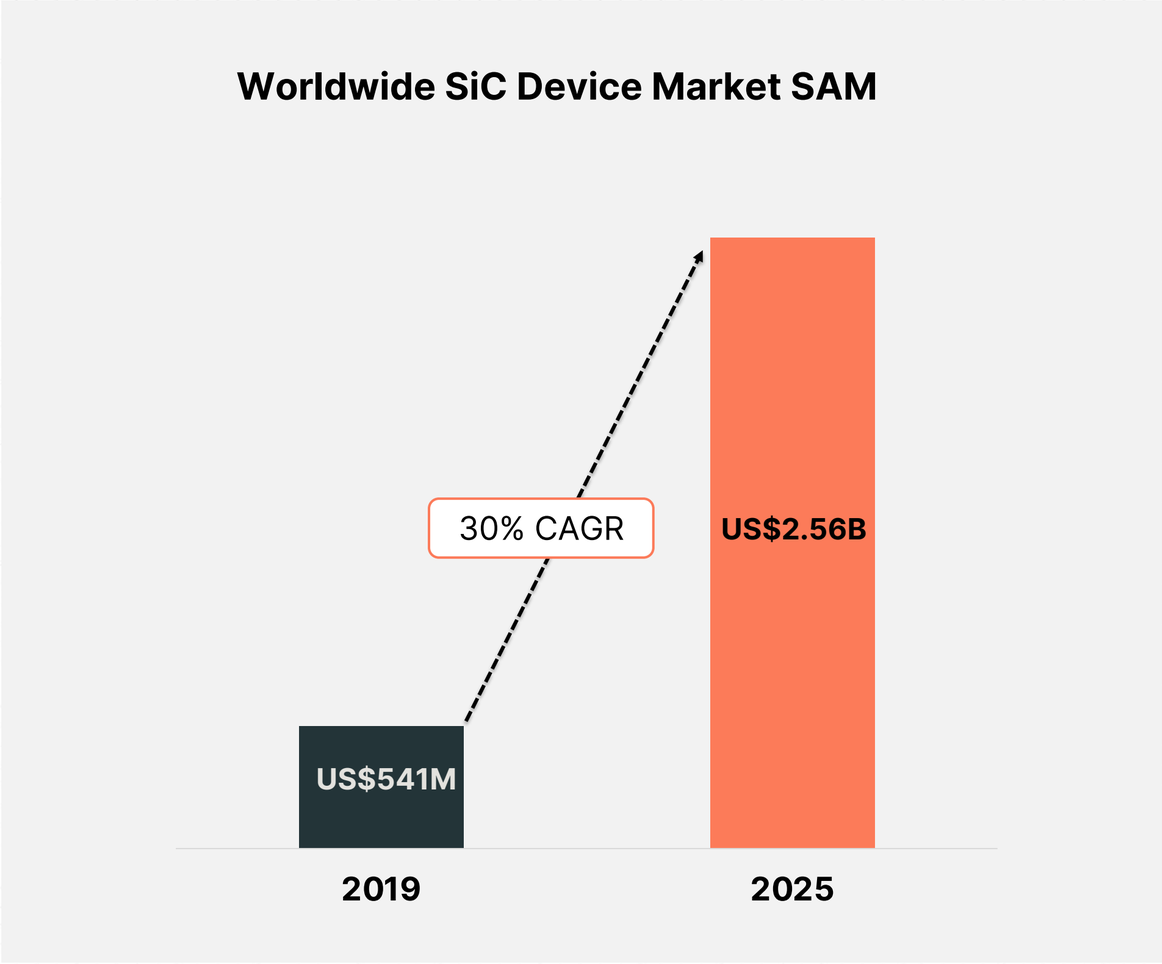
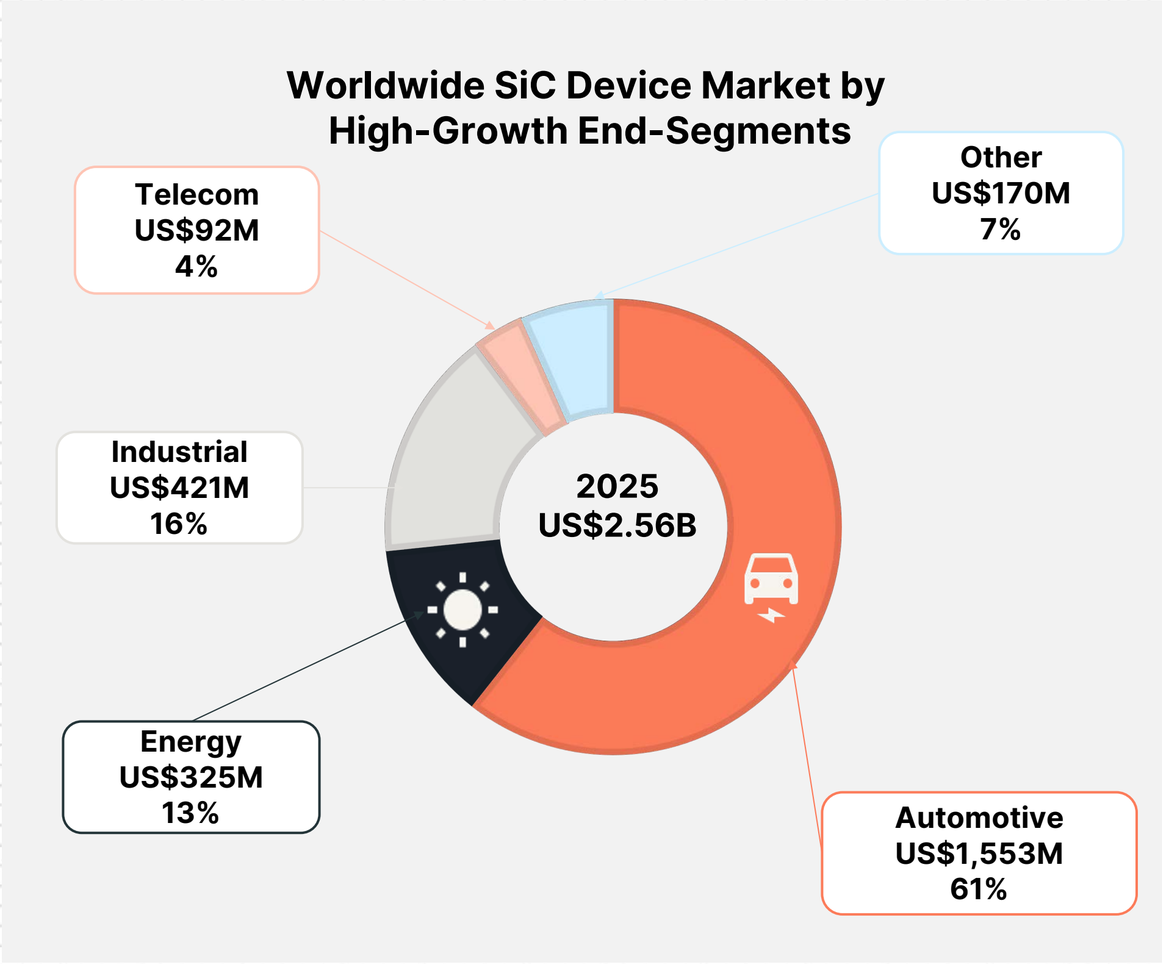
# POWER SiC DEVICE MARKET




REVASUM Source: YOLE Power SiC Market & Technology Report 2020

# ELECTRIC VEHICLES DRIVING THE DEMAND FOR SiC

## SiC TECHNOLOGY SIGNIFICANTLY ENHANCES EV PERFORMANCE

- SiC-based power semis can drive lower energy losses,  reduce heat dissipation and operate at higher temperatures vs Si-based ones.
- SIC products address driver ‘Range Anxiety’ – fear of an EV battery losing power before the driver reaches their destination or suitable charging point, with SiC delivering an estimated 20% increase in battery range compared to Si.

