



Navitas Investor Meeting NY Nasdaq 7-26-21 Transcription FINAL 8-2-21.docx

## **Investor Meeting, Nasdaq New York, 7-26-21**

*Stephen Oliver, VP Corporate marketing & Investor Relations:*

Good morning, everybody.

Hi, I'm Stephen Oliver, VP for corporate marketing and Investor Relations at Navitas.

Thank you all for being here. It is a real pleasure to see everyone in person. And for those following online, we welcome to you as well really appreciate you all being here. Hopefully this thing is behind us, and we can take it onwards and upwards from here.

This is an exciting stage in the growth of gallium nitride, the next generation semiconductor technology. The information discussed today is qualified in its entirety by the form 8-K filed with the SEC today, and may be accessed on the SEC website, and also via Navitassemi.com. A video recording of today's presentation will be available shortly.

Please review the disclaimers included in the filing. Statements made during this call that are not statements of historical facts, or otherwise constitute forward looking statements are subject to risks, uncertainties and other factors that could cause our actual results to differ from historical results and or from our forecast. Do not place undue reliance on forward looking statements for which we assume no responsibility for updating.

After the main presentation, we will have a series of exciting customer presentations and then Q and A. We will alternate questions from those in person and those online. If you are online, please use the chat function on your laptop.

Now, let's learn about gallium nitride in a short video and then we'll welcome Gene Sheridan our CEO

[Video <https://www.youtube.com/watch?v=pNCIZQnlBy0> ]

*Gene Sheridan, Navitas co-founder and CEO:*

Okay, great. Well thank you everyone for joining us. It's a big day for Navitas, our first investor day, first of many to come. And I think very much one of the first hybrid events that the NASDAQ is putting on. So thanks to all of you that are here in the audience, as well as everybody zooming in from around the world. I wanted to hit a few of the high points and then we're going to introduce a number of speakers to talk through some of the key developments and the opportunities at Navitas. We are starting with gallium nitride technology, we're going to tell you all about it, but we view ourselves as the next generation power semiconductor company, a company that's going to change power electronics and power systems for decades to come.

Gallium nitride is a very powerful material as you saw in the video. It enables power electronics power systems to be up to three times smaller, lighter, faster weight 40% energy savings and ultimately, lower cost. We do it with a unique GaN power integrated circuit. Others making GaN discretes will tell you all about the merit and benefit of GaN power IC, and how that unlocks the full potential of GaN in power



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systems, we're off to a great start with the number one market position in this early market, over 140 GaN chargers in production, over 24 million units shipped without a single failure. All of this protected by over 130 patents issued or pending.

It's just the beginning. This is chapter one, there's a lot of fun chapters ahead. It's a \$13 billion electrification opportunity for GaN most of that is dominated by silicon, that's going to change dramatically. In the next five years, we're starting with mobile, and consumer a fast-moving simple value prop will tell you all about you're going to see those 140 gallium nitride chargers later, with demos, what we're going to quickly move into three expansion markets, enterprise sustainability, and electric vehicle or eMobility. GaN ICs are an incredible financial opportunity. It's also an incredible energy saving opportunity. With every GaN chip we sell has a four- to 10-times smaller carbon footprint than the silicon chip it replaces. We go into all of these end markets, and by 2050, we could impact up to 2.6 Gtons of carbon reduction by 2050. These are very big numbers. It's a very big opportunity. And we're equally excited about the financial opportunity as we are about the climate impact that we can have for our planet. It's a real pleasure personally. Much of this management team are people that I've worked with for 25 years, not the eight years or seven years since we started the company, but 20-25 years, some of the top people in power electronics and power semiconductors, a cumulative experience base of over 300 years. We have built products, we built technologies, we have built businesses together. But this is definitely the biggest achievement and will be the biggest achievement of our careers over the next 10 years. All of this has come together create really strong pipeline of opportunities, but not just a pipeline - real revenue, real revenue. Last year \$12 million, this year doubling, nearly tripling, the next year doubling or tripling again, we're off to a great start, but it's the tip of the iceberg of big things to come. So, with that, let me give a little bit more detail before I introduce some of the other speakers. Silicon has been the workhorse. This is what we used for the last 30 years to build power semiconductors, and to build power electronics. It was pretty good, but it's had its run. It's commoditized. Not very exciting. Not a lot of future performance gains, cost-reduction gains. Gallium - when you combine it with nitrogen - forms an incredibly powerful bond, 10 times stronger electric fields, two times faster electron mobility. What does all that technical mumbo jumbo mean? It means a really powerful chip to handle lots of volts and amps in a tiny size that is low cost fast and efficient. And if there's one theme I know nobody here of our investor group or power electronics experts, there's one theme to learn it's speed and efficiency. That's really the name of the game. And a GaN chip is the ultimate in speed and efficiency 20 times faster. Three times smaller, lighter weight, higher density, faster charging, big energy savings, as I said and ultimately lower costs.

