

ODYSSEY SEMI



Investor Presentation

May 11, 2022

“Safe Harbor” Statement

CAUTIONARY STATEMENT REGARDING FORWARD-LOOKING STATEMENTS

The information contained in this presentation includes some statements that are not purely historical and that are “forward-looking statements” within the meaning of the safe harbor provisions of the Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, but are not limited to, statements regarding the Company’s and its management’s expectations, hopes, beliefs, intentions or strategies regarding the future, including the Company’s financial condition and results of operations. In addition, any statements that refer to projections, forecasts or other characterizations of future events or circumstances, including any underlying assumptions, are forward-looking statements. The words “anticipates,” “believes,” “continue,” “could,” “estimates,” “expects,” “intends,” “may,” “might,” “plans,” “possible,” “potential,” “predicts,” “projects,” “seeks,” “should,” “will,” “would” and similar expressions, or the negatives of such terms, may identify forward-looking statements, but the absence of these words does not mean that a statement is not forward-looking. The term “Company” in this presentation includes Odyssey Semiconductor Technologies, Inc. and its wholly-owned JR2J, LLC subsidiary.

The forward-looking statements contained in this presentation are based on the Company’s and its management’s current judgment, expectations and beliefs, but our actual results, events and performance could differ materially from those expressed or implied by the forward-looking statements. There can be no assurance that future developments actually affecting the Company will be those anticipated. These forward-looking statements involve a number of risks, uncertainties (some of which are beyond the Company’s control) or other assumptions described more fully in the company’s filings with the Securities and Exchange Commission that may cause actual results or performance to be materially different from those expressed or implied by these forward-looking statements, including those relating to potential fluctuations in our operating results, our possible dependence on a few large customers for a substantial portion of our revenue, a loss of revenue if contracts with the U.S. Government, defense or other major customers are cancelled or delayed, our ability to implement innovative technologies, our ability to bring new products to market, achievement of design wins over our competitors, the rate of acceptance of our products in the market, the efficient and successful operation of our wafer fabrication and other facilities, our ability to adjust production capacity in a timely fashion in response to changes in demand for our products, variability in manufacturing yields, our ability to successfully integrate our Ithaca wafer fab or other facilities or entities we may acquire, our ability to obtain a Trusted Foundry accreditation for the wafer fab, industry overcapacity, inaccurate product forecasts and corresponding inventory and manufacturing costs, dependence on third parties, our ability to attract and retain skilled personnel and senior management, the dilution that may be caused to our stockholders’ ownership by our future need of substantial additional funding, our ability to protect our intellectual property, claims of intellectual property infringement and other lawsuits, security breaches and other similar disruption compromising our information, and the impact of government or environmental regulations. Should one or more of these risks or uncertainties materialize, or should any of our assumptions prove incorrect, actual results may vary in material respects from those expressed or implied by any of these forward-looking statements. The Company undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

THESE MATERIALS DO NOT CONSTITUTE ANY OFFER TO SELL, OR THE SOLICITATION OF ANY OFFER TO BUY, ANY SECURITIES OF ODYSSEY OR ANY OTHER ENTITY. ANY PRESENTATION TO THE CONTRARY SHOULD BE IGNORED.

“Odyssey Semiconductor™” and the Odyssey Semi logo are trademarks of Odyssey Semiconductor Technologies, Inc.

Odyssey Semiconductor (OTCQB: ODII) at a Glance

Company Overview

- Odyssey Semiconductor is a development stage company focused on fabricating vertical GaN power devices based on its proprietary technology
- Our power devices target the following markets:
 - High voltage industrial motors
 - Solar Power Inverters
 - Electric vehicles
 - Other
- Vertical GaN based power devices set to disrupt the SiC power device market based on its ability to:
 - Operate at higher switching speed
 - Provide lower losses
 - Reduce size and weight of power conversion modules