## FAST-CHARGING TECHNOLOGY – CURING “RANGE ANXIETY”

- Fast-charging stations are powered by SiC
- Worldwide fast charger deployments predicted to be 3.3M units in 2024
- Silicon Carbide will represent a portion of this market share
- SiC content per charger varies based on charger capacity (100kW to 300 kW)

## SiC – THE TECHNOLOGY OF CHOICE FOR CHARGING BOTH ON & OFF THE CAR

- SiC creates lower-cost, energy-efficient fast chargers
- High power conversion capabilities
- Faster switching speeds
- Improved thermal performance
- Reduces the size of battery needed

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# DOES SILICON CARBIDE REALLY SAVE ENERGY FOR CARS?

## ENERGY SAVED PER CAR USING SILICON CARBIDE

Equivalent of 5.5 barrels of oil saved per sedan

Owners save over $233* of electricity

Lifetime GHG emissions reduced by 690 kg $CO_{2,eq}$, equal to the $CO_2$ in 77 gallons of gasoline

**In 2030, if 35M BEVs use Silicon Carbide, the lifetime savings for that 1 model year would be:**

Equivalent of **192M barrels of oil**

**$8.2B of electricity**

Lifetime GHG emissions equivalent to **2.7B gallons of gasoline**

*Assumes US average residential electricity price: $0.1371/kWh

**SOURCE: WOLFSPEED INVESTOR DAY 2021 PRESENTATION**
https://assets.wolfspeed.com/uploads/2021/11/wolfspeed_investor_day_2021_presentation.pdf

Wolfspeed recently conducted a study on the energy saved per car using SiC MOSFET as opposed to traditional Si IGBT.

They accounted for all energy required to manufacture SiC MOSFETs.

**The savings from both a financial and environmental perspective are compelling.**

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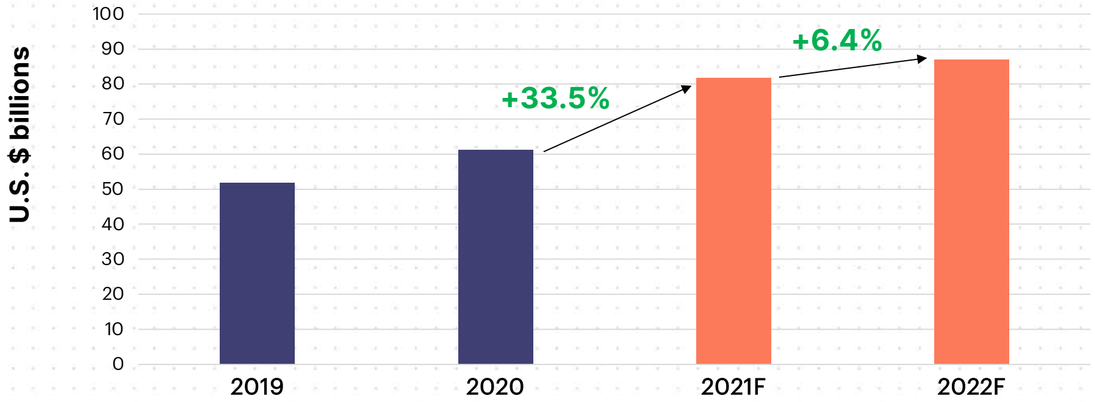
# EQUIPMENT INDUSTRY DYNAMICS

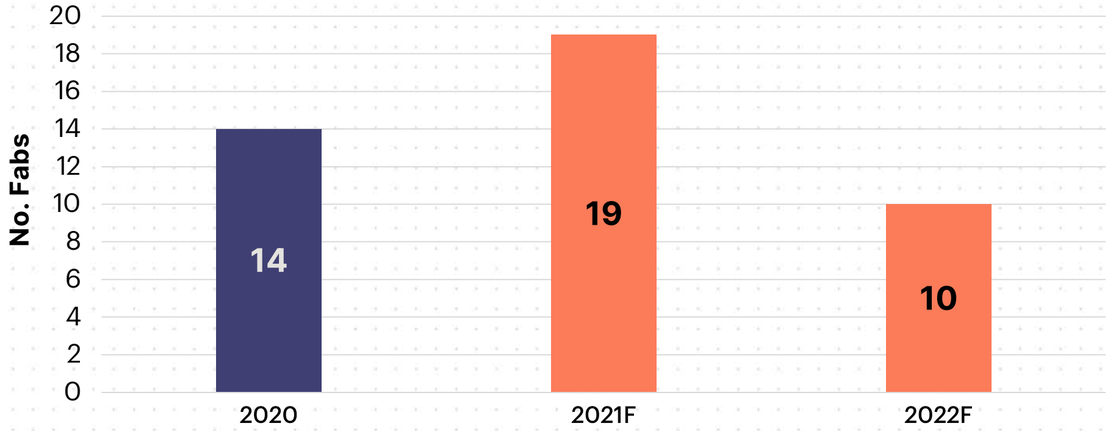
- Wafer fab semiconductor manufacturing equipment market is projected to increase by 33.5% in 2021.
- Resulting in a **new record spending on semiconductor manufacturing equipment** of US$81.7 billion.
- Growth momentum will continue as data-driven **digital transformation propels the industry** investment to surpass US$85 billion in 2022.
- 14 new fabs globally commenced construction in 2020, with a further 19 planned in 2021 and 10 in 2022. These fabs must be filled with new equipment.
- Global chip shortage remains a critical issue, with semiconductor supply chain constraints influencing geopolitical activity thereby increasing demand for equipment.
- In early 2021, President Biden announced plans to invest **US$52 billion in semiconductor manufacturing and research** as part of his drive to rebuild US manufacturing under a US$2 trillion infrastructure plan.