Let me explain further about speed and efficiency. Why do they matter so much in power electronics? Speed on the left, efficiency and energy savings on the right. Power Suppliers are switching power supplies. The faster they switch, the more you can miniaturize the components inside the system. 50 to 70% of a power system are these big, ugly, bulky passive components. They store the energy, you switch slow, they need to store a lot of energy per switching cycle. Silicon traditionally switches slowly, for 30 years frankly at 50-65 kHz. Slow switching means big, bulky, expensive passives. You'll see in the demos later, opened-up a power supply, they look like they were designed in 1972 because they pretty much were designed in 1972 - lots of discrete components, big bulky passes. This is going to change dramatically when you can get away from slow-switching silicon. I know you think silicon is fast



switching in processors but these are high-voltage high power supplies built using silicon to create high-voltage, high-power supplies - has not been ideal for 30 years slow switching big, bulky, expensive power supplies. GaN has the potential to change all of that. You'll hear us talk a lot about GaN discrete and GaN IC. GaN discrete something means single-function transistor. The transistor is a core ingredient to a switching power supply. GaN discrettes get you going faster. When you go faster, you shrink those passive components miniature start to miniaturize them. But GaN discrettes have some limitations that we'll explain ultimately, our GaN IC that we invented nearly seven years ago unlocks that full potential, not a few 100 kHz up to a MHz for more dramatically miniaturizing these passive components, these are capacitors, inductors, transformers, filters, and the like. All of them shrink down. So speed is the key to reducing size, weight, and ultimately a large part of the cost. Efficiency is a little easier to understand, a power supply is never 100% efficient, it is moving, distributing and converting energy takes work to do that work is going to burn up that energy in the form of heat. Traditional silicon-based power supplies are about 85% efficient, that means 15% of the energy is used up in moving the energy, distributing it, converting it. When it burns up that energy it burns it up as heat. Heat is the enemy of reliability in electronics. When things run hot, they wear out faster, especially true in semiconductors. So we have a lot of motivations, obvious motivations for higher efficiency. 90-95% efficiencies are possible with GaN. That means we're getting the energy to work, whether it's moving a car, cooking your food, lighting up the lights or powering your phone, we want to put that energy to work, not waste it as heat, we can move from 85 to 90%, to 90% typically with GaN discrettes, but again here our invention of GaN IC unlocks the full potential. 95% and sometimes more efficient. What that means is 20 to 40% energy savings compared to traditional silicon power supplies. But again, cooler temperatures, better reliability. On top of it, a GaN IC integrates lots of things, including protection circuits, built in protection, this is something that silicon never had, and GaN discrettes don't have. So you've got a double benefit in improving that reliability, up to 100 times better reliability.

Now let me go a little deeper. Why is that GaN IC is so good compared to silicon, but also compared to GaN discrettes? We show on the upper row, traditional silicon discrettes, the discrete transistor as shown in the middle, the power device, that's a symbol for the transistor or FET field effect transistor, silicon was slow, you need a driver to drive that transistor shown here. Traditionally, that's been a standalone driver or built into a system controller. At low frequency, it doesn't matter. But there's a lot of parasitics. What are parasitics? It's unintended resistance and inductance, that slows down the speed and degrades efficiency creates some of that inefficiency, that heat that we don't like, low frequency. These parasitics that are inherent in the electronic design, the PCB design and the packaging aren't too big a deal because you're switching slow, so they're not slowing you down very much. But as we want to unlock the full potential of GaN, because switch at MHz range, these parasitics really matter. The other thing that matters is the silicon driver has to switch just as fast as the power device. So if I give you a great power transistor in GaN, but I don't solve the parasitics, I don't, and you're forced to use a complicated silicon driver, which is limited to the same speeds of 65 kHz or 100 kHz as the past, we have a problem.

This has been a problem for the last 20 years of people doing early work in GaN when we started our company. We knew if we didn't solve this problem, we will not unlock the full potential of GaN. And this commercialization of GaN would never occur. That's the beauty of a GaN IC, it actually integrates the



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silicon driver into the GaN Chip, it eliminates parasitics. So there's no delay, there's no inefficiency, and the driver in the transistor are now perfectly tuned in match to take advantage of the GaN material, the fastest, most efficient switch and power device possible. In a nutshell, this is a GaN IC. It also gives you the benefit I said before of built-in protection circuits are even higher reliability. On top of that, better efficiency and cooler temperatures. What does this all mean? I know it's very technical. At the end of the day, it's about the products, we're delivering a lot more power in a lot smaller size, a lighter weight, higher energy-efficiency - don't waste that energy don't create the heat - and ultimately a lower cost. And that's shown in all the examples we might give today. And then the demos later, whether they're silicon chargers or products, or even a GaN discrete products. Let me give you one more real-life example to try to bring it to life while still translating this to some of the technical concepts. Here we're actually comparing, a GaN discrete design on the left compared a GaN IC design on the right, if I showed you a silicon one, it would be even bigger and less efficient.

But a GaN discrete is embedded inside this MCM (multi-chip module). Why do we call it a multi-chip module because this supplier chose to integrate a couple of the system chips that you see in blue on the right are actually integrated, which is why it's bigger because it houses some extra system chips. Integrating those system chips does not create any performance advantage. It's a small convenience benefit to the customer. But more importantly, embedded in here is a discrete GaN, it doesn't solve the silicon driver problem, it doesn't solve the parasitics problem we talked about. As a result, it switches slow, in fact, the same speed that silicon has switch for 30 years. Why does that matter? The real action is not here on the GaN side. So, flip the board around, it's on the passives. Remember what I said the passive components are 50 to 70% of the size weighted cost to most power systems. These things because you're switching slow are still huge. These are all those inductors Transformers filters, capacitors added up and as a result, you really don't shrink the size you're not getting the power density benefit you would like from GaN . Contrast that to the GaN IC has the driver belt and has the protection circuits built in now we're switching six-times faster. Those yellow- and orange-circled passives have dramatically shrunk down from a top view you can see it's about half the size. Look at the profile. This is an OPPO charger - one of the fastest growing smartphone companies in the world where we co-developed this product, incredible size and weight, the thinness of almost like a cookie. In fact, they call it a cookie charger, over in Asia where it's developed the result here six-times faster. Switching gears a GaN IC three times smaller in size, or we say three times higher power density, three times the power in in much less size or cubic centimeters, a dramatic difference again, not just to traditional silicon, but to any alternative that might use GaN discrettes.