Odyssey Fabrication Facility in Ithaca, NY



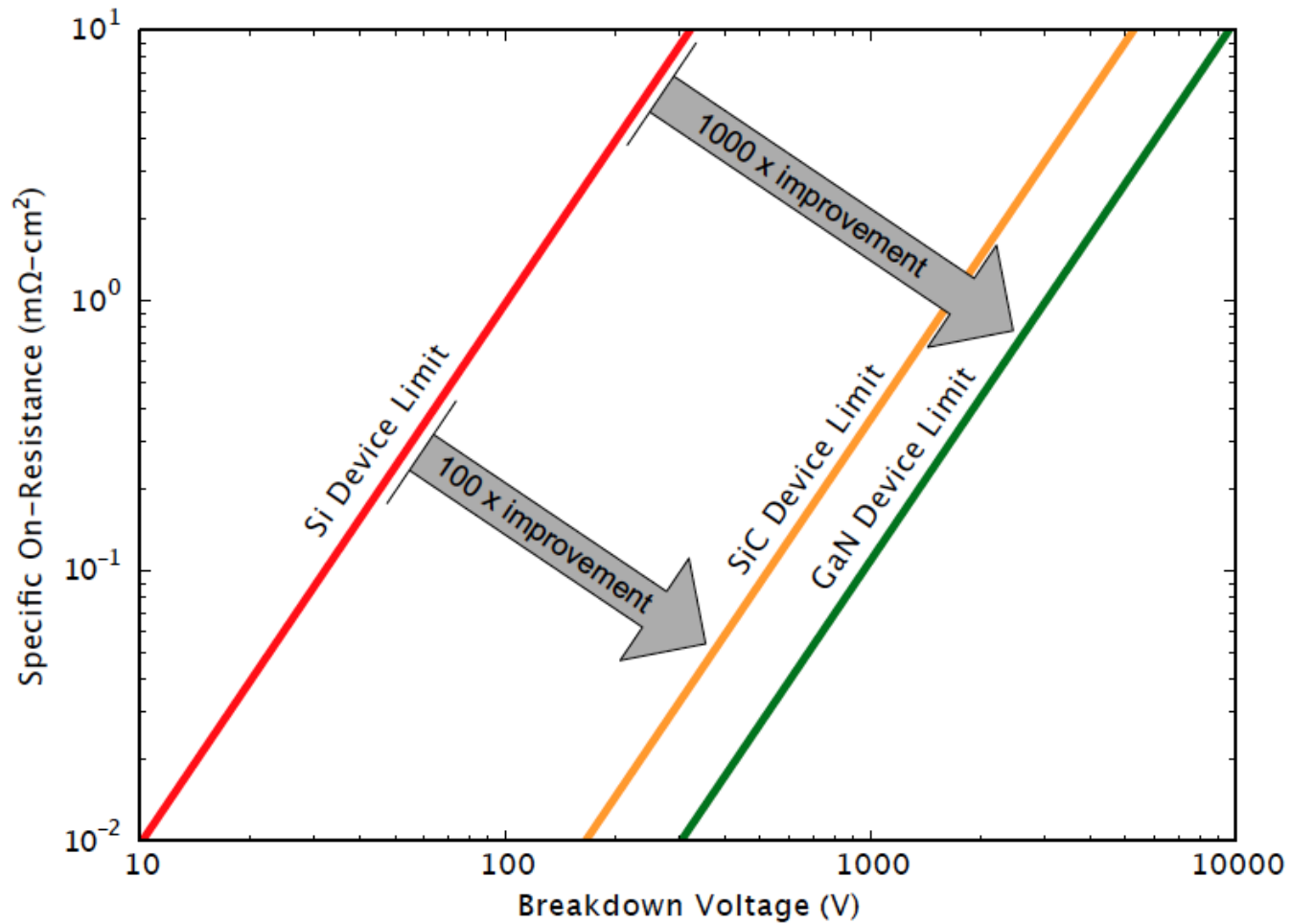
- Founded in 2019
- Strong GaN team
- Only US based GaN foundry – Ithaca
- CY2021 revenue of ~\$750,000
- 1 AARPA Grant \$1.5M - 2017
- Reverse IPO 2 Rounds of Financing
 - August 2019 - \$2.9M @ \$1.50
 - March 2021 - \$5M @ \$4.00
- Shares outstanding at 3/31/22 - 12.7Msh

Key Messages

- **New Disruptive High-Voltage Power Switching Devices with Strong Intellectual Property**
 - Vertical GaN will provide significant benefits over silicon carbide
 - Odyssey's proprietary vertical GaN-based device technology enables dramatic efficiency increases for medium and high voltage GaN power switching devices
- **Strong GaN Team & III-V Semiconductor Fab**
 - New CEO – Mark Davidson was hired in April 2022
- **Rapid Growth in High Voltage – Strong Market Demand**
 - TAM: \$3B 29% CAGR
- **Near to Medium Term Growth Strategies**
 - GaN products expected/available to sample in 2022
 - Mark starting to engage with customers in key markets – who are waiting for samples
- **Longer Term Growth Strategies**
 - Enable on-the-go charging for electric transportation
- **Working on Emerging from Development Stage and Raising More Capital Later This Year**
 - Announced last quarter the company is applying to have its common stock uplisted to Nasdaq Capital Market and has filed a Form S-1 related to public offering of its securities to raise the capital needed to meet the Nasdaq Listing requirements and other capital needs

Odyssey is pioneering vertical GaN development.
GaN will drive replacement of silicon and silicon carbide in high voltage, high performance power applications.