**Wafer Fab Equipment* Market**




*WPE +M/R + Fab Facilities
SEMI 2021 Mid-Year Equipment Forecast

**New Fabs Starting Construction**




SEMI World Fab Forecast Q221 Update

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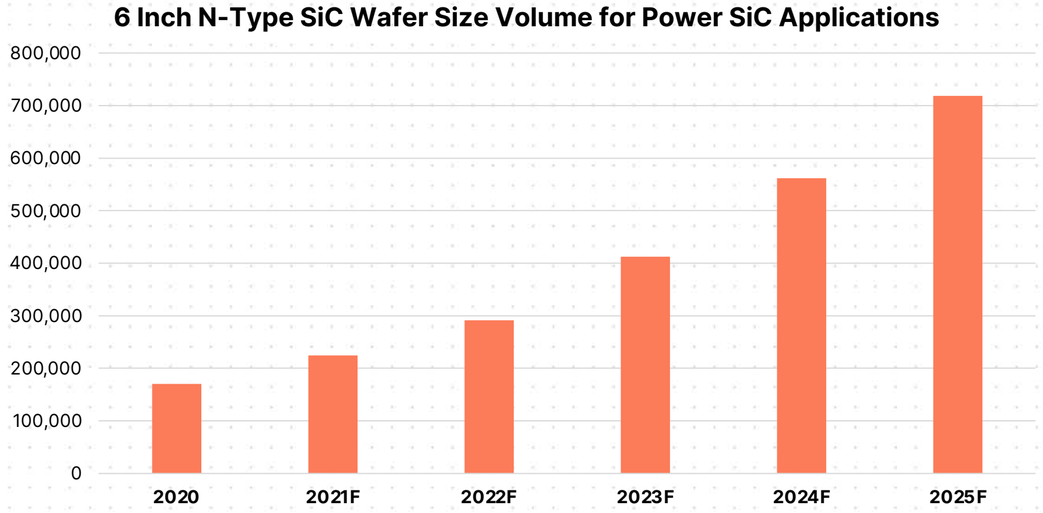
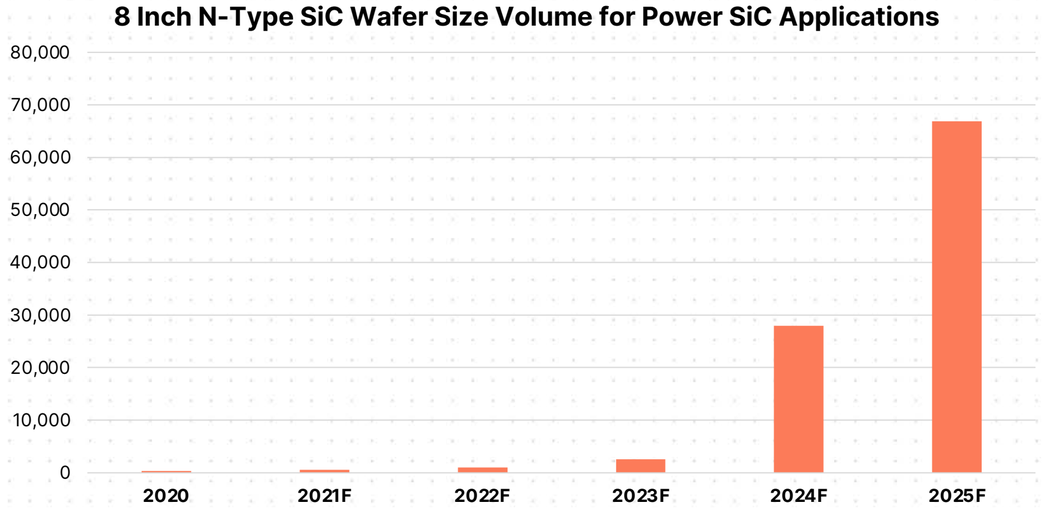
# GROWING SiC WAFER VOLUME DRIVING DEMAND

- Increased SiC wafer volume directly drives demand for SiC Wafer Fab Equipment
- Most industry participants have made the move to 6-inch SiC wafers with the volume growing rapidly, with a CAGR of 33% between 2020 and forecast for 2025
- We are seeing some industry participants, including Cree and ST Microelectronics, start to make the move to 8-inch SiC wafers
- A **CAGR of 183%** is anticipated in **8-inch wafer volume** between 2020 and forecast for 2025
- The move to 8-inch wafers is necessary to reduce the overall cost of SiC wafers
- Both the **Revasum 7AF-HMG Grinder and the 6EZ Polisher are configurable for 6-inch and 8-inch SiC wafers**, with customers able to easily switch between the two configurations




Source: YOLE Power SiC Market & Technology Report 2020

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# SiC INDUSTRY ANNOUNCEMENTS

***Durham, N.C. and Geneva,*** — Cree, Inc. (Nasdaq: CREE) and STMicroelectronics (NYSE: STM), a global semiconductor leader serving customers across the spectrum of electronics applications, announced today the expansion and extension of an existing multi-year, long-term silicon carbide wafer supply agreement to more than $500 million. The extended agreement is a doubling in value of the original agreement for the supply of Cree's advanced 150mm silicon carbide bare and epitaxial wafers to STMicroelectronics over the next several years. The increased wafer supply enables the semiconductor leaders to address the rapidly growing demand for silicon carbide power devices globally, particularly in automotive and industrial applications.

https://www.wolfspeed.com/company/news-events/news/cree-and-stmicroelectronics-expand-and-extend-existing-silicon-carbide-wafer-supply-agreement

AUBURN, Mich., July 14, 2021 /PRNewswire/ -- SK Siltron CSS, a semiconductor wafer manufacturer, today announced plans to invest $300 million and create up to 150 high-paying, skilled jobs in Bay County, Mich., over the next three years to provide manufacturing and R&D capabilities of advanced materials for electric vehicles. The expansion will more than double the company's Michigan employee base and add a new site in Bay City, Mich., to join its existing site in nearby Auburn, Mich.

SK Siltron CSS manufactures a specialty wafer made of silicon carbide (SiC) that can be used in the semiconductor power components of electric vehicles. SiC wafers are more efficient at handling high powers and conducting heat than normal silicon. When used in EV system components, this characteristic can allow a more efficient transfer of electricity from the battery to the motor, increasing the driving range of an EV by 5% to 10%.

https://www.prnewswire.com/news-releases/sk-siltron-css-announces-300-million-michigan-expansion-to-support-electric-vehicle-growth-301333677.html

**PHOENIX, AZ and HUDSON, NH – August 25, 2021 – onsemi** (Nasdaq: ON), a leading supplier of intelligent power and sensing technologies, and GT Advanced Technologies ("GTAT"), a producer of silicon carbide (SiC), today announced that they have entered into a definitive agreement under which **onsemi** will acquire GTAT for $415 million in cash.

Transaction accelerates **onsemi**'s mission to push innovation to create intelligent power and sensing technologies and build a sustainable future

Expands **onsemi**'s silicon carbide capabilities & assures customer supply to meet the rapid ramp-up of the sustainable ecosystem, including electric vehicles (EVs), EV charging and energy infrastructure

Reinforces **onsemi**'s commitment to make substantial investments in disruptive, high-growth technologies

https://www.onsemi.com/company/news-media/press-announcements/en/onsemi-to-acquire-gt-advanced-technologies

Munich, Germany – 6 May 2021 – Infineon Technologies AG (FSE: IFX / OTCQX: IFNNY) has concluded a supply contract with the Japanese wafer manufacturer Showa Denko K.K. for an extensive range of silicon carbide material (SiC) including epitaxy. The German semiconductor manufacturer has thus secured more base material for the growing demand for SiC-based products. SiC enables highly efficient and robust power semiconductors that are used in particular in the fields of photovoltaic, industrial power supply, and charging infrastructure for electric vehicles.

