(WOLF) Q2 2022 Earnings Call Transcript

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(NYSE: WOLF)

Q2 2022 Earnings Call

Jan 26, 2022, 5:00 p.m. ET

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Good afternoon. Thank you for standing by, and welcome to the Wolfspeed Inc. second-quarter fiscal year 2022 earnings call. At this time, all participants are in a listen-only mode, and all lines have been placed on mute to prevent any background noise.

[Operator instructions] Please note today's call is being recorded. I would now like to hand the conference over to your first speaker today, Tyler Gronbach, vice president of investor relations. Please go ahead.

Tyler Gronbach -- Vice President of Investor Relations Thank you, and good afternoon, everyone. Welcome to Wolfspeed's second-quarter fiscal 2022 conference call. Today, Wolfspeed's CEO, Gregg Lowe; and Wolfspeed's CFO, Neill Reynolds, will report on the results for the second quarter of fiscal year 2022. Please note that we will be presenting non-GAAP financial results during today's call, which is consistent with how management measures Wolfspeed's results internally.

Non-GAAP results are not in accordance with GAAP and may not be comparable to non-GAAP information provided by other companies. Non-GAAP information should be considered a supplement to and not a substitute for financial statements prepared in accordance with GAAP. A reconciliation to the most directly comparable GAAP measures is in our press release and posted in the Investor Relations section of our website, along with a historical summary of other key metrics. Today's discussion includes forward-looking statements about our business outlook, and we may make other forward-looking statements during the call.

Such forward-looking statements are subject to numerous risks and uncertainties. Our press release today and the SEC filings noted in the release mention important factors that could cause actual results to differ materially, including risks related to the impact of the COVID-19 pandemic. During the Q&A session, we would ask that you limit yourself to one question and one follow-up so that we can accommodate as many questions as possible during today's call. If you have any additional questions, please feel free to contact us after the call.

And now, I'd like to turn the call over to Gregg.

Gregg Lowe -- Chief Executive Officer

Thanks, Tyler, and good afternoon, everyone. Thank you for joining us today, and I hope you and your families are safe and healthy. I'm pleased to report that during the second quarter, we continued to execute and drive our business, delivering strong revenue and non-GAAP diluted earnings per share at the high end of our guidance. Now, last November, we held an Investor Day at the New York Stock Exchange, where we outlined how the team is focused on driving the industry transition from silicon to silicon carbide by expanding our leading market position with innovative new solutions, building additional capacity in New York and North Carolina to support what we see as a steepening demand for silicon carbide solutions, growing our opportunity pipeline and converting to design-ins at a very robust pace. And finally, building out our bench of semiconductor leadership expertise to help us optimize operations and achieve our long-term growth objectives. Our strong results this quarter clearly demonstrate the progress we're making and the momentum we are building to support the multi-decade growth opportunity ahead of us. I'll now turn it over to Neill, who will provide an overview of our financial results for the second quarter and an outlook for the third quarter of fiscal 2022. Neill?

Neill Reynolds -- Chief Financial Officer

Thank you, Greg, and good afternoon, everyone. We delivered solid results during the second quarter as we continued to see strong demand for our silicon carbide solutions. Revenue for the second quarter of fiscal 2022 was $173.1 million at the high end of our guidance range, representing an increase of 11% sequentially and 36% year over year. Our non-GAAP net loss was $18.6 million or $0.16 per diluted share, also at the top end of our range.

Our second-quarter non-GAAP earnings exclude $78.1 million of expense, net of tax, or $0.67 per diluted share for noncash stock-based compensation, acquired intangibles amortization, accretion on our convertible notes, project transformation and transaction costs, factory optimization start-up costs, loss on debt extinguishment and other items outlined in today's earnings release. Looking at second-quarter performance, we delivered our sixth consecutive quarter of sequential growth. We continue to see strong demand for our power device solutions, resulting in revenue growth of approximately 35% over the prior quarter and growth of 100% over the prior year as we saw significant growth in both direct and distribution channel customers. On the RF device front, we continue to see solid demand from a 5G and aerospace and defense perspective, which increased over the prior year, but was relatively flat over the prior quarter as we continued to increase capacity.

From a materials perspective, demand for our 150-millimeter silicon carbide substrates remains very strong. This resulted in year-over-year growth roughly flat versus prior quarter as we continue to increase capacity and better match supply with demand. Second-quarter non-GAAP gross margin was 35.4%, compared to 33.5% last quarter. The 190-basis-point improvement was driven by improved output cost and yields from our Durham fab and Malaysia subcontractor.

And lower depreciation expense resulting from the previously announced change in useful lives of certain assets, partially offset by the higher device product revenue mix at lower profitability. As Gregg mentioned earlier, adding to our management team with proven semiconductor leadership is a critical factor to our future success. And the Durham fab team, now led by Missy Stigall, has made solid progress in a relatively short amount of time, already contributing to positive results. In addition, we recently added Joe Roybal, who has more than 20 years of semiconductor manufacturing experience to lead our global back-end operations, including oversight of our subcontractor in Malaysia.

Looking ahead, we expect continued operational improvements in our Durham fab and our Malaysia subcontractor will have a positive impact on gross margin and capacity for the remainder of the year. Looking at our consolidated results. Non-GAAP operating expenses for Q2 were $86.6 million, and our non-GAAP tax rate was 27%. The increase in our operating expenses was largely due to R&D, including investment in our 200-millimeter efforts and hiring to support our sales and marketing activities. For the second quarter, days sales outstanding was 48 days and inventory days on hand was 154 days. Cash generated from operations was negative $32 million and capital expenditures were $144 million, resulting in free cash flow of negative $176 million. We currently have approximately $700 million of cash and liquidity on hand to support our current plans. Additionally, in December, we completed the redemption of our 2023 notes, leaving us with convertible debt with a face value of $575 million.