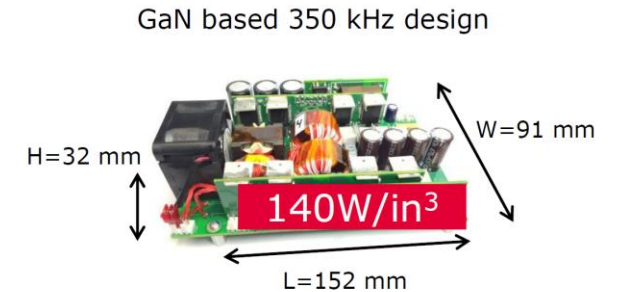
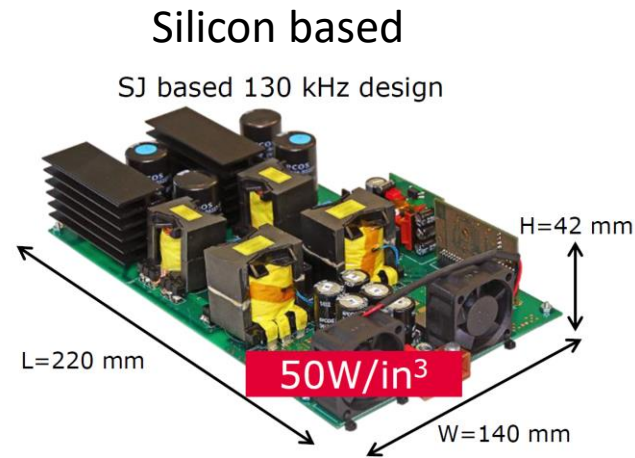
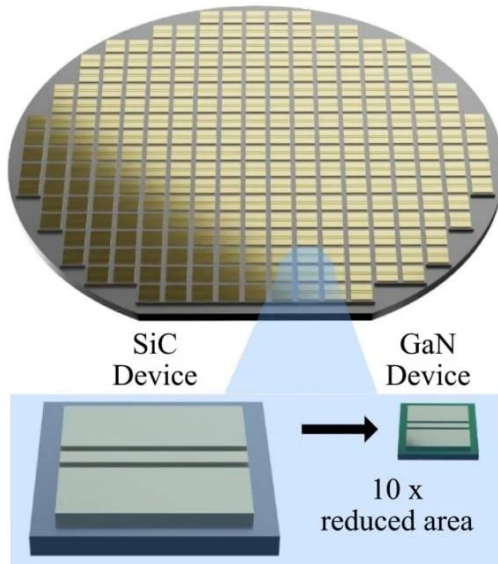
GaN vs. SiC?



Much smaller resistance for an equivalent area device = less capacitance and higher switching speed.

GaN vs. Si vs. SiC

- GaN is 1000x less resistive than Si and 10x less resistive than SiC
 - 10x more devices per wafer (sq mm) than SiC
 - Simpler process compared to SiC
 - Lowers manufacturing cost
 - Devices can run at higher switching speeds:
 - Reduced size and cost of surrounding components
 - Decreases Power losses – more efficient
 - Can achieve faster switching speed



Source: Infineon

GaN's smaller size fits into smaller form factors and deliver higher power efficiency and lower product costs.

Power Conversion Applications



LOW VOLTAGE

Power Supplies



MEDIUM & HIGH VOLTAGE

Solar PV Inverters



Industrial Motor Drives

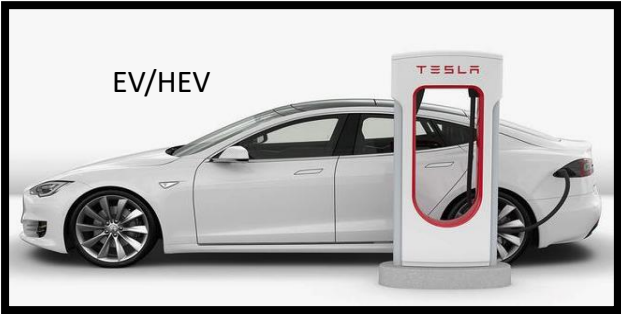


HIGH VOLTAGE

Smart Grid



EV/HEV



Wind Power



Electric Train Propulsion



Odyssey's vertical GaN-based device technology enables dramatic efficiency increases over competition for applications up to 10 kV for industrial motors, electric vehicles, solar power, etc.