The contract between Infineon and Showa Denko K.K. has a two-year term with an extension option. Infineon has the industry's largest portfolio of SiC semiconductors for industrial applications.

https://www.infineon.com/cms/en/about-infineon/press/press-releases/2021/INFXX202105-068.html

# Market Leading Technology

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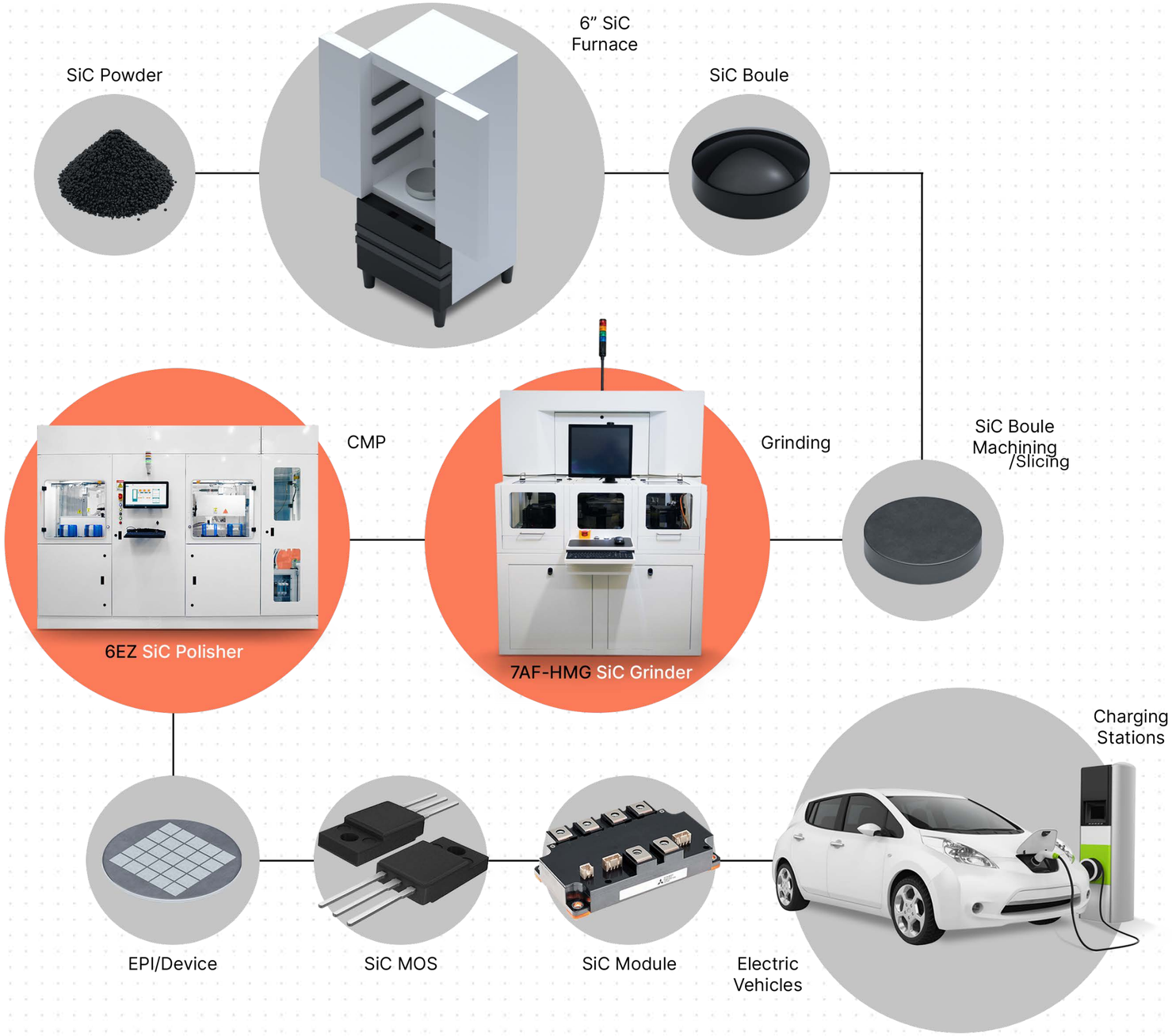
# Silicon Carbide (SiC) Manufacturing Process



# REVASUM'S FULLY-AUTOMATED SINGLE-WAFER SiC ~~TOOL~~SET

## 7AF-HMG
Silicon Carbide Grinder

## 6EZ
Silicon Carbide Polisher

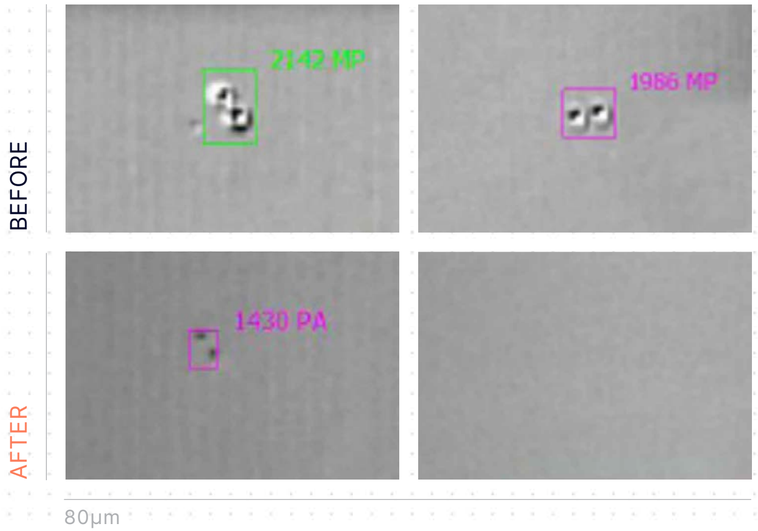
# 6EZ POLISHER EFFECT ON WAFER DEFECTIVITY

## Macropipe Surface Features

Majority of Micropipe surface features removed (~80%)