With that, I want to introduce to you my co-founder and very good friend Dan Kinzer. And I have been building technologies, businesses products. I would like to say from the 80s, he might be more like the 70s. But we partnered up in the mid 80s. In fact, we led the first gallium nitride investment at IR where we worked for two decades or more in the early 2000s. So, this company is not seven years old. We've been working on this technology for over 20 years. And we've been building great business in technologies for 25 years. And it's been a lot of fun. And we're looking forward to even more fun in the next 10 years. So welcome, Dan.



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*Dan Kinzer, co-founder and COO / CTO:*

Thank you, Gene. And thank you very much for that introduction. And thank you for that great introduction to the topic of GaN and GaN power ICs that we've been working on for the last seven years together Navitas.

And in that seven years, we've developed quite a few things. But in particular, we've developed a lot of intellectual property, which of course is a very key element in every company. It started with that amazing GaN transistor, the 650 V eMode power FET that we make - enhancement mode transistor - is the core of every one of our chips. It's the most efficient transistor there is 20 times faster, as Gene said, very small, three-, four- or five-times smaller than the silicon chips that it replaces.

But in addition to that, and because we recognized early on that GaN transistors need very special control circuits. And it's best to put those control circuits right on the chip next to the power device. Because then nothing gets in the way, nothing is in between the driver and the device that it's driving. So we started to developing a whole kit of over 20 devices, passives and actives in different voltage categories and different power ranges, signal devices and power devices. So that we could integrate lots of things. And we followed that, of course, with characterizing each one of those devices to develop very accurate models of all of those devices. So that then the guys that are developing the circuits, and libraries of components that we build into our chips, can be confident that the devices will perform as expected. And we can develop all those, all that list of analog and digital circuits, which we then combine into products. And in the course of doing that we've invented a lot of things. So, we do have over 130 patents issued and pending and as a result of this, and because we were a very early company trying to do this, really the first one commercializing these power integrated circuits, we have an intellectual property position that it's virtually, I won't say impossible, but very, very difficult to make, a GaN power integrated circuit that has high performance, low, low power loss that our devices do without somehow crossing the intellectual property that we've created in this process.

And of course, it's relevant, not just for the consumer applications that we're highlighting here today, but for the various other target segments that we have. And it's not just limited to devices, it's not just limited to circuits, we've patented the packages that we put our parts in and the systems some of the system topologies that people use as well. So, in building our product, we follow this relatively simple flow, we start with a very low cost, the lowest-cost perfect crystal substrate, you can start with a silicon wafer; highly available, very common, very low cost, nothing exotic there. We then take a tiny amount of GaN of gallium, combine it with nitrogen in an epi layer growth process, which is done in a commonly-available reactor, and a reactor that we can scale and volume. And those reactors are getting better and better in terms of delivering higher performance per unit cost. So, we are working with vendors on that as well and with our supplier. And it took that supplier - TSMC - for our wafers we've been working with for quite a long time, over 10 years, I've been working with TSMC. Since the beginning of our company, we recognize that they would be a great manufacturing partner. And we've worked together and help them and they've helped us to improve the manufacturability of the product, the reliability of the product over those years and continue to drive down the cost structure. So as a result of that, we've been able to achieve these kinds of yields over 90% from starting-wafer to out-the-door, and this kind of demonstrated field performance with no field failures. The other advantages are that unlike some of our



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some of the silicon devices that we're replacing, we have capacity, we have relatively short lead times. And as many of you know, the silicon market is very oversubscribed right now, and we have room to grow.

I also like to mention our packaging, with Amkor. That is highly scalable, and we have other partners as well. So we've adapted the industry-standard packaging process to make specific high-voltage and high-power packages for GaN, which are also patented. So, in doing this, how can we lower the cost? You see that a few years ago, it would have been extremely expensive to try to integrate GaN into a power system but here where we're sitting today in 2021, the price of a system, the cost of a system to integrate GaN is coming down very, very close to that of a silicon system. Still a little bit higher, a few percent higher, but we're anticipating a crossover in the cost of a system over the next one to two years. And within another year or so, actual crossover in the cost to make a GaN transistor to fulfill a given function. So, we're moving the bar in costs. We're doing that because we've been doing it for a while, as Gene said, we started looking at this field 20 years ago. We're very familiar with it. We spent seven years improving yields and manufacturability.

In addition to that, we're working with our partners to develop a new GaN generation every year, we're on our fourth generation now, and fifth generation will be coming. So, in addition to that, more and more functions and features are going to be integrated into our products every year, lowering costs for the customers to implement. And as we do all that will keep driving the frequency up, we'll go faster and faster, making those passives Gene showed you smaller and smaller.

Another big benefit is that - you can see it right there - we put milligrams of the raw material GaN into our integrated circuit, and we save kilograms of CO<sub>2</sub> emitted into the environment for every part that we ship. So this is a big part of our company's objectives to be a company that can move forward the efforts of the worldwide efforts to cut carbon emissions to mitigate climate-change effects.