Near to Medium Term Opportunities

Odyssey is focused on three markets: industrial motors, solar power, and electric vehicle recharging

High Voltage Industrial Motors

~45% of world's energy is consumed turning a motor which is a \$100M market today growing at 6% CAGR



Solar Power Inverters

Decrease losses from tying in solar power generation to the electric grid – a \$170M+ market today growing at 17% CA



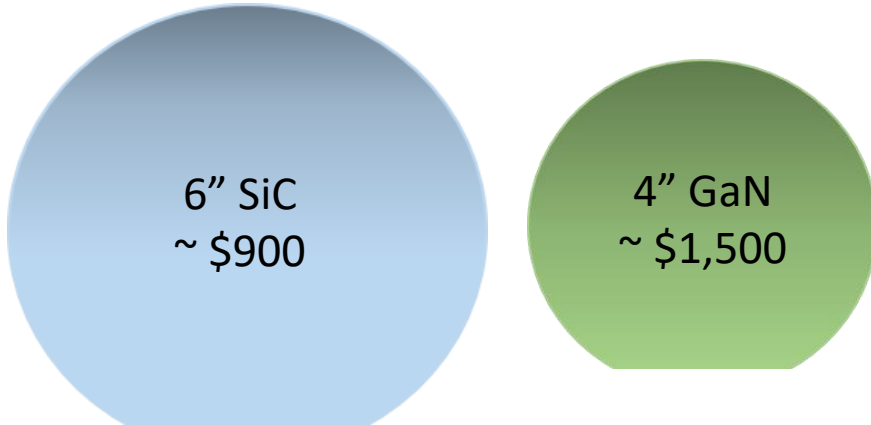
Electric Vehicles

Decrease losses in power converters and power inverters while reducing the size and weight of these modules which is a \$450M mkt today w/CAGR of 38%



Device Cost: SiC vs GaN

Current state-of-the-art wafer Sizes: GaN vs. SiC



- GaN wafers are ~ 4x the cost of SiC wafers per mm²
- However, GaN transistors require 10x less area to achieve equivalent on resistance as SiC wafers
- One 4" GaN wafer has 4x the number of equivalent devices as One 6" SiC wafer