We believe this transaction better positions us to capitalize on increasing demand by strengthening the balance sheet, increasing optionality, and preserving cash during our peak investment period. We will continue to be opportunistic from a capital market standpoint to ensure we have the flexibility to invest as we see fit to capitalize on a market-leading position and support continued growth. During the quarter, we incurred start-up costs primarily related to Mohawk Valley, totaling approximately $11 million. As we've discussed previously, we expect a total of $80 million of start-up costs in fiscal 2022 with the majority of these costs incurred in the second half of the fiscal year as we qualify and ramp the fab.

We have provided a non-GAAP adjustment for the start-up costs, as well as a reconciliation table in our earnings release. We are continuing to experience a much steeper demand curve from our customers for silicon carbide products than we had initially anticipated. This has led to supply constraints where some customer orders will not be fulfilled this fiscal year and channel inventory levels will remain low until we ramp production in our Mohawk Valley fab. We are confident that we will be able to meet this demand once Mohawk Valley is up and running.

But in the meantime, we continue to accelerate capex capacity investments and improve output in our Durham facilities. We are anticipating net capital expenditures of approximately $475 million this year, stepping down in the back half of '22 as we receive more reimbursements for the Mohawk Valley construction. At Mohawk Valley, we have more than 60 tools in place, are currently testing equipment, and we expect to begin running wafers later this quarter. While we are encouraged with our progress to date, it's important to remember, we don't expect to realize any meaningful revenue from the facility until the second half of fiscal 2023.

In the third quarter of fiscal 2022, we are targeting revenue in the range of $185 million to $195 million. We expect revenue to be driven by growth across all areas of the business, led by power and improved output from RF and materials. Our Q3 non-GAAP gross margin is expected to be in the range of 35% to 37%. As a reminder, the key to our gross margin transition for the mid-30s to 50% in 2024 is largely based on three elements including optimizing Durham, transitioning from 150-millimeter to 200-millimeter wafers, and driving revenue through Mohawk Valley.

We are on track with all three elements and anticipate modest continued improvement in gross margin over time. We're targeting non-GAAP operating expenses of $88 million to $89 million for the third quarter. We anticipate operating expenses will continue to slowly increase over time as we continue to invest in R&D and sales and marketing resources but expect that it will become a smaller percentage of revenue as we enter the middle of the decade. That being said, we are also continuing to identify areas across the business to reduce costs and improve productivity as we scale our global operations to better support our customers. For example, we will be opening a global capability center in Belfast, Northern Ireland, in partnership with the Northern Ireland government. This facility will operate as a shared services hub for Wolfspeed's IT organization, helping drive critical IT innovation and expansion of global digital capabilities. We target Q3 non-GAAP operating loss to be between $23 million to $18 million and nonoperating net loss to be approximately $1 million. We expect our non-GAAP tax amount to be benefit of approximately $4 million.

We're targeting Q3 non-GAAP net loss between $20 million to $15 million or a loss of $0.16 to $0.12 per diluted share. Our non-GAAP EPS target excludes acquired intangibles amortization, noncash stock-based compensation, private transformation and transaction costs, factory optimization restructuring and start-up costs, and other items. Our Q3 targets are based on several factors that could vary greatly, including the situation with COVID-19, overall demand, product mix, factory productivity, and the competitive environment. With that, I will now turn the discussion back to Gregg.

Gregg Lowe -- Chief Executive Officer

Thanks, Neill. We are continuing our journey to transition the industry from silicon to silicon carbide. And I'm very excited for what's to come as we begin to ramp the Mohawk Valley fab. Our power business continues to see increasingly robust demand from the automotive markets, and we're also encouraged by rising demand across a number of industrial and energy customers.

Our device opportunity pipeline continues to grow and is now well above $20 billion, underscoring the enormous demand we're seeing across all end markets. The pipeline also reflects more than 8,700 projects, and our team continues to identify new opportunities at a rapid pace. More importantly, the sales team

continues to convert design-ins at a high rate across a wide range of applications. And this includes things like personal watercraft and snowmobiles defense applications, trains, EV charging, a plasma generator, and an electric vertical takeoff and landing aircraft.

As a result, we secured a record $1.6 billion of design-ins last quarter, which is an amazing accomplishment from the hard work of our sales team, product groups, and our channel partners. Our design-in total for the first half of fiscal '21 is $2.1 billion, a 70% increase from the same period a year ago and well above our original plan for the first half of this year. At this pace, we are on a trajectory to significantly exceed our design-in totals from fiscal 2021. This positive momentum is a direct result of customers adopting silicon carbide at a faster rate than we originally anticipated and is creating a stronger tailwind for our long-term revenue outlook than we showed at our Investor Day back in November.

To support our rapid growth, it's critical that we continue to invest in people. We have attracted senior talent from a variety of exceptional companies and have demonstrated a tremendous ability to bring in people from the outside with substantial amounts of automotive experience or semiconductor wafer fab experience. The opportunity to join Wolfspeed as we drive the industry transition to silicon carbide is exciting, and we're taking advantage of this excitement to attract some of the industry's finest leaders and innovators. Earlier, Neill highlighted the impact that Missy Stigall is having on our Durham operations, and that Joe Roybal has joined Wolfspeed to oversee our back-end operations. Joe's 20 years of global semiconductor operations and leadership experience is already making a big impact here at Wolfspeed. As we focus on executing across our business, our strategy is further supported by developments in the broader market. In early December, the Biden administration released an ambitious petrol strategy to build 0.5 million charging stations for electric vehicles across the country. The $1 trillion infrastructure law authorizes a nationwide network of charging stations and sets aside $5 billion for states to build them.