If you look at our component itself, just the chip, we consume four times or you know, we cause the emission of four times less carbon than silicon chips do. And it's going up to 10, it will be 10 with our fourth-generation product next year. We also, because you can use these smaller passives, the smaller transformers, inductors, capacitors in the chargers, they have a smaller footprint, almost a third smaller footprint overall in in carbon emissions.

On a bigger scale, by implementing GaN and the efficiency improvements that it can bring to electric vehicles, we believe - and analysis has shown - that we can accelerate the adoption of electric vehicles by up to three years, which would save 20% of road sector emissions when combined with our high-efficiency performance of gallium nitride by the year 2050. So in that year, the GaN technology that we are working on, we believe can address 2.6 Gtons per year of carbon emissions. What does that mean? The world needs to cut carbon emissions by 25 to 30 Giga tons. So, there's 10% of the problem.

So, with that, I'd like to turn it over to Dave Carroll or worldwide sales, Senior Vice President.

*David Carroll, Sr. VP Worldwide Sales:*

I'm not quite as tall as Dan and Gene here. Thank you very much, Dan. And good morning, everyone. I'm going to start out with an overview of the mobile charger market.



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We chose the mobile charger market as our first target market because the value proposition is quite simple, and very compelling. Markets very large and the industry moves very quickly to new technologies. The trends in mobile devices are clear larger screens, or powerful batteries and processors result in mobile devices that are very power hungry and can take three to four hours for a complete charge. GaN IC's enable up to three times more power, and therefore up to three times faster charging in half the size and weight of traditional silicon chargers.

The market is actually quite large, two and a half billion mobile chargers shipped every year. And with the potential for \$1 of GaN content per unit. This is a two and a half billion-dollar market opportunity.

The value proposition becomes even more compelling when you integrate multiple chargers into a single device. As you can see here, there's three mobile silicon chargers - big and bulky - and they can be replaced with a single multi-port GaN charger which is three times smaller, lighter and actually less expensive than the chargers that it replaces. It's obviously a lot more convenient as well.

When we launched our first GaN IC's in late 2018, we saw aftermarket players quickly launching new products. By the time we got into 2019 we'd seen dozens of new GaN chargers coming to market from leading brands like Amazon, Baseus, AUKEY, Belkin and Anker.

Last year tier one OEMs began launching GaN chargers, many of them in-box models that chip inside the box with the mobile device. Today are our customers include leading tier-ones like Lenovo, Dell, LG, Xiaomi, OPPO and others.

We now have over 140 chargers in mass production, another 150 plus in development for deployment in the coming 18 months. We can't talk about products that have not yet been announced but we can tell you that we're working with more than 90% of mobile OEMs on new GaN based charger products. we've shipped over 24 million units without a single failure gives giving our tier-one customers high confidence in our quality, and reliability.

As I mentioned, we now have over 140 GaN chargers in mass production based on publicly available information. We believe this is more than all other GaN companies combined. While we do compete with other GaN companies, our primary competition remains silicon. That's really our focus is how can we drive all of these chargers to moving from Silicon to GaN. And as Dan mentioned, we're driving that cost down getting to Silicon cost, parity, and below, paving the way for all these charges to move from Silicon to GaN, going forward. And these trends only continue, you can see tier one, mobile OEMs announcing ever higher power platforms, moving from 20 watts to upwards of 120 watts driving the need for these GaN IC based solutions. In fact, eight of the 10 platform Shown here are based on Navitas GaN ICs.

Now moving to the non-mobile part of the consumer electronics market, we're focused on devices that need higher power in smaller and slimmer sizes. Specifically, we're talking about ultra-thin LED TVs gaming systems all in one PCs, and smart home devices GaN IC's make this possible, you can pack up to three times more power in the same size, and weight in the same form factor or make it three times smaller and lighter, at the same time, save energy.



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We've actually, we've established our lead customers in two of these segments, including a tier-one LED TV that is set to launch later this year, and a tier-one all-in-one PC also planned to launch later this year. Again, this is a very large market, over 600 million systems ship each year with the potential for \$3 of GaN content per unit. This is another \$2 billion market opportunity.

And with that, I'm going to hand it back to Gene to talk about our higher power expansion markets.

*Gene Sheridan:*

All right, thank you, David. So that's pretty exciting. Mobile and consumer alone \$4 billion GaN opportunity. Clearly as a company, at our stage, we could have just focused on mobile and consumer. And I think the potential expectations for hundreds of millions of dollars over the next five to 10 years in those two segments very tempting. In fact, we debated it heavily before deciding to move forward on the IPO. And a major consideration for the IPO was to attract additional capital to leverage the full potential into additional markets for GaN. So I want to tell you about these three market expansion areas. We're just getting started product developments have started, customer engagements have started, we'll be launching the first commercial samples of GaN ICs into three new segments by the end of this year. Let me talk about those segments, one by one. First, data centers. Data centers are famously a big power hog nearly 50% of the cost to operate a data centers related to power, cost of the power supplies, cost of the cooling and cost of the electricity itself. Data centers are famously inefficient. A silicon-based data center today is only 75% efficient. That means 25% of the energy going in gets burned up as heat and never reaches the data processors, which is the whole point of a data center. That's a real travesty. Gallium nitride can cut that energy waste by about 35% or about 10 points, bumping a GaN based data center to about 84% efficient.