Before

After

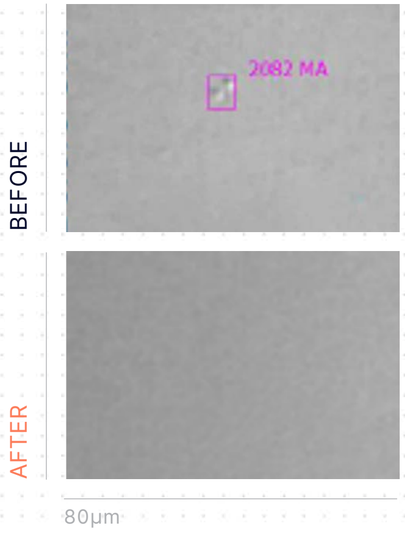



## Macropit Surface Features

Macropits reduced ~98%, & bumps and scratches eliminated

Before

After

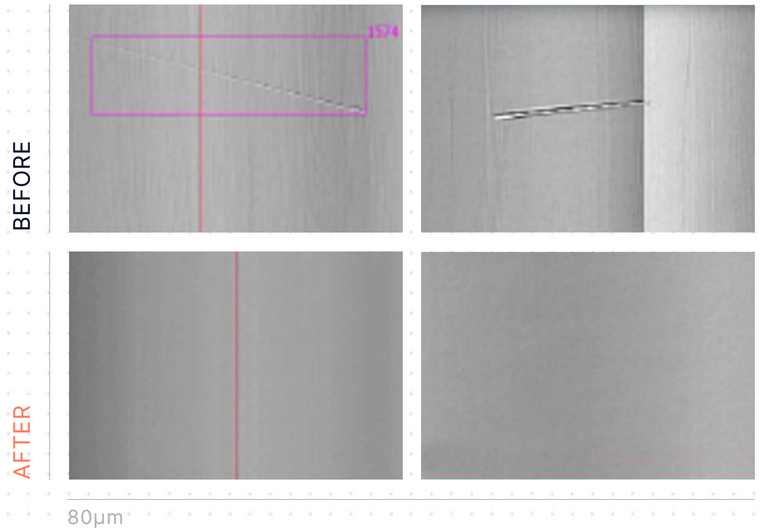



## Scratch Removal

Visible evidence of carrot and triangle defects eliminated

Before

After

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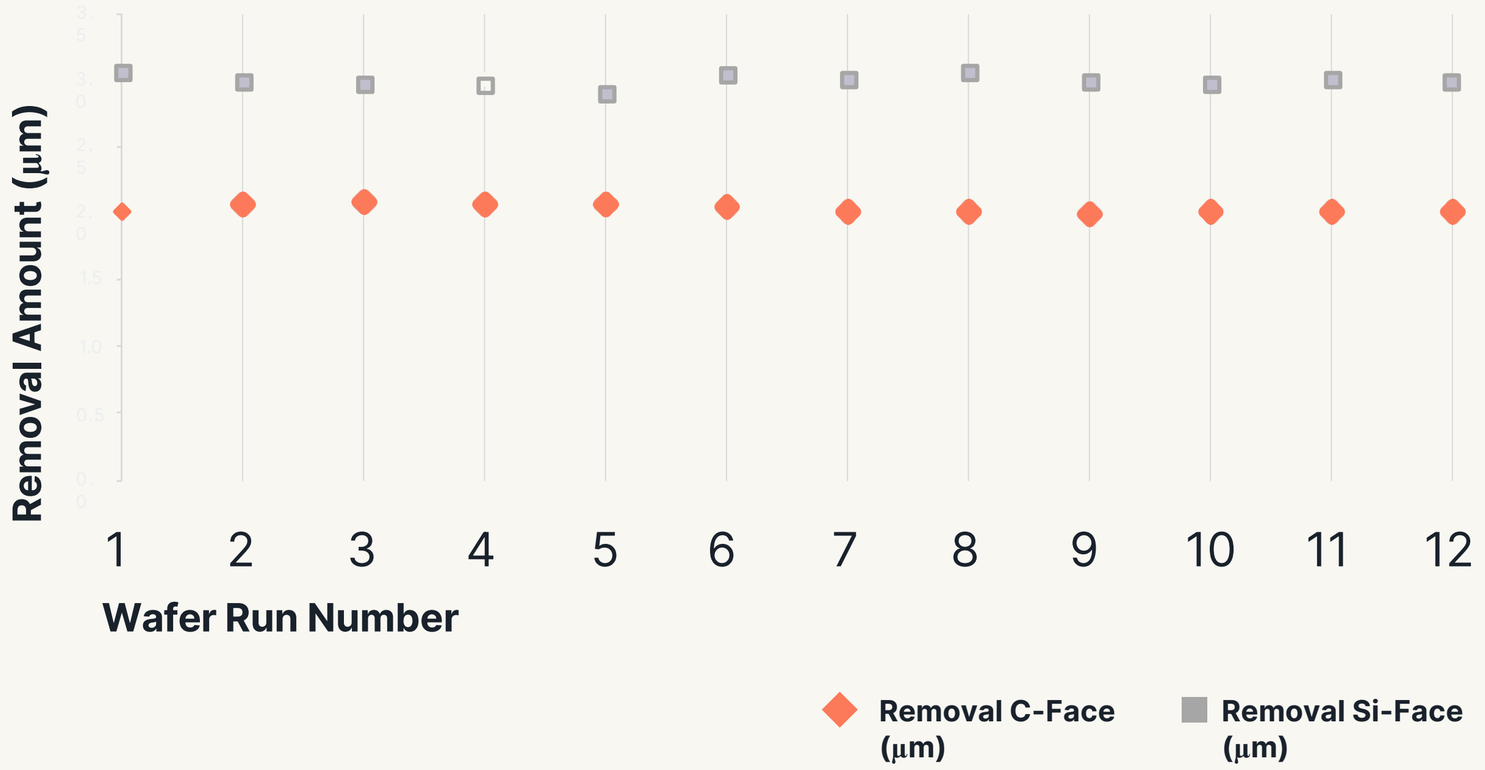
# 6EZ SiC POLISHER – DELIVERING UNPARALLELED REPEATABILITY




## Summary: 12 Wafer double-side polish

**C-Face Removal Rate:**
13.0µm/hr

**Si-Face Removal Rate:**
7.1µm/hr

**WTWNU% (C-Face):**
1.4%

**WTWNU% (Si-Face):**
1.5%

# Financial Highlights

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# KEY FINANCIAL METRICS – Q321 YTD

| | | | | |
|---|---|---|---|---|
| **US$6.3M** | **US$10.8M** | **US$7.4M** | **US$5.0M** | **US$4.8M** |
| | - | -36%[2] | -24.2%[1] | |
| Equipment Backlog | Year to Date Revenue | Year to Date OPEX | Raw Materials | Cash at Bank & On Hand |
| **US$2.1M** | **US$3.8M** | **35.4%** | **US$2.1M** | **US$1.9M** |
| | +US$1.1M[2] | +10.2%[2] | -48%[1] | |
| Other Revenue Backlog | Year to Date Gross Profit | Year to Date Gross Margin | WIP | Operating Cash Outflows YTD (9 months) |