We are continuing to see automakers make big commitments to ramp their electric vehicle efforts. For example, GM made several announcements at CES regarding new EVs, including the Silverado and the Equinox, and that they have thousands of orders for its BrightDrop electric work vans. In addition, Toyota announced it would make 3.5 million EVs a year by 2030, citing the November Climate Summit in Glasgow, Scotland, and the Biden's administrative executive order aiming to increase EV sales. There is tremendous momentum in the marketplace, and we are well-positioned to create a global semiconductor powerhouse here at Wolfspeed focused on silicon carbide.

Wolfspeed is a pure-play for silicon carbide, the game-changing technology that is beginning to transform the semiconductor industry. We have invested heavily not only in our products but in expanding our capacity and the talent needed to run it. The expected return on these investments is compelling and we will continue to invest in both capacity and talent to ensure we meet the steepening demand from our customers. We're winning business at a very good pace, and I remain excited about the opportunities ahead, and I'm confident in our strategy and our path forward.

And with that, we'll turn it back over to the operator, and we could begin our Q&A session.

Questions & Answers:

Operator

Thank you. [Operator instructions] Our first question today comes from Gary Mobley of Wells Fargo. Gary, your line is open.

Gary Mobley -- Wells Fargo Securities -- Analyst

Hey, guys. Thanks for taking my question. Congratulations on the progress being made. I wanted to ask really about what has changed since the Analyst Day a little over two months ago. And specifically, with respect to the $2 billion increase in the pipeline and what seems to be a pretty good design-in figure for the quarter. I'm curious specifically on that design-in metric, how diverse the revenue pipeline or the revenue build was there?

Gregg Lowe -- Chief Executive Officer

The pipeline increase and the design-ins that we got represent -- while the pipeline increases thousands of different customers. So, it's quite diverse. In fact, I think we said 8,700. So, quite diverse there.

And basically, the design in number that we just nailed for this past quarter, the fact that the first half of this year is 70% up from where we were just a year ago, is what's really creating those tailwinds that we talked about. And really, if you go back to the Analyst Day, we were projecting $2.1 billion of total revenue at the company level and roughly $1.4 billion of device revenue. It's that device revenue, where we're seeing the momentum -- and what I would say is there's three things that are really kind of driving all of this. The adoption rate of electric vehicles is well ahead of plan, and many people are seeing that.

The adoption of silicon carbide inside both EVs and the industrial markets is well above any expectation we had. And then finally, our win rate in this business is actually ahead of our plan as well. And so, I think we combine these three things and maybe I would describe it even slightly differently. It's not really just tailwinds, but really pretty significant upward pressure on those '26 numbers.

So, it's obviously a good thing. We've got a pretty substantial growth in the opportunity pipeline. And as I mentioned, in the prepared remarks. Our team is doing a fantastic job of winning in this market.

So, overall, market size is definitely heading in the right direction. Gary Mobley -- Wells Fargo Securities -- Analyst

I appreciate that color, Gregg. A follow-up, I want to ask about sort of the trajectory of the revenue before Mohawk Valley ramps in the second half of fiscal year '23, if I'm paraphrasing that correctly? You're growing your revenue are expected to grow at double-digit percent for the second consecutive quarter. And I'm wondering, just based on the manufacturing efficiencies you're getting out of Durham, North Carolina, and additional capacity that's being brought on there. Can you continue to make those same double-digit percent sequential revenue strides and as well, how should we think about the margin gains to be gained from just more efficiencies out of Durham?

Neill Reynolds -- Chief Financial Officer

Gary, this is Neill. So, look, as Gregg said, overall, we're seeing very strong demand across the business, and to kind of indicate our revenue here in the shorter term is really more of a function of supply than it is demand. Even with taking the revenue numbers up, we're still going to have north of $100 million of unfulfilled demand this year. So, as you kind of point out, our revenue is going to be just a function of the -- how well we can drive productivity through kind of the current footprint that we have.

And with that, if you look at just at the last quarter, the power numbers grew 37 -- power devices grew 37% quarter over quarter and were up over 100% year over year. And I think you can think of this kind of growth and capacity that we're seeing now really is a direct result of the new operations leadership just making an impact. Since we converted the Durham fab over to primarily a power device factory, we just saw record output in that factory. And we're also seeing some benefits from the output in Malaysia, and we're continuing to see that kind of pay off.

So, as you look forward into 3Q, I'd say it's going to be a lot of the same as 2Q. We're going to see more productivity, more power device kind of ramp up as we work into 3Q. Even if you look at the midpoint guide in 3Q, I think that power device revenue will be up somewhere around 100% again year over year as we move over to 3Q. So, I think the team is making a lot of progress in terms of what we can do in the fab.

And I think that we're kind of well in line to kind of meet the trajectory in terms of revenue growth until Mohawk Valley kind of, you know, fully comes online.

Operator

The next question in the queue today comes from Jed Dorsheimer of Canaccord Genuity. Your line is open. Jed Dorsheimer -- Canaccord Genuity -- Analyst

Hey, thanks for taking my question, and great job, and nice to see that $2.1 billion design in number. So, Gregg, I guess first question, with that level, I'm guessing you're sort of bumping up against capacity

limitations as you look out. So, I'm just wondering how do you assuage concerns with potential customers that you'll have that capacity? And does this change at all the phased ramp of Mohawk Valley, when we're in there, I think it was like a 20% or 25% phase over a period of time? Are you able to pull that forward at all? I do have a follow-up.

Gregg Lowe -- Chief Executive Officer

Yes. Thanks, Jed. And what I would tell you is we are -- as you know, we are building the world's largest silicon carbide wafer fab, the world's first and only 200-millimeter wafer fab. So, it's not lost on the customers that we have an enormous amount of capacity coming online.

What's also not lost on them is that we began the construction year -- two years ago, and we'll be running wafers in that factory doing initial runs in eight or nine weeks or so. So, just we're weeks away from running product in that facility. We've had a number of customers actually visit the facility. And so, I think they see a pretty tremendous light at the end of the tunnel in terms of as we ramp this factory.