When the whole world moves to GaN data centers - and I believe they will - that will save nearly \$2 billion in annual electricity costs alone. But that's only a part of the picture. If you burn less energy up, you create less heat, you'll spend less money on cooling that has not factored into the numbers. And believe it or not, power density matters, you think a data center is huge. Every square foot matters in the racks where these power supplies go. Today, nearly half the rack is for power supplies. The other half is data processors. By shrinking the size in the example given on the lower left, we can deliver the same 3000 watts in this example in half the size. That means less footprint in the rack is dedicated to power processing, so we can dedicate it to data processing. In the end, that's the goal of a data center. So this is a great example of big savings on energy, electricity costs, big benefits on cooling, but also big benefits with power density. We've already lined up our first customers, as I mentioned, we're developing the lead commercial samples now to deliver to them in Q4. Luckily, many of the same consumer and mobile customers that Dave was referring to are also playing in the space, we know them well. They're anxiously waiting to samples, to start commercial development at scale up again at the end of this year.

Let's look at the second market, solar. If you boil down solar, it's really all about cost per watt. What's the cost to implement the hardware to implement solar, and how much free energy or free watts am I going to get, to pay back that hardware costs? Cost per watt is what is what GaN is really good at. While we can't make the panel itself better, we can make dramatic gains in the number two problem, if you will, in terms of efficiency and cost, which is the inverter. Inverter is just the name in solar for the power





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supply. It takes the energy from the panel and converts it to your house back to the grid to energy storage to charge your EV. We can make huge gains with that inverter, we estimate 25% lower inverter costs using GaN in the next few years and a 40% or greater energy savings. Put that together our estimate is we can improve this solar payback, how fast do I pay back that hardware installation by 10% or more of the next few years. This is a huge opportunity, fits like a glove for GaN. We've already identified our lead customer who has already committed to move from silicon to GaN over the next few years, that customer alone is over a half a billion dollars of GaN revenue for Navitas potentially, when it would start in 2023 over the subsequent seven years through 2030. And in total, we estimate the GaN market here conservatively - just solar residential, actually not even counting solar farms and larger scale implementations - to be over a billion dollars per year.

And third, and probably the biggest but it will also take the longest to commercialize his electric vehicle. If you think here, what is holding back EV adoption, I would argue there's three factors. EV cars are still a little bit more expensive than their gas counterparts. Drive-range anxiety is still a major consumer concern and where you're going to get your next charge and how fast is that charge going to come? Three factors, and GaN can play a big role in all three factors.

In the car picture on the upper right, GaN is mainly used in three areas, the onboard charger that's a natural one, just like we can fast charge a phone, we can fast charge a large high power high voltage battery in your car. But once you get the energy on the battery, you got to take it off. That's the high voltage DC to DC to convert that energy from the battery to power the rest of the electronics in the car. And then the other big one is the electric motor or traction drive, where you're converting that energy into moving the car.

GaN plays a big role in all three. In fact, our first lead customer is focused on the on-board charger and the DC to DC converter. Here again, they've already decided to move from silicon to GaN for their next generation designs and the impacts will be significant. This is a today's benchmark on-board chargers even in a Tesla are around six to 7000 watts. It sounds like a lot of power. That's actually pretty slow charging. When you charge at your home can take up to 10 hours. Overnight, that's fine, but not everybody has 10 hours to charge your battery at home. We're developing an onboard charger that is three times more powerful about 20,000 watts - three times faster charging and about the same size and weight or less than the one it's replacing. That is huge. It's a \$400 million gain revenue opportunity when it would start in production in the 2025 timeframe. That alone is \$50 of content, at 50 million cars, two and a half billion dollars potential but then there's still the DC to DC converter and there's the traction control or electric motor as opportunities. Once the entire power electronics moves from silicon to GaN, not only will we dramatically improve the charging time as I described, but actually our estimates from key customers that helped us develop these estimates, are that all that energy savings will ultimately translate into a significant savings on the battery, on average about \$500. Those are big numbers, again, getting the cost of an EV, ultimately to the same cost of gas cars or less. But also, conversely, extending that driving range by 5%. Every 1% is extremely hard to come from in the EV space, so 5% for one technology change is of course a big deal and an exciting improvement.

So, let's come back to the bigger picture. The market opportunity today for these markets we target in silicon is about 9 billion last year. GaN is in its infancy, maybe 20 million, mostly from Navitas last year,



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the overall market projected to be 13 billion. The GaN projection by third party estimates is expected to be 2 billion of that. That's an exciting growth going from 20 million to 2 billion in just the next four or five years, or doubling every year. That's extraordinary but keep in mind it's only 15 to 16% of the \$13 billion potential. That 2 billion will also be nicely diversified across the five segments we talked about mobile and consumer going first but data center or enterprise, renewable and solar and EV and eMobility kicking in significantly.

Let's take a look at how those ramp in terms of our financial plan last year, as they said \$12 million this year 27, virtually all coming from the mobile charger space next year ramping significantly, again, dominated by mobile with some of the consumer applications that they've talked about kicking in, there was thin TVs, all-in-one desktop PCs as to first examples of a much bigger consumer potential. And then although we're delivering the samples - the GaN IC commercial samples I said - to all three, expansion markets, solar data center, and EV, they all kick in at different times depending on the customer's development time. Data centers is typically 12 to 18 months from building first prototype to commercial production release. Solar tends to be two to three years. Electric vehicle tends to be three to four or sometimes five years. As such, you'll see in 23, enterprise and solar really kicking in there strong, strong growth into 24. And then we see our first EV revenues starting in '24 and ramping fast into '25 for a total \$640 million plan. Again, this looks like an exciting growth trajectory. And it certainly is this represents only about a third of that \$2 billion. That \$2 billion represents about 15 or 16% of that broader potential 13 billion that we're really targeting.