CPM2-1200-0025A

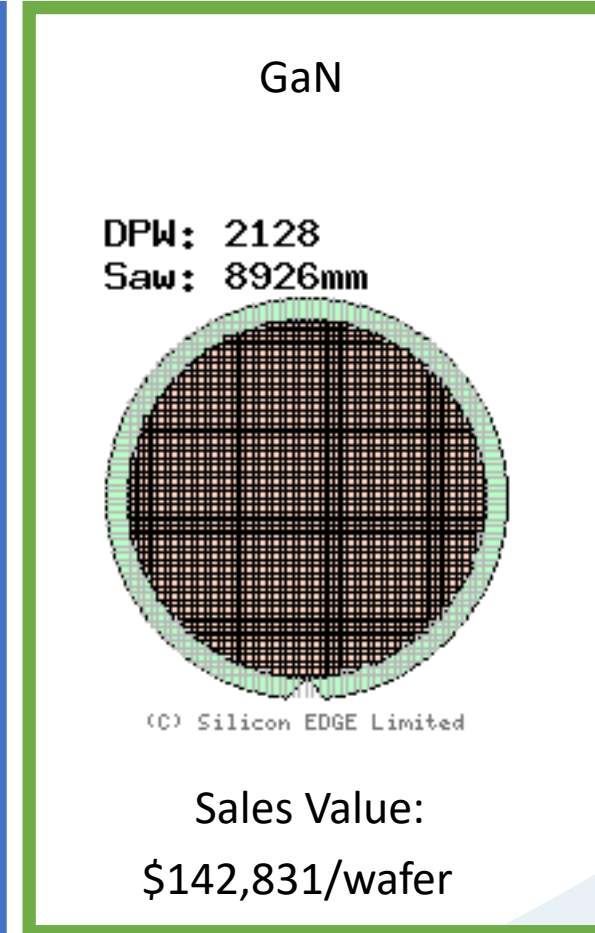
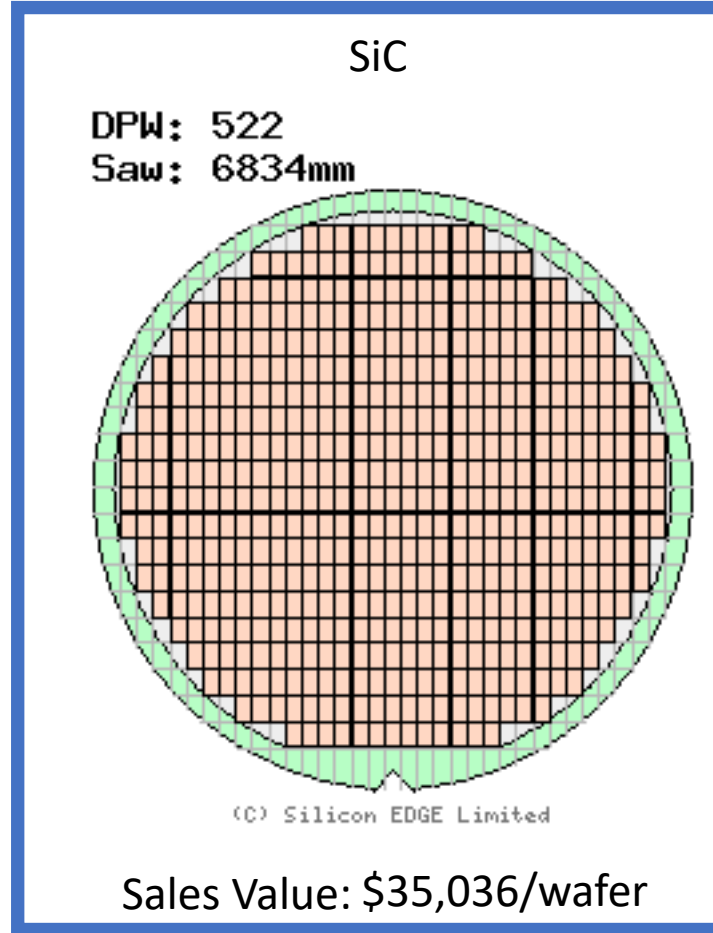
Silicon Carbide Power MOSFET
C2M™ MOSFET Technology
N-Channel Enhancement Mode