And just as a little bit of a backdrop. So, the design wins we win right now or even last quarter, those are going to ramp in three, four years, something like that. So, by that time, we will be in very full and very high production out of that Mohawk Valley fab. With all the pressure right now, this upward pressure on the demand for -- through '26, we're obviously thinking through, and I'll have Neill talk a little bit more about the detail.

But thinking through accelerating the phased ramp of that facility.

Neill Reynolds -- Chief Financial Officer

Yes. So, as you think about the 2024 $1.5 billion revenue plan, talk about leveraging roughly 50% or more of the four-wall capacity in Mohawk Valley over that time frame. So, the demand curve that continues to steepen, we're obviously going to see a lot of opportunity to move that up. But we just want to be very careful with that number. I don't think we're ready to change that right now, Jed, just as we want to bring that factory up methodically. Bring it up in a way that ensures we've got the capability and quality that we all expect out of that factory. So, I'd say there's potential we'll be capacity constrained as we move through that period. I think if you look out beyond that into like 2026 and even beyond, we'll start to leverage that second half of the four-wall capacity in Mohawk Valley.

Now we won't be fully utilized from a four-wall perspective in that time frame when we laid out kind of that $2.1 billion kind of revenue target plan. But that is something -- that's clearly the factory has opportunity to move above that. And we could take the volume up beyond that, expand faster between '24 and '26, and that's certainly something that we're looking at and continue to manage as we see the demand curve continue to steepen.

Jed Dorsheimer -- Canaccord Genuity -- Analyst

Got it. For my follow-up, I want to shift gears a little bit in the nonauto-related. And so, a lot of the products are optimized around 650 volts and 1,200 volts for auto. But -- and while a lot of it benefits in terms of reducing the impedance are applicable to other markets like solar, you name the trains, etc., any high voltage.

Optimization from the best of -- or from my knowledge, hasn't necessarily been developed. So, for example, a solar inverter, you're not seeing a lot of off-the-shelf 2,200-volt type products. So, I guess my question to you, Gregg, is if I look at your eight-inch platform and being the only one on 200 millimeters, larger area die should be -- extend your lead over the competition and quite frankly, change a lot of these markets. So, my question to you is how are you without giving away sort of what's coming from a product perspective, how are you thinking about optimization for some of these other markets that don't get as much attention as auto?

Gregg Lowe -- Chief Executive Officer

Well, Chad, there's several different vectors here. First off, we obviously have a product group that has a whole strategy and product portfolio that they currently have new products in the pipeline, new generations

of products, different flavors, and so forth. So, there's a tremendous amount of effort going on there. and a tremendous amount of R&D.

We also have significant efforts, as you're well aware, going on in terms of the materials side of things as well. And then finally, what I would tell you has been just eye-opening to me is the adoption rate of our current portfolio across nonautomotive type applications is really, really solid. And we're able to do that through the partnership we have with Arrow because they're able to take these products and get them into customers' hands and they've got quite extensive applications engineering team and help customers develop these products. And if you were to ask me a year ago, are we going to win a personal watercraft or something like that, it wouldn't be on my list, but here we are today with those kinds of design-ins. And so, I think the partnership with Arrow and the access to the channel that they bring or the access that their channel brings has shown all of these industrial customers that there is applicability of our current portfolio to what they would like to do. And of course, they're getting glimpses of some of the things that Jay and his team are working on from a power new product portfolio as well. So, I'm super encouraged by that. I think the -- as I mentioned earlier, the adoption of silicon carbide in both EVs and the industrial markets is just happening at a substantially higher pace than we would have predicted, and that's positive news for us.

Operator

Our next question in the queue today comes from Samik Chatterjee of J.P. Morgan. Please go ahead.

Samik Chatterjee -- J.P. Morgan -- Analyst

Thank you. Hi, Gregg, and hi, Neill. Thanks for taking my questions. So, a couple of quick ones.

Just wanted to see if you can share a bit more color about the $2.1 billion of design wins or particularly the acceleration that you saw this quarter in the design wins. If you can break that down by either application or use cases. I'm just wondering, is it you had a certain application and you found you were able to design in with more customers in the same vertical? Or is it more about new applications really driving those acceleration design wins. If you can share some color on that.

Gregg Lowe -- Chief Executive Officer

The lion's share of that is going to be the inverters in electric vehicles, it's going to be something around 75% of that number, which crosses a lot of different customers, a lot of OEMs, Tier 1s, etc. So, there's pretty good diversification of that, but it is in the vertical of the electric vehicle outside of that, pretty good traction as well with RF and with the industrial markets. And I mentioned some of those different -- those different end uses. Across that, though, like I said, it's 8,700 different projects.

So, there's lots of small ones associated with that. But for the first half of this year, at $2.1 billion of design in pretty heavily automotive-related. And then, like I said, industrial and RF wins as well. Samik Chatterjee -- J.P. Morgan -- Analyst

Got it. And just a quick follow-up and maybe this is more for Neill. If you can just help me through the gross margin bridge, you grew at 35.4. I believe, based on what you've discussed, the depreciation itself change there should be helping you by about 100 basis points or so, but maybe if you can correct me if I'm wrong there.

So, I'm just trying to think about the gross margin bridge given you should have some organically better margins on the higher revenue as well. So, the puts and takes, if you can, please?

Neill Reynolds -- Chief Financial Officer

Sure. Yes. So, if you look at the 2Q results, we saw about 190 basis point improvement in gross margin, which as you pointed out, is at the high end of the guidance range. And that was driven by a couple of things.