How does it look in the short term? I talked in the beginning about a total pipeline of 680 million, I want to give you a little bit more clarity on that. The awarded piece is about 100 million. By awarded we means we mean these are production programs, using our GaN IC either in production today, or committed to go to production in coming quarters using Navitas GaN. That 100 million alone gives me great visibility and confidence to this year's 27 million and next year's 69. But on top of that qualified opportunities are committed-production programs that have high interest in the GaN, but they haven't made the final decision yet. That represents significant upside for us this year, and next. And as Dan highlighted, we're lucky that our supply chain is so efficient, and has actual significant upside to it that we can capture that in what is otherwise a very tight semiconductor industry. But also a big part of that 580 million are the early opportunities I defined in solar, data center and EV that gives me great competence in not only 22 but 23, 24 and 25.

And finally, I want to introduce our head of finance, Todd Glickman. He's going to talk a little bit about our short term and our long-term business model. Welcome, Todd.

*Todd Glickman, Sr. VP Finance:*

Thanks, Gene. So in combination with accelerating revenue growth, we're also accelerating our gross margins. While we finished the year of 2020 at 31% gross margin, we quickly transitioned to our second generation of technology and are on track to hit our 46% growth margin for 2021. In Q1, we closed at 44% and are again moving towards that 46% long-term for 2021. However, that's only the first step in our process. Going from '21 to '26, we expect to expand our margins through four focus areas. First, we're going to develop new generations of technologies every 12 months and these new generations will create a 20% generation-over-generation cost reduction, with the majority of this cost reduction



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being passed along to our customers, because our ultimate goal is to drive that GaN premium to zero. Secondly, additional integration. Right now, we've been we've integrated drive control and protection. However, we're just scratching the surface there. With each of these new generations to technology, we're going to add new features, which will help simplify the adoption of GaN across all our end markets. And then optimize our supply chain as we move into additional end markets. And then as revenues ramp, we plan to drive our cost materials lower, passing along that to our customers as a slight offset to ASP.

But long term, we're here to go 55% margins. Now that is our choice. We believe that there's upside to go to a 60% margin long term. However, our goal is to drive adoption first and then margin expansion, after we've converted a large portion of the market from silicon to gallium nitride.

Now if we move to the upper left-hand corner, you're seeing that we have a negative EBITDA today. However, with the help of the 100 million in awarded customers in our pipeline, we expect to pass into a positive territory in '23, and then reach a very healthy margin of 25% by 2026, with the majority of our operating expenses allocated to research and development.

Now the great part is we can do all this with zero capital expenditures. Today, we're operating with zero. And all the capex that you're seeing going forward is going to be related to a minimal amount of test and manufacturing equipment. But long term, we are going to represent less than 5% of our revenue, allowing us to maintain our identity as a fabless semiconductor company.

So with that, I'm going to hand it over to Rick, our partner at Live Oak to discuss the transaction. Thanks.

*Rick Hendricks, Live Oak CEO:*

I'm Rick Hendricks, CEO of Live Oak Acquisition II, and as that name sort of indicates, as a second SPAC that our team has put together.

We are obviously thrilled to be here with Gene and his team from Navitas. We originally met Navitas in December. I think in fact, our first meeting, Gene was in his Tesla, doing a zoom call with us. But we spent quite a bit of time here in advance of announcing a merger. I think I want to talk a little bit in a minute about just how we approach underwriting. But in terms of the transaction itself, all of the existing Navitas shareholders are rolling into this transaction. Included in their current investor base are firms like Capricorn, who many of you know is a very well-recognized, sustainability-focused, private-equity investor. Atlantic bridge, who has deep semiconductor experience, as well as a number of their customers as strategic investors. So, all of them roll into the transaction. We have a \$145 million PIPE that was raised in what was honestly sort of a tricky PIPE market. We were fortunate, we went out looking for \$100 million, and we're able to upsize even in difficult market. I think that's great validation for how investors have looked at the transaction, the valuation and the company itself. And then from a sponsor standpoint, we have chosen to really align ourselves with Gene and his team in terms of what the sponsor economics look like in this transaction. And what that really means is there is an earn-out here for the Navitas shareholders that is 10 million total shares, and invests at \$12.50, \$17 and \$20, a share a third, a third a third, we have differed 20% of the sponsor economics to vest on those same terms. We've gone really beyond that, because we've taken the other 80% of the sponsor economics and gone into a longer-than-typical lock-up alongside management. So, both the inside shares the



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management owns and the Live Oak sponsor shares are subject to as long as a three-year lockup. It Again, it's sort of a third, a third, a third structure with one-, two- and three-year periods. We think this is really the right way to be aligned not just with our partners here, but with the market. Right and though the SPAC market has gotten, you know, much more difficult over the past several months.

I think some of the reasons for that are that, you know, there isn't always perfect alignment between sponsor groups and public company investors, and so, we've got a long way here, we believe and we hope everyone else believes to, to be fully aligned with the market and in the new investors, whether they are pipe or public in nature, in terms of the valuation itself. It is that 5.7 times the 2023 revenue.