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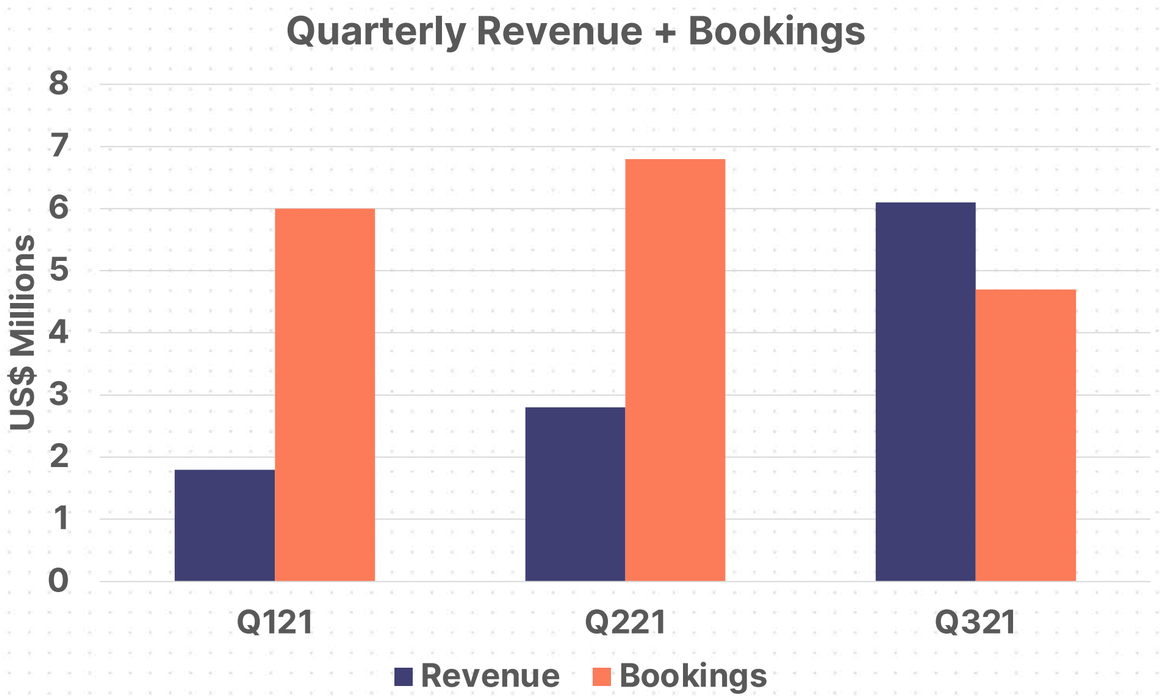
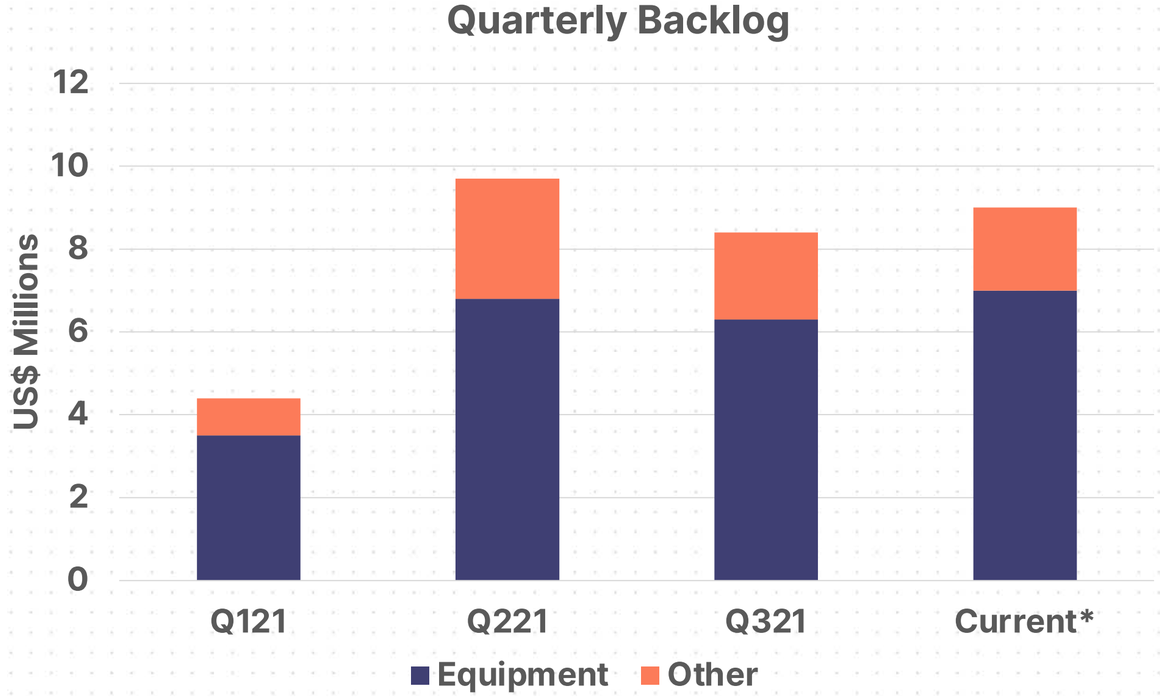
1) *Compared to FY20 year end date (January 3rd, 2021).*
2) *Compared to M920 YTD profit & loss.*

# GROWING REVENUE, BOOKINGS & BACKLOG




- Consistent revenue growth through FY2021, with 117% q/o/q increase seen in Q321
- Heading into FY22 with a solid backlog for both equipment and other revenue
- Confirmed customer purchase orders for 8 pieces of equipment as of December 4th, 2021 – including orders for the 6DZ Si Polisher, 7AF-HMG SiC Grinder and 6EZ SiC Polisher
- Strong bookings and backlog reflective of increased customer demand and the fast-growing SiC market

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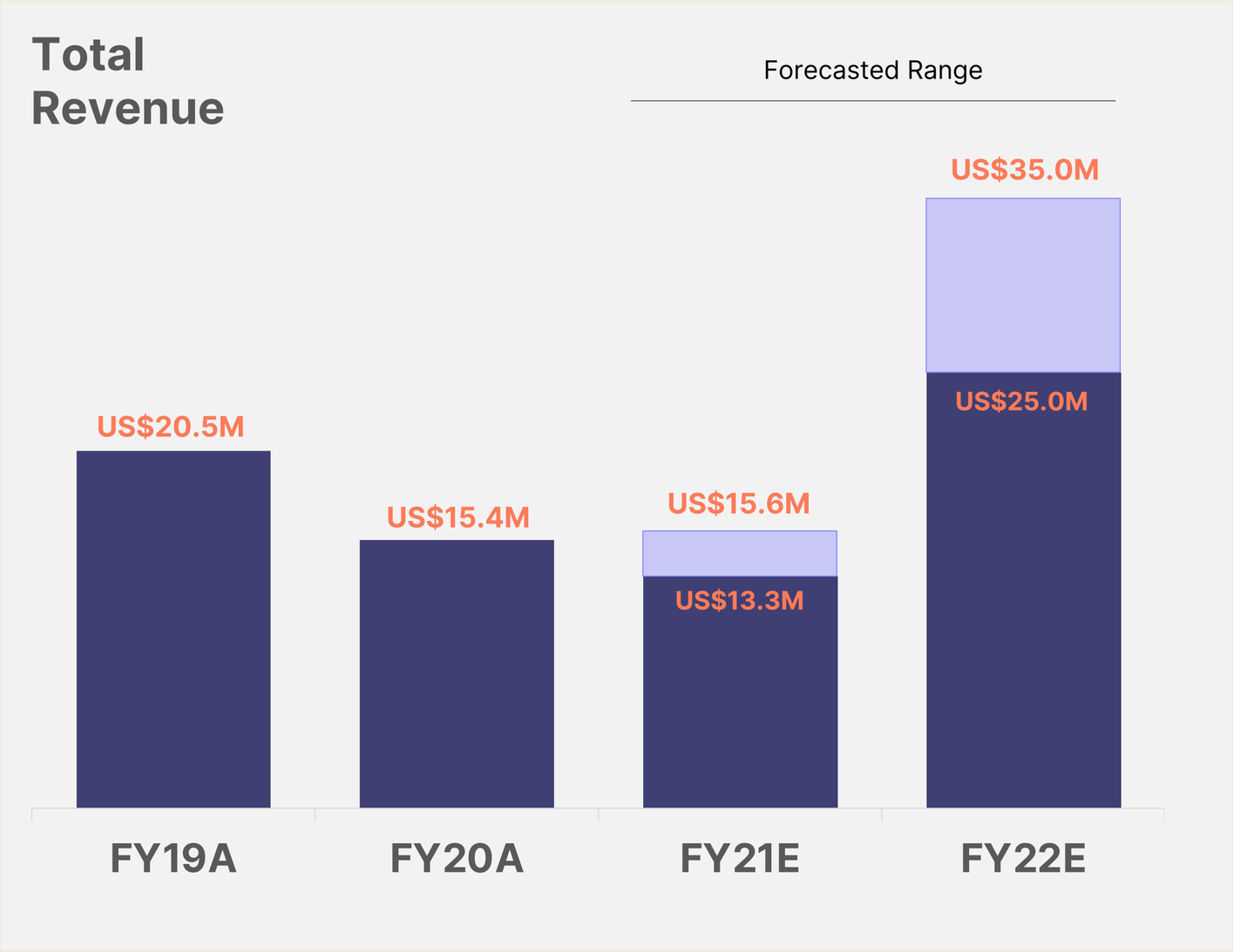
*Current Backlog as of December 4th, 2021