And first and foremost, underlying this, we're seeing a better performance and better execution in our Durham fab and as well as at our Malaysia subcontractor. And similar to the revenue it's really a direct result not only of the investments that we're making but of the leadership that we've put in there. What's offsetting

that a bit as we grow is that the device business of a higher cost base is providing kind of a negative product mix. So, you saw the power device business growing extremely fast, 37% quarter over quarter, 100% year over year.

So, as that bleeds in faster, we're seeing some margin headwind as you look at that. Now, the good news is that the profitability of the device business also improved significantly versus last quarter with the better factory performance. So, over time, we would expect that kind of mix impact to dissipate. But right now, as we have that kind of cost footprint differential, we'll see that kind of playing as we go.

So those are kind of the two, I'd say, operational factors that are in there. And then from a depreciation benefit standpoint, in 2Q, I think we gave a guidance last quarter of about 1 to 2 points. It was at the higher end of that range on a higher revenue. And then as you look out into Q3, you can think about 0.5 point to 1.5 point range. And then I think of it being largely behind us after that. And again, as you look out into 3Q, we should see some additional benefit, but largely the same dynamics playing out. we anticipate seeing better performance in the fab and the back end offset by some of that product mix. And then even as you move out into Q4, we should see the margins flattish, maybe even moving up from 36% as you kind of get into that Q4 time frame or way out from that right now.

Operator

Our next question comes from Harsh Kumar of Piper Sandler. Your line is open.

Harsh Kumar -- Piper Sandler -- Analyst

Yes. Hey, guys. First of all, congratulations. Strong results, good guide.

Gregg, I had a question for you. You mentioned something interesting. You said that you'll start your wafers here in, I think, the March quarter. I just wanted to understand, mechanically, the timing dynamics.

As you start -- as you look to start in the March quarter, the run of the wafers, how long does it take, do you think, for you to be qualified is the main question is, is the commercial first few wafers out still looking at June, July kind of time frame. If you can just provide some color around that. And I do have a follow-up.

Gregg Lowe -- Chief Executive Officer

Yes. So, maybe I'll hit the beginning and Neill can give a little bit more additional color. So, I'll just remind everybody this wafer fab was a field of mud two years ago. And we're going to be running wafers here pretty soon. We've done a really good job of running the pilot line in the SUNY Albany facility. And Neill will give a little bit more color on how we've transitioned that. So, we're feeling pretty confident about what we're able to do out of the Mohawk Valley fab. We have materials staged in that fab today.

And as I mentioned, we'll be running back in really, I think, it's eight weeks, nine weeks, something like that. So, sometime this quarter. Neill, maybe you can give just a little bit more color on how the process then goes from there.

Neill Reynolds -- Chief Financial Officer

Yeah, yeah. So, Harsh, no real change from what we've talked about. As Gregg mentioned, we'll start the qualification lot in this quarter, and then we'll quickly transition to from internal to customer qualifications shortly after that. And I thought it might be good is that I break that down a little bit in terms of how we're thinking about that.

So, right now, for instance, we're testing equipment. And in many cases, that has wafers loaded into the tools. So, we expect to be running those full qualification lots, as we mentioned, later this quarter. And that goes well transition that right to customers very quickly.

As we speak with customers, there's a very strong demand to get products coming out of this factory and getting them out very quickly. So, we've set up the line in a way where we've leveraged that pilot line, Gregg

talked about the stage inventory at various stages. So, when we start the line, we can actually start it very full. And then shortly after that, we anticipate putting product in the hands of our customers.

And then we'll just continue that process with more and more customers throughout the year. And right now, our anticipation is that will happen throughout the year. We'll see some commercial revenue, but the larger amount of revenue that kind of moves the needle, so to speak, would happen in the second half of the fiscal year as you get into the second half of '23. That's kind of the plan as it works out right now. Harsh Kumar -- Piper Sandler -- Analyst

Understood. Very helpful, guys. You touched upon my next question a little bit in one of the previous questions. I think you -- I was wanting to understand, given the steepening of the demand curve, the time frame to get to an acceptable utilization of the fab or even full utilization of the fab.

And you mentioned something interesting. You talked about the four-wall capacity, but that's different from the installed tool capacity. I wanted to understand how long would it take for you given the demand dynamics you're seeing to be able to get to a utilization that you consider acceptable, let's say, breakeven cash breakeven profitability, whatever metrics you use. And then when you talk about four-wall capacity, I want to understand, there must be room, I suppose, for additional lines to go on.

And that's what you're implying by a four-wall capacity, I suspect.

Gregg Lowe -- Chief Executive Officer

Yeah, that's right, Harsh. So, I think the way I want to think about the factory, though is when you think about what's acceptable utilization. In my mind, it's getting toward that first 50%. If we could bring that up, I think we're -- as we bring that up and probably not even at full utilization, the first 50%.

I think we're in pretty good shape in terms of the fab and in terms of the profitability and the capability it's going to be bringing to us. And given the steepening demand, I don't really see that as being -- really being an issue at this point, and we'll continue to manage toward that. So, I think it's really more about your second question about how much capacity we bring on and how quickly can we do that. And looking at it now, just as I said earlier, we just got to be very careful with how we bring up the factory in that first kind of four-wall capacity.

It's a brand-new rolls-first silicon part but 200-millimeter silicon carbide automated factory. So, we run a new factory and a new technology, so we want to be careful with that. However, as you get from '24 to '26, I think there is some optionality there as you think about in terms of bringing the revenue up and bringing the capacity up. In terms of timeline to think about it, only you're thinking about a year or so to bring up a new line in a fab. It might be a little bit longer than that right now just because of supply chain considerations. But I'll tell you, we've been very disciplined about how we've ordered capacity for this factory, out ahead of the COVID and supply issues now. But we continue to monitor this very closely and make orders as we bring up the factory. So, I think we've left ourselves some flexibility in terms of how we manage this from a timing standpoint.