What you'll see on the next slide, you know, we look at this as a very significant discount to peers, the peer valuation, we worked off of 22 revenues simply because not all of them have 23 revenue out there. At the end of the day, honestly, we think CREE is the right comp here. You can look at a whole bunch of, you know, sort of legacy power semiconductor companies, many of which have, you know, still significant multiples. They don't have the same growth dynamic that Navitas does. One of the things we love about Navitas as an investment opportunity, is that while this is game-changing technology, not just for GaN, right, but within the GaN universe, the GaN IC approach, they didn't really wait for the market to come to them. Meaning wait for electric vehicle manufacturers to engineer GaN into their products or wait for solar manufacturers to go ahead and work gain into the micro inverters. They went after the market that has the shortest design-cycle, which is consumer electronics. I mean, this is a real business with real revenues, but with enormous growth opportunity, because of these additional end markets. Honestly, just the consumer electronics market by itself is pretty interesting from a growth perspective and really puts Navitas out in front of its peers growth wise, but these bigger end markets, I think, you know, present what we view as a really unique opportunity here.

Now, the way we approach it, honestly, everything we underwrite but here in particular, this was done sort of private equity style, which is why you know, we met Gene and his team in December and announced a deal in May. We hired McKinsey to work with us on the end-market analysis in terms of adoption rates and market size. We hired KPMG and their semiconductor team in particular, so not for their accounting work but for their industry work in semiconductors. They went out and augmented their team with an industry specialist who personally holds over 200 patents in GaN, primarily GaN on Sapphire, but to really allow us to go deep around this whole GaN IC technology. Because in truth, as you know, capital markets and private equity investors, we couldn't have on our own really differentiated between GaN discrete and GaN IC. So we had a big team helping us with all that we had FDI helping us with the numbers and with tax. And within that whole process, and I will admit, there were times when I felt bad for Gene the team because we, we really did go deep. You know, we also talked to between 15 and 20 of their customers.

That is not easy to do that that virtually never happens in an IPO underwriting exercise. And even within a private equity underwriting exercise, you know, very few companies are going to let you talk to their prospective customers, right, where they're still in negotiation around sort of the commercial terms of what their relationship is going to be. And Navitas was open to all of that, and more importantly, the customers that they're talking to, we're open to it. And I think you're going to see an example of that here in a minute, or a couple examples with, with the videos that Steve's going to run, and I think even a



live discussion, but to have the ability to talk to, you know, an OEM and the electric vehicle world. Actually, an OEM just in the automotive world with a power engineering firm focused on that EV market, with a solar player, with players around data centers, it gave us huge confidence in, you know, what these other high growth end markets look like. And as one of the reasons that we think that the discount that this is coming at, relative to peers is, you know, extraordinarily attractive. Again, we not only took the time, but expend the dollars and brought in, you know, teams that had real depth of expertise and reach into these markets, to validate, you know, what this Navitas opportunity is all about. So we couldn't be more thrilled to be here. We're really proud to partner with Gene and his team. And I'm going to turn it back over to Steve, I think.

I guess I can flip forward to this slide. To be honest, I waited to do this because I don't love this slide. This, this is sort of what I'll call the ubiquitous SPAC valuation slide. You know, looking forward, as I just talked about a minute ago, comparing ourselves to the '22 multiples of peers, right, and then discounting that back for a year, because we're looking at '23 is the valuation year for Navitas. And you can see it's coming at a very, very significant discount to the group. But, you know, again, personally, I think that the right you know, appear here is CREE. And if you focus there, you would see, you know, even bigger discounts, but all of this is just, you know, sort of a visual of, you know, how we sort of think about value, but the truth is, you know, in this particular case and I'd like to think in all cases of things that we work on at Live Oak you know, we try to really focus on the underwriting process to validate value and not just the you know, discounts like this to appear set. So, Steve, thank you.

*Stephen Oliver:*

Thank you, Rick. And we'll now have some customer testimonials. We have three recordings from Lenovo, OPPO and Brusa and then we have a live Enphase presentation. Thank you.

*Chang Liu - Vice President, Head of OPPO Research Institution:*

I am Liu Chang, Vice President of OPPO and Dean of the OPPO Research Institute. Our mission is to use technology for a better world for us all, regardless of how science and technology progress. We always believe that people are the starting point and the end goal of all scientific and technological activities. We also always adhere to the concept of altruism and win-win strategy and work with our partners to build an open, symbiotic, and co-prosperous ecosystem and to realise everyone's pursuit of beauty, imagination, and humanity through scientific and technological means. The cooperation between OPPO and Navitas Semiconductor began in 2017. In the past four years, we have collaborated to provide users with many excellent products. In July last year, we were honored to receive the commemorative trophy from Navitas which stands for the successful shipment of the 5 millionth GaNFast power IC to OPPO. This marks the 5 millionth mass produced Navitas GaNFast GaN power IC that entered the consumer market in OPPO's products. Navitas GaNFast GaN Power ICs helped OPPO products to achieve user experience that exceeds consumer expectations and unique product performance. We appreciate working with Navitas to create very meaningful and valuable products using Navitas GaNFast GaN Power ICs with monolithically integrated gallium nitride FETs plus protection and control. Navitas is the pioneer to adopt this technology strategy in the industry. Based on this, we successfully launched the industry's



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first high-power density, ultra-thin OPPO 50W SuperVOOC cookie charger which is smaller, lighter, and thinner than any other previous product. The charging products developed under the technology direction of the cookie charger will also contribute to better energy savings, longer product durability and eventually help us protect the environment. We appreciate the strategic value of new topologies and products developed by our close strategic cooperation between OPPO and Navitas Semiconductor engineering team. We look forward to continuing our long-term and successful cooperative relationship with Navitas. I wish Navitas all the best.