V_{DS} 1200 V

$I_D @ 25^\circ C$ 81 A

$R_{DS(on)}$ 25 mΩ

ASP
\$67.12/
device

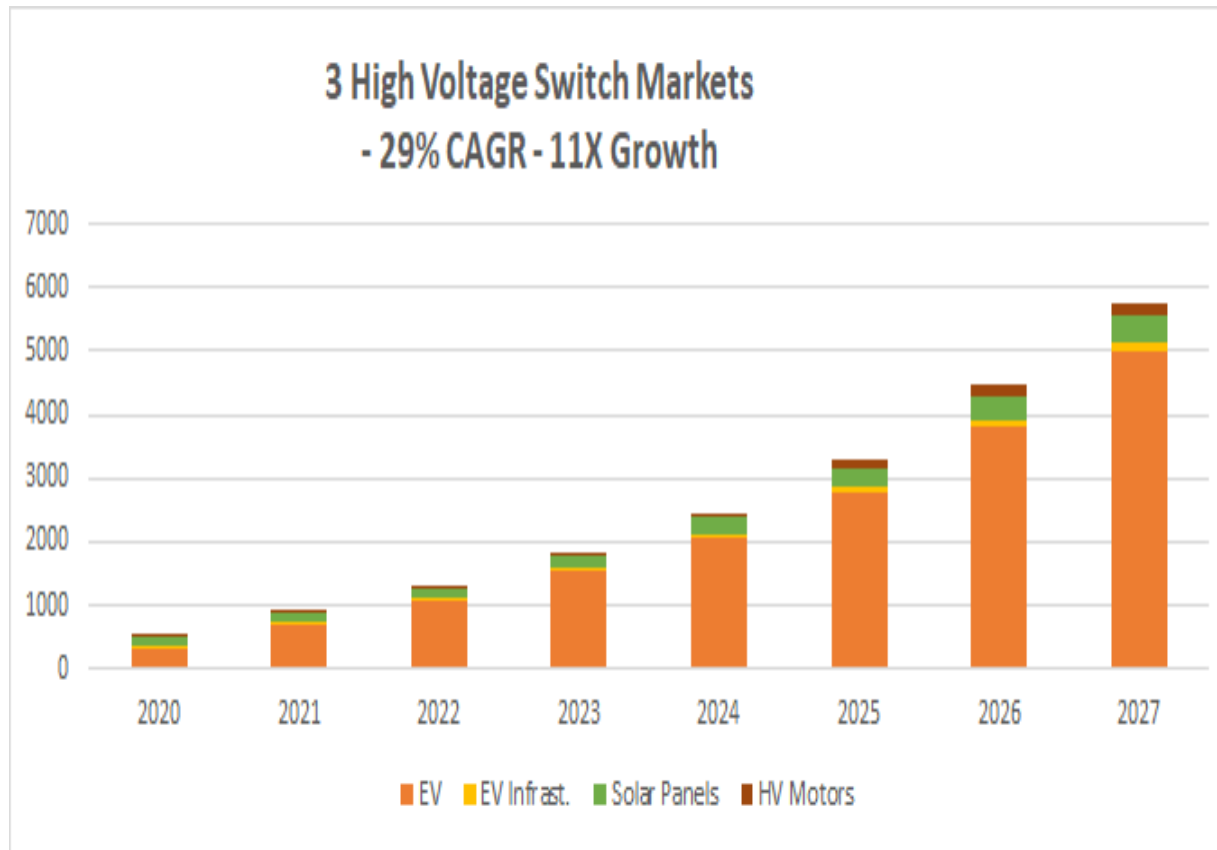


4" GaN wafer foundry can outproduce 6" SiC foundry by 4x/wafer

TAM for Odyssey Semiconductor's GaN-Based Vertical Conduction Devices

All SiC-based applications addressed by Odyssey' vertical GaN-based conduction devices

Odyssey is disrupting greater than \$3B silicon carbide market



Large growing markets for the technologies that Odyssey will deliver

Source: Yole Development

Key Takeaways from Yole: Development 2020 Power SiC Report

- **Upgrade to 800V battery vehicles represent a significant market opportunity for SiC** owing to its interesting performance/cost ratio compared to Si IGBT
 - The volume use of a higher cost SiC component is **dependent both on a significant reduction of cost** coupled with a lower battery size & cost savings enabled by using SiC. For the main inverter, this is where **vertical GaN has an opening to more effectively seize this opportunity**. The main inverter market is the driving volume in the overall SiC-based EV/HEV market (see next slide)
- To increase EV driving range (>400km) – need more efficient and higher power density main inverter. This may also drive people to think about multiple Inverters (1 per axel) or in wheel motors
- SiC is already used in On Board Chargers – OBCs, and is expected to be widely used in the coming years
- **GaN could reduce cost significantly**. GaN could enter in at least one premium car’s OBC starting in 2021. As Battery packs move up from 400 to 800V – the need for a vertical GaN device for OBC rather than a Horizontal GaN comes into play
- **“All most all OEM and Tier I EV Mfg keep an eye on/develop GaN for next generation EV systems...Thus the competition between SiC and GaN is extremely important to watch”**

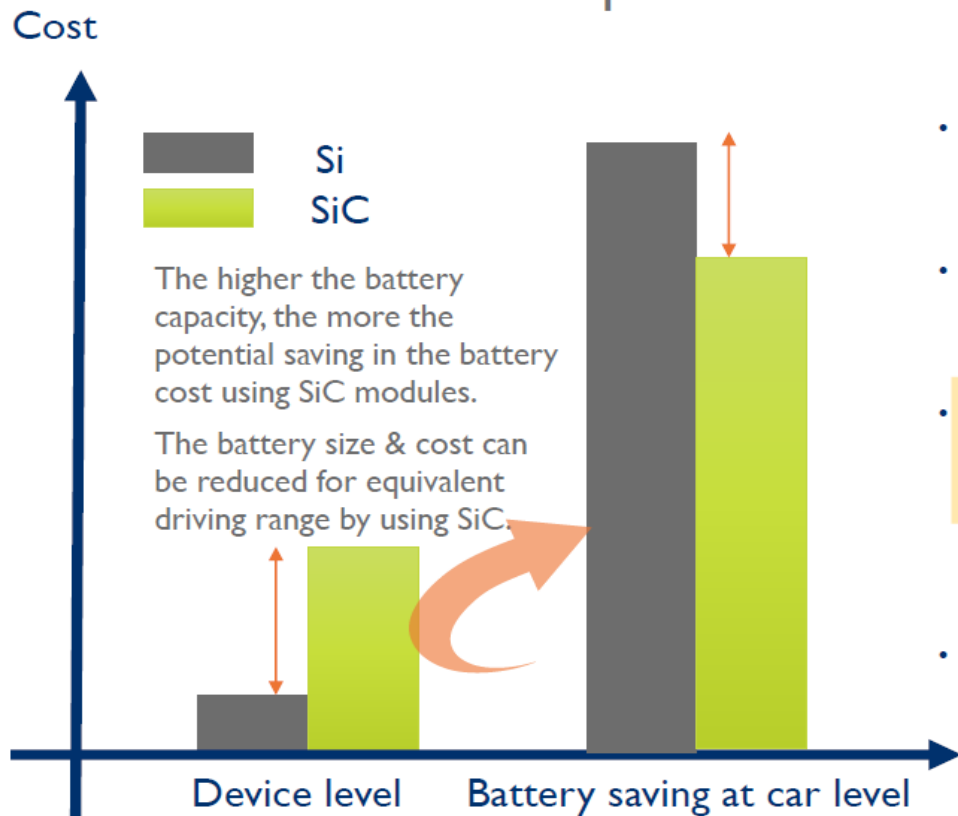
Odyssey is pioneering vertical GaN development.