Operator

The next question today comes from Craig Irwin of ROTH Capital Partners. Your line is open.

Craig Irwin -- ROTH Capital Partners -- Analyst

Hi. Good evening, and thank you for taking my questions. So, I guess this does touch on questions that have been asked before. But if you keep putting up bookings like you have this quarter, design-ins, you're going to need a second facility pretty quickly.

Can you maybe talk a little bit about what the considerations would be about plans for future capital investment? And would you be more likely to expand at an existing site, maybe in North Carolina or New York -- or would you potentially consider other locations for expansion over the next couple of years?

Neill Reynolds -- Chief Financial Officer

Craig, this is Neill. First of all, thanks for the question. And I think, look, we're talking about a steepening demand curve here. And clearly, at the levels of what we're talking about, that's certainly something we're considering.

So, if you go even out beyond, we're going to bring up capacity in Mohawk Valley faster, you've got to think about looking out beyond '26, which we do regularly. And we believe that the demand for silicon carbide will continue out into the -- well into the second half of the decade. And I think the entire industry is going to require capacity out in that time frame. And for us, that would mean, yes, we would need a second fab in addition to Mohawk Valley. And that's something that we are continuing to evaluate. From a geography standpoint, I think those things are things that we just continue to think about and evaluate over time, but we would be open to looking at various options there as it relates to ensuring that we're close to our customers and working with them on ensuring surety of supply and those types of things. So, these are things that we're just evaluating and monitoring but certainly want to have the best options to create the best opportunity for serving our customers.

Craig Irwin -- ROTH Capital Partners -- Analyst

OK. And then the next question, I guess, as a clarification, right? You talked about having the tools in place for production at Mohawk Valley. There's not a lot of epi reactors out there with eight-inch capacity for silicon carbide deposition. Can you maybe talk about broadly, is this something similar to what you did years ago in the LED industry? Or are these potentially commercially sourced units? And then would you expect this to maybe be a competitive advantage for you over the next number of years similar to what it was in the early days of LEDs.

But given that you already have a huge advantage in wafers and reactors would be an exciting addition to the technology mode.

Gregg Lowe -- Chief Executive Officer

Well, epi is part of the -- one of the key advantages we have. We're pretty good at it. And what we're focused on now is really building the entire supply chain for 200-millimeter. And that's a lot of heavy lifting, that's including the furnaces to grow the crystals.

We've got really good got a really good jump there. The epi reactors and working through that whole supply chain. And so, I'd say, Craig, we're pretty focused on getting all of those bits and pieces nailed down because the steepening demand curve is going to require a pretty sizable uptick in terms of how we have that entire supply chain going. And I think it's really that combination that's going to give us a pretty unique advantage.

And as one of my customers said they really like the fact that we're on 200-millimeter because, obviously, there's a good cost advantage on that. But they really loved it because the output per unit of time is substantially higher because it basically takes the same amount of time to run a 200-millimeter wafer than it does a 150-millimeter wafer. And so, what that translates to them is they see demand for their product take off and you're hearing about electric vehicles selling out. And I think I heard one of them sold out in something like 25 minutes. They put it online and it sold out in 25 minutes. And they see that this supply chain that we're building out at 200 millimeters is going to be able to react a lot stronger and a lot faster. Because it will be roughly 70% more output for the same amount of time in the wafer fab. So, a lot of those things are going to be a good competitive advantage, and we're working really hard to keep it that way.

Operator

The next question in the queue comes from Karl Ackerman of Cowen and Company. Your line is open.

Karl Ackerman -- Cowen and Company -- Analyst

Yeah. Thank you. Two questions for me as well, please. Neill or Gregg, I guess of the automotive design ins that you won this quarter, is there a way to distinguish the number of designs where you are the primary supplier rather than secondary that may augur well for seeing those POs turn into design wins.

And as you address that question, may you also discuss whether there is a growing mix of 800-volt inverter designs in these automotive design wins? And then I have a follow-up.

Gregg Lowe -- Chief Executive Officer

Yeah. I can't give you the exact number, but I would say the vast majority of the things that are design ins for us, we're the primary source. And I don't know exactly what that means. But in fact, I would say off the top of my head, I couldn't name too many that where we weren't the primary source. So, it's going to be -- the vast majority of that is going to be we're the primary source. So, I feel very, very good about that. And then in terms of 800 volts, I think we're seeing two things happen. One is we're seeing a broader adoption of 800 volts as people are seeing the advantages of 800 volts, both from a charging time -- hang on one second. Sorry about that. Charging time perspective, as well as efficiency at the inverter level. So, we're seeing a broader adoption of 800 volts, but we're also seeing --

Neill Reynolds -- Chief Financial Officer

We're just seeing so many companies jumping in here, Karl. We are seeing a pretty broad adoption at the 800-volt level. I think a lot of customers are telling us, they're seeing a transition from 400, maybe some 400 some of the earlier models that they designed in previously, but anything really new that's coming online predominantly 800-volt.

Karl Ackerman -- Cowen and Company -- Analyst

Understood. I appreciate that. For my follow-up, does inventory moderate over the next quarter or two as presumably 150-millimeter wafer sales improve as your customer service this step function higher in silicon carbide demand. How should we think about that? Thank you.

Neill Reynolds -- Chief Financial Officer

Yes. In terms of inventory -- thanks, Karl. In terms of inventory levels, I would see the days of inventory coming down, but the growth rates are pretty high. So, I would expect working -- total working capital, including inventory to increase as time goes on, just naturally, to service a bigger business.

But I think we'll get more efficient as we execute that. And I think, by the way, what we'll see there is the better execution in the fab that we talked about earlier that we're seeing improved cycle times and yields and all those things, that will drop the WIP in the factories, and we should see some better efficiency. But I think overall, over time, working capital pick up. We see some drain on inventory between quarters, but I think we're going to continue to need pretty significant inventory balances to service the growth and our customers as we continue to ramp up the business.