# FORECASTING SIGNIFICANT REVENUE GROWTH IN FY22




**Forecasted Total Revenue of US$13.3M – US$15.6M for FY21**

**Forecasted Total Revenue of US$25.0M – US$35.0M for FY22**

**60%-125% y/o/y Increase In Total Revenue from FY21 – FY22**

**Confirmed Customer Purchase Orders of US$9.0M as of December 4, 2021**

**Over FY22 and FY23 we anticipate shipping 40 - 50 tools based on forecasted customer demand, across all product lines.**

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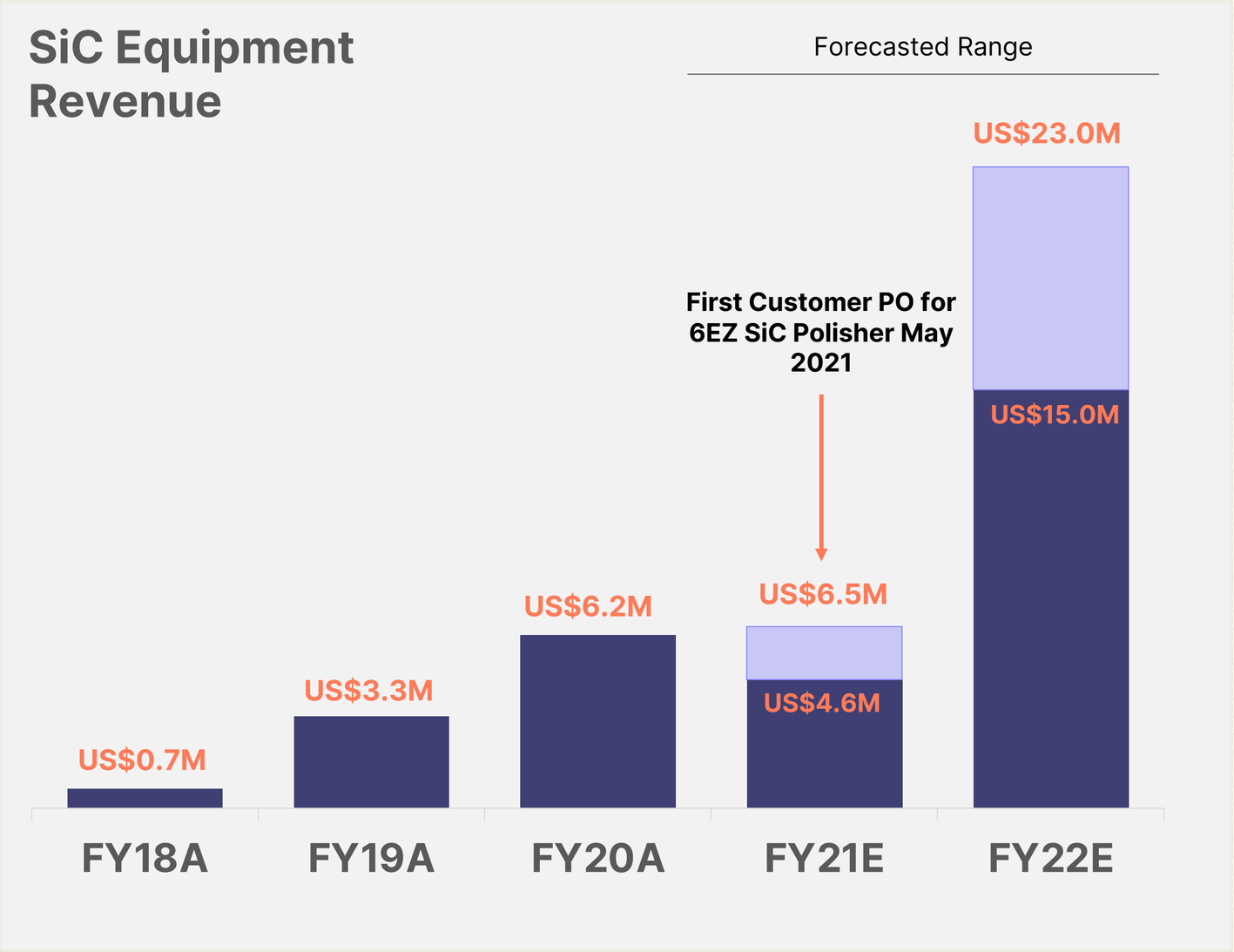
# RAPID SiC EQUIPMENT REVENUE GROWTH




**Company focus has shifted from sales of Legacy Silicon equipment to our Silicon Carbide (SiC) Toolset.**

**The first purchase order for two 6EZ SiC Polishers was received in May of 2021, with the first tool shipped in July. The tool is now fully installed at our customers facility and has successfully gone through process acceptance.**

**Revasum has partnered with leading contract manufacturer Owens Design based in Fremont, CA to ensure we can meet demand over the coming years.**