GaN will drive replacement of silicon and silicon carbide in high voltage, high performance power applications.

Yole's Analysis of Cost Challenge in SiC Market from 2020 Power SiC Mkt Report

Need to crop this slide

Focus on cost aspects



The higher the battery capacity, the more the potential saving in the battery cost using SiC modules.

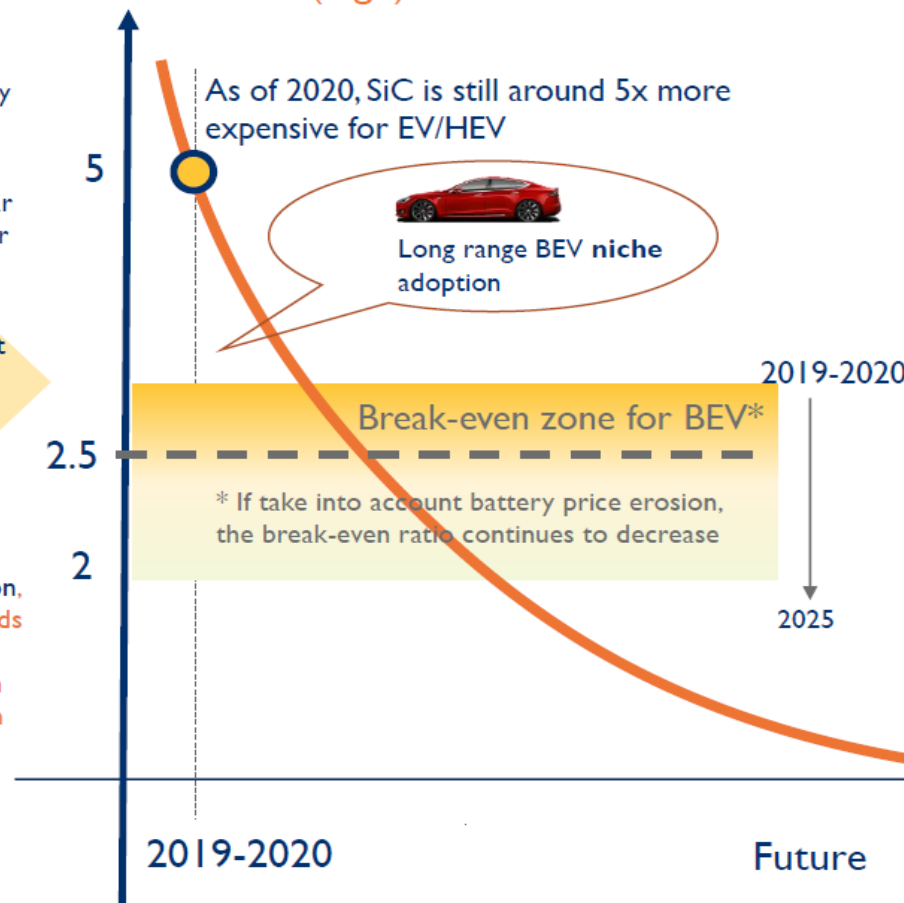
The battery size & cost can be reduced for equivalent driving range by using SiC.

*Not to scale – for illustration only

Battery Saving
(Hypothesis: 5% energy improvement)
Yole estimates \$5 to about \$750 of battery cost saving from mild EV to long range BEV.