Operator

Our next question today comes from Pierre Ferragu of New Street Research. Your line is open, Pierre. Ben Harwood -- New Street Research -- Analyst

Thanks for taking the questions. This is Ben Harwood standing in for Pierre. So, I had a question on China and the competition that you're seeing there. So, of course, on one hand, the manufacturing process, silicon carbides extremely difficult to perfect.

But then, on the other hand, these Chinese competitors are announcing billions of dollars in investing into silicon carbide. So, what I want to ask is what you're seeing from a competitive standpoint. There are Chinese companies coming up for the bids in either the substrate or the device market? And then just secondly, related to that, what do you expect in your '24, '26 guidance for revenues from China? Thanks.

Gregg Lowe -- Chief Executive Officer

Yes. Thanks for the question. I think I got my voice back as the team in the room here threw about 10 bottles of water at me. But what I would say is, first off, we see this is an enormous growth that's happening in the industry right now.

And whenever that happens, it attracts people who want to get into the market. So, it is not lost on us that there's going to be a lot of folks who want to get into the silicon carbide business. There are some -- and that includes a number of different companies in China. We pay attention to all the announcements that are happening right now, and all the investments and so forth.

And we don't sit back and relax about that. We are intensively improving our own operations, lowering costs, driving productivity, and all of that kind of stuff. Now that being said, this business has some pretty substantial barriers to entry that don't bode well for the normal run of play, if you will, of how China gets into a market. First off, there's not a whole supply or even an industry that supplies the silicon carbide growth furnaces in the industry.

So, you have to build your furnaces yourself. And to do that, you need the know-how. So, typically, capex would be thrown at something like this from a China perspective, and there's really no capex well, there might be a lot of capex to throw at, but there's nothing to buy. So, you have to build your own furnaces and so forth to do that. The second thing is that sometimes they throw a lot of opex at it and go after hiring tons of people to go put together a plan. The supply of humans that understand in detail how to do silicon carbide is relatively small. And so, there are lots of barriers to entry in this technology and the typical play is just -- it's just difficult for that to happen. And so, we don't take it lightly that we're going to have a lot of competition.

We act very paranoid about everything. And the best thing that we can do is continue running faster than anybody else.

Neill Reynolds -- Chief Financial Officer

I think your second question there was on like percent of revenue of revenue in China. The way we think about that, there's a lot of -- in the shorter term, there's a lot of industrial revenues, lot of those industrial opportunities come out of Asia. But as we've looked out into the plan over '24 and '26 is a lot of that automotive revenue comes on, while we do see a lot of opportunities both in automotive and industrial in the region, we've judged that back in the plan. And we have about 15% of revenue in that kind of $1.5 billion out in '24 and roughly 10% of revenue out in '26.

So, we've kind of pulled that back a little bit, although I think if you look at the -- you know, it will be a bit larger than that.

Operator

Our next question comes from Edward Snyder of Charter Equity Research. Your line is now open.

Edward Snyder -- Charter Equity Research -- Analyst Thanks. Thank you very much. Gregg, I'd like to talk about eight-inch for a little bit. I know you're launching on that, and you guys guided the fact that eight-inch is going to have high.

It already has higher yields than six-inch. But given how much thicker those wafers have to be eight-inch over six-inch. Is the per millimeter cost of eight-inch today lower than six-inch? And if not, you have what -- will you launch production with it as it is? And what kind of efforts or what kind of progress you think you can make in getting it down? Or is eight-inch just a throughput play? Because you're going to have, like you said, 70% greater capacity for the same machines as just a throughput and not that focused on cost. And then I have a follow-up.

Gregg Lowe -- Chief Executive Officer

Thanks. Yeah, the cost per millimeter squared is not at the same level as 150-millimeter, but we obviously are attacking that pretty much daily here. So, we feel real good about where it is and where it can go to. And obviously, that's something we're going to be working on.

But even with that, the throughput of the factory as you mentioned, the yields, and so forth. We're going to see an enormous advantage. Maybe Neill, you can kind of cover a little bit more of the detail there.

Neill Reynolds -- Chief Financial Officer

Yeah. So, I think simply speaking, Ed, normally -- and when you move to 200-millimeter, the benefits in the fab, not so much in the substrate, the substrate will cost more. So, even while it's at a higher cost per millimeter square right now and may stay that way for some time. We'll see pretty nice benefits in the fab just from the improved yields in the cycle times that we've talked about previously, and that more than offsets the cost per millimeter squared.

So, in that sense, we're in a very unique position because we do have a fab to feed this into and get those cost benefits. And then I think over time, it will probably take several years, but over time, we'll see that crossover point come, and then that's all built in the plans. And I think we'll be in good shape to continue to drive that cost out as we have done our 150-millimeter. Edward Snyder -- Charter Equity Research -- Analyst

Great. And then -- I mean, your performance is excellent. Your guidance is excellent. But it kind of calls on the question on your guidance for fiscal year '24.

Because if we look at any kind of reasonable breakdown, I think you've got it before is about an even split between devices and materials. A little bit more one way or the other. But if you put any kind of real numbers on that, it looks like North Carolina fab is already running this year, will run this year in fiscal '22, close to $350 million in revenue. And I think at one point, you'd said that maybe the maximum capacity of that is closer to $375 million.

I don't know. With Missy there, maybe that goes up. But given that, and we're only in fiscal '22 now. By fiscal '24, if it holds $1.5 billion guidance and $1 billion of that being devices, either Mohawk doesn't ramp nearly as quick as it's not anywhere close to what's happening or your guidance is very low relative to where your performance is already, especially given more devices.