*Dr Bernhard Budaker - Vice President, BRUSA HyPower AG:*

Hello, my name is Bernhard Budaker and I'm Vice President at BRUSA HyPower AG and responsible for the Product Division Power Electronics. BRUSA is one of the pioneers in electromobility with over 35 years of experience in developing high-end solutions for an electrified mobility future. Our vision is to provide technologies and products with long-term benefits for our environment and society. BRUSA HyPower's products are "On Board Chargers" and "DC/DC converters" with applications in on and off highway market segments. The efficiency, power density and overall size and cost of our products are driven by the performance of the power semiconductors. Our current product line up is based on a combination of classical Silicon IGBTs and Silicon-Carbide wide-band-gap power semiconductors. BRUSA HyPower is convinced that Gallium Nitride – or GaN - will enable us to further improve our products. The main advantages of Navitas GaN power ICs, are simplicity of driving, high-speed switching performance, increased reliability and compact form factor. We have partnered with Navitas since 2020 as for us it is very important to work with cutting edge technologies in our products. The technological insights provided by Navitas enable us to conduct advanced engineering projects and to ensure that BRUSA HyPower stays ahead of the competition. BRUSA has a focus on sustainable 'Green Product Innovation', and Navitas GaN power ICs will be a key factor in reducing the size and weight of our charger products even further and reducing the CO<sub>2</sub> footprint. We look forward to a long, successful relationship with Navitas and wish them well.

*Jun Liu – Executive Vice President, Lenovo Group and President, Lenovo China:*

Hello everyone! Lenovo is committed to becoming a global leading provider of smart products, smart infrastructure and intelligent services. As a third-generation semiconductor technology, GaN can improve charging efficiency, reduce charger size and improve customer experience. We see GaN as one of the future directions for Lenovo's power adapter conversion including mobile, laptop and data center solutions. We have launched chargers ranging from 65 W to 90 W and higher up to 130 W which have been successfully used in some models of YOGA laptops, Legion phones and we have received positive feedback from our customers. With a strong commitment to a healthier, greener planet, Lenovo has developed an aggressive carbon reduction plan for the next 10 years. We believe that the smaller, lighter and more efficient Lenovo chargers supported by Navitas GaN Power ICs will help Lenovo successfully achieve its carbon reduction goals. We wish Navitas Semiconductor a successful IPO!

*Stephen Oliver:*

Hello, Mike. Hello, control room. Can you help us? is Mike listening? Can he speak?

*Michael Harrison – Power Electronics Architect at Enphase Energy:*



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I'm here.

*Stephen Oliver:*

There he is okay.

Since graduating from the University of Auckland in New Zealand, Mike has gained over 40 patents in semiconductors and power electronics. Mike is the chief power architect for Enphase and is in charge of bringing new technology to enable n phase to retain their market lead as number one in solar micro inverters. Mike, take it from here please.

*Michael Harrison:*

Thanks for the introduction, Steve.

Hello, I'm Michael Harrison, power electronics architect at Enphase energy.

Enphase's purpose is to advance a sustainable future for all by delivering technology solutions that make clean energy more affordable, reliable and accessible. Enphase is the world's leading supplier of micro inverter based solar plus storage systems with three guiding commitments. First innovation to continuously innovate and develop new technologies that make energy more intelligent, more connected and more cost effective than ever before. Second is quality. So at the heart of what we do and is the bedrock of the Enphase product design. Enphase solar micro inverters achieve an industry leading reliability of 500 parts per million defect rate and are backed by a 25 year product warranty. And thirdly, responsibility. We are driven by a sense of responsibility towards that one it and our communities. We believe we can have the biggest impact on the planet by pursuing our mission to bring solar energy mainstream

cincin Section Enphase has shipped 34 million solar micro inverters and approximately one and a half million Enphase based systems have been deployed in more than 130 countries. Nine DC gigawatts of Enphase micro inverters have been installed in solar energy systems offsetting 20.8 million metric tons of co2, the equivalent of providing electricity to three and a half million homes for one year. With their net zero program Navitas is aligned with Enphases objective to reduce carbon footprint and accelerate the transition to renewable energy using gallium nitride power bases.

After 25 years of development, it's the end of the road for silicon MOSFETs. mbaise is considered both silicon carbide and gallium nitride technology for adoption in micro inverter products. Silicon carbide technology can offer two times switching frequency advantage over silicon at similar cost. However, gallium nitride offers more than a tenfold switching frequency and system cost advantages making it particularly attractive for the Enphase micro inverter application. Enphase has had a relationship with Navitas since 2015. We appreciate the focus on and support of the M phase micro inverter mode roadmap with gallium nitride at its core. Enphase believes gallium nitride is a key part of its innovative technology future. Over to you, Steve.

*Stephen Oliver:*



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Thank you very much, Mike. We appreciate you being there from Petaluma. And thank you for your input into gallium nitride and Navitas today, thank you. Thanks, Steve. Okay, that ends the main presentation portion.