- The break-even point for SiC/IGBT ASP ratio is highly dependent on the type of electrification.
- The break-even is at the car level but not at the inverter level based on current SiC device pricing.
- From the car owner's point of view, it does not matter whether it is SiC or Si, as long as it gives best cost/performance ratio. So Tier 1s/OEMs need to evaluate the cost aspects.
- According to our estimation, the ASP of SiC devices needs to fall by 2.5x to meet the break-even for BEVs, which means strong price erosion pressure on the device and wafer suppliers.

SiC/IGBT ASP ratio (high)



As of 2020, SiC is still around 5x more expensive for EV/HEV



Long range BEV niche adoption

Break-even zone for BEV*

* If take into account battery price erosion, the break-even ratio continues to decrease

2019-2020

Future

Power SiC Materials, Devices and Applications | www.yole.fr | ©2020

Customer Update—Vertical GaN

1. European Automotive OEM and an EV Company

- Mutual NDA signed
- Have had two discussions with them so far
- They have shared their requirements for devices
- Very encouraged by our results so far

2. US Automotive OEM and an EV Company

- Mutual NDA send to us (we've signed; they have not)
- Will see us when we are ready with >1 kV devices

3. Tier 1 European Module Subassembly Maker. Also has Large Industrial Division

- Very Interested will take unpackaged parts to test
- Has GaN manufacturing capability for devices and modules

4. Large US High Voltage Motor Mfg Co.

- Will re-engage with technical team when we can sample
- Have continued to give updates to CEO, both technical and business

Under Capitalized or More Leverageable Opportunity?

	Other Pub GaN Co. 1	Other Pub GaN Co. 2	Odyssey
Objective =>	Displace Silicon Power Switches <600V	Displace Silicon Power Switches <600V	Displace Silicon Carbide Power Switches >600V-4,000V
Invested Capital prior to SPAC/Uplist	\$ 102M	\$ 211M	\$ 9M
Years Invested	8	14	6
People on Board	162	104	14
Operating Loss in Q4	\$6.9M	\$ 3.7M	\$ 0.5M
"Odyssey View" of Size of Available Mkt	\$ 3B	\$3B	\$3B
Mkt CAP	\$705M	\$365M	\$20M

Financials

- Revenues of \$29,939 in Q1 2022
 - Generated from foundry service business being done for other companies: design
 - This is prior to shipping GaN product revenue. We plan to be shipping samples later this year
 - We also have new opportunities in services and plan to build the foundry service business
 - Mark – the new CEO will also be focusing on adding his experience in sales and marketing to this
- Diligently managing cash, the cash balance is ~\$1.6 million on March 31, 2022
- Cash used in ongoing operation was ~\$175,000 per month in Q1 2022
 - Favorably below the average of ~\$208,000 per month in 2021
- In addition, in Q1 2022 we spent approximately ~\$275,000 on Legal and Accounting Fees preparing for the S-1 and NASDAQ uplisting
- Also approximately ~\$70,000 toward the recruiting fees for the new CEO
 - CEO hired in April 2022. This will add to the Q2 and ongoing cash usage
 - We plan to add additional resources in a measured fashion, over time

Odyssey Investment Highlights

- **New Disruptive High-Voltage Power Switching Devices with Strong Intellectual Property**
- **Strong GaN Team & III-V Semiconductor Fab**
- **Rapid Growth available in High Voltage Market**
 - Strong Interest in Our Technology
- **Near to Medium Term Product Growth Strategies**
 - Longer Growth Runway
- **Working on Emerging from Development Stage and Raising More Capital Later This Year**

Appendix

Prototype Development Progress

- Odyssey conceived its current device design in the summer of 2021
 - Current design has many improvements over original implementation of the vertical GaN transistor
 - Lower gate leakage
 - Lower on-resistance
 - Much wider processing window
- Batches of new raw materials can take up to three months to obtain
- Rapid prototyping process runs have been completed, on average, every 2 weeks since mid-2021
 - Batches of new raw materials can take up to three months to obtain
- The only important device parameter left to achieve is breakdown voltage >1000 V
 - Several experiments are in progress and being completed every 2 weeks
 - Odyssey expects the confluence of all the important device parameters to occur sometime in this quarter

Odyssey GaN Processing Technologies Featured in Recent Articles

- *Gearing Up For Next-Gen Power Semis* in Semiconductor Engineering.
- *Going Vertical With GaN Devices* in Semiconductor Engineering.
- *Gallium Nitride Isn't New, But Its Latest Use is of Great Interest in Electric-Car Land* in Motortrend.

Those articles can be accessed on the Odyssey website at <https://www.odysseysemi.com/investors/news-events>