So, maybe you could maybe walk you through -- does North Carolina flatten out or given the demand you're seeing now if it keeps growing at this rate, and I know you're not going to change guidance at this point, but isn't there a lot of upward pressure on your fiscal '24 targets at this point? And then maybe a second question for Gregg if I could. The performance you're putting up now is really impressive, but most of that and especially upside in revenue is in industrial and RF at this point, am I correct? And given the industrial markets are harder to get their arms around because they're so diversified. I mean, TI said last night that the industrial business was booming. It sounds like maybe this is growing faster than you anticipated and may pick up a lot of the capacity you have planned for Mohawk by the time you get it up into production?

Gregg Lowe -- Chief Executive Officer

Yes. I'll hit the second part of that, and then Neill can go back at the first. We definitely are seeing a strong growth of our industrial business, very nice wins. And the industrial business tends to ramp faster than automotive. It's not dramatically faster, but it's definitely faster. And so, over the next couple of years, we'll be ramping that very broad base of industrial customers that you referenced. The automotive guys that we've won, that's typically a four-year from when you win to when you really start hitting the higher volume production, you might have a little bit of introductory volumes before that. But yes -- no, I mean, I feel real good about the traction that we've gotten with the industrial business.

And the -- our ability to go after that is largely tied to a great relationship we have with Arrow in terms of going after it.

Neill Reynolds -- Chief Financial Officer

Yes. Then in terms of the revenue outlook, Ed, I think you're right. I think, first of all, I think our aspirations and what we can do in the Durham fab are probably higher now as we're seeing some of the performance over the last several months since we put new leadership into the factory. We also expect to see some benefit in the back end.

In fact, if you look at it at the end of the year, we thought a good line of sight to $200 million of revenue in Q4. Now I'd say that's higher, it's probably between $200 million and $210 million, just running because we're running the Durham fab better, and we're seeing Malaysia better. As you translate that out into 2024, you talk about $1.5 billion, $1 billion of devices, it certainly does put upward pressure on that. And I think that's what we're seeing, not just '22, '24, and even in '26 in that fashion.

So, looking at all those different things. But I will say in terms of the '24 plan, we just want to be really careful in terms of how we think about bringing up capacity in Mohawk Valley. And I think that's one of the gating items we have. Certainly, if things go better than we anticipate, there will be some opportunity there.

Clearly, from a demand standpoint, that's -- demand is going to be there as we get out in that time frame. And we'll continue to manage the capacity as best as we can. But we are seeing improved performance in Durham. That's correct. And I think there's certainly more capacity in Mohawk Valley than what we got built in that time frame. But again, we just want to be really careful in terms of how we ramp a fab -- brand-new fab, etc.

Operator

Next question comes from Colin Rusch of Oppenheimer. Colin, your line is open.

Unknown speaker

Hey, guys. This is Brendan on for Colin. First one for me. Given the strong demand environment, can you just speak to maybe how you're adjusting your pricing strategy for silicon carbide?

Gregg Lowe -- Chief Executive Officer

Sure. I'll take that. Basically, our journey in this whole business over the last four years has really been about converting the industry from silicon to silicon carbide, that's been through new technology, new product offerings, lower costs, and so forth. The second thing that I would say is the business that we're winning is business that we commit to long-term pricing agreements and things like that.

So, there's really -- there really has not been any influence at all on pricing in terms of what you might be hearing in the silicon industry. We're just -- we're sticking to our strategy of converting the industry. We obviously try to sell it on value. But in terms of the supply demand mismatch impact on pricing, that's not an area that we're playing around with.

Operator

Our last question today comes from Brian Lee of Goldman Sachs. Please go ahead. Brian Lee -- Goldman Sachs -- Analyst

Hey, guys. Thanks for squeezing me in. I just had one. I know the power device mix here is growing really fast, but you've consistently kind of called it out as a margin headwind.

And devices are growing, it sounds like per Neill's comments. Another 100% year on year again into 3Q. So, on the margins, when does that narrative change where a device is at or maybe even above corporate average. Maybe give us a sense of timeline there and then ultimately, does it get to above corporate average? Just any color there would be helpful.

I don't have any follow-ups.

Neill Reynolds -- Chief Financial Officer

Thanks, Brian. And I think it's pretty consistent with what we've said before. And I think the big differentiator is going to be running device products, power device products in Mohawk Valley. And I think when you start changing the footprint that dramatically.

Now clearly, we've seen some benefit out of Durham. I think we'll continue to see benefits out of the fab. I think the team is making really good progress. So, I think some of it may dissipate over time.

But the really the game-changer is going to be moving to Mohawk Valley, where you get the automated factory, you get the 200-millimeter wafer, and you get a pretty substantial cost advantage. So, I think it will take some time before you see that benefit. And then if you look out over the longer-term period. I don't see there from a device product versus material product type of mix, I don't see that all that much different as you get out into kind of '24 and '26.

Operator

Thank you. I'll now turn back to the management team for closing remarks. Gregg Lowe -- Chief Executive Officer

Well, thanks, everybody, for participating in the call today and your interest in Wolfspeed, and we look forward to updating you in our next earnings call. Thank you.

Operator

[Operator signoff]

Duration: 62 minutes

Call participants:

Tyler Gronbach -- Vice President of Investor Relations

Gregg Lowe -- Chief Executive Officer

Neill Reynolds -- Chief Financial Officer

Gary Mobley -- Wells Fargo Securities -- Analyst

Jed Dorsheimer -- Canaccord Genuity -- Analyst

Samik Chatterjee -- J.P. Morgan -- Analyst

Harsh Kumar -- Piper Sandler -- Analyst

Craig Irwin -- ROTH Capital Partners -- Analyst

Karl Ackerman -- Cowen and Company -- Analyst

Ben Harwood -- New Street Research -- Analyst

Edward Snyder -- Charter Equity Research -- Analyst

Unknown speaker

Brian Lee -- Goldman Sachs -- Analyst

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