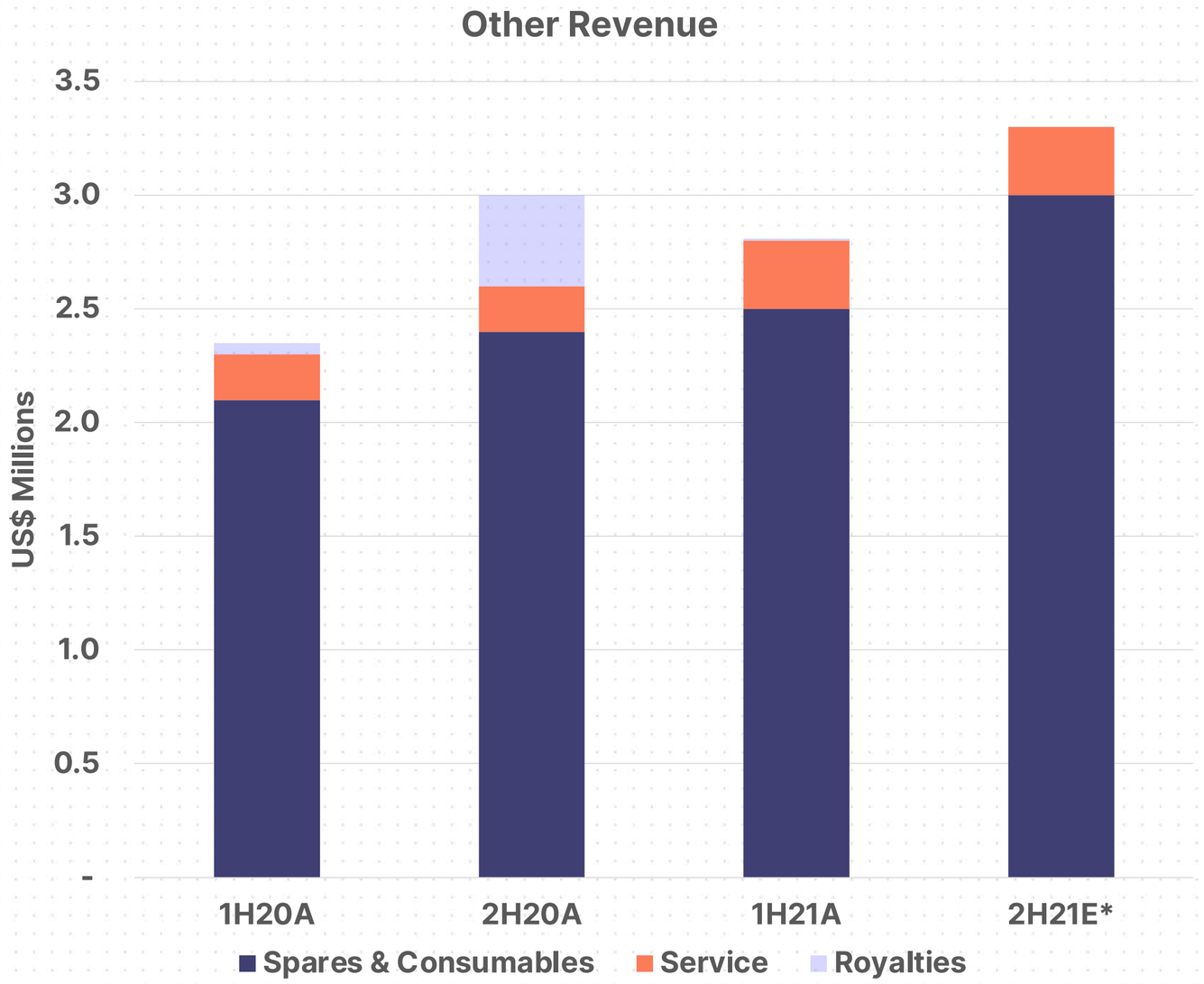
# LEVERAGING OUR EXISTING INSTALL BASE

**Revasum has a largely untapped 600+ Worldwide Active Tool Install Base**

**Increase of 43% in Spares & Consumables revenue from 1H20 to 2H21***

**Focus on expanding our Spares & Consumables offering and adding other recurring revenue streams**

**Exploring Joint Development opportunities to grow Royalties revenue stream**

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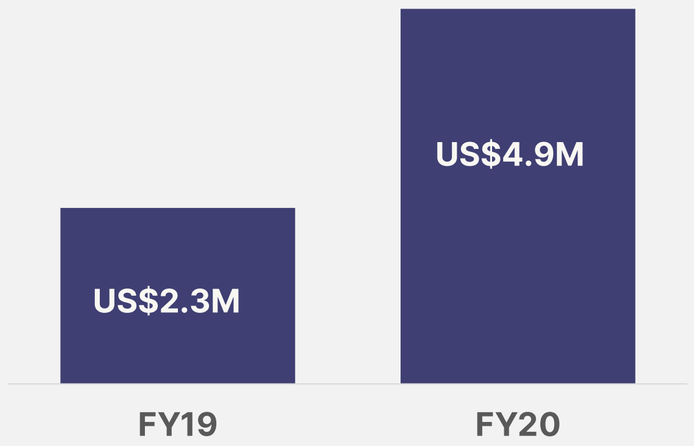
*2H21 Revenue includes revenue recognized and confirmed customer purchase orders scheduled to ship in 2H21

# SUSTAINABLE GROWTH

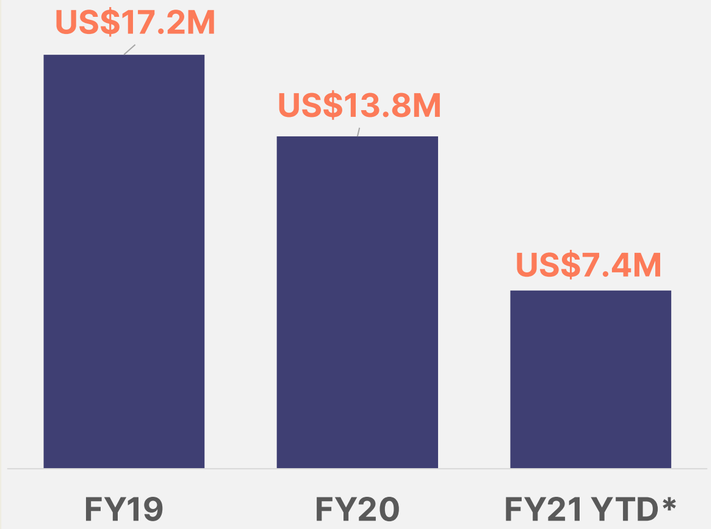
- Disciplined management focus on growing the Company sustainably
- Gross Margin continues to improve, with an FY21 YTD* Gross Margin of 35.4%
- Operating Cash Outflows significantly reduced, with outflows in FY21 related to building inventory to support increased customer demand & manage supply chain challenges
- Operating Expenses reduced to an appropriate level, representing 69% of revenue for FY21 YTD*, vs 84% of revenue for FY19
- Expect to be free cash flow positive in FY22

## Year-on-Year Gross Profit & Margin Growth

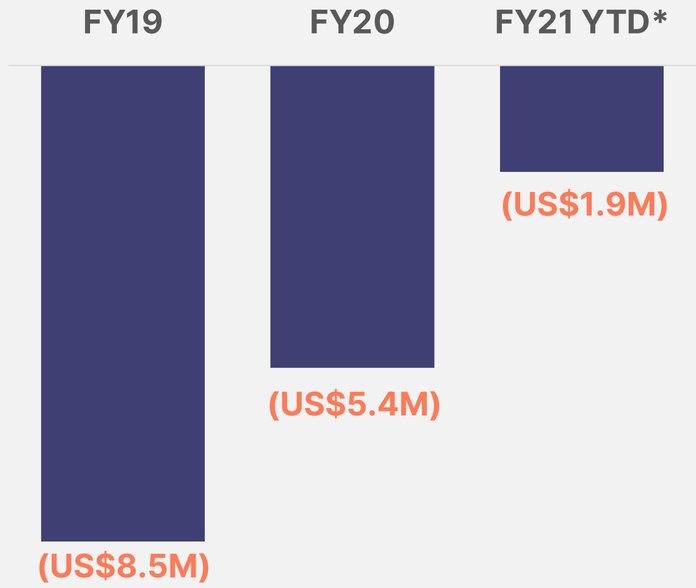



FY21 YTD* Gross Margin of 35.4%

## Right-Sizing Operating Expenses




## Reducing Operating Cash Outflows

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*FY21 YTD results represent results through Q321

# Q&A

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A GLOBAL LEADER IN SILICON CARBIDE SINGLE-WAFER PROCESSING EQUIPMENT