

# Vicor Corp (VICR) Q4 2020 Earnings Call Transcript

Feb 25, 2021, 5:00 p.m. ET

## Call participants:

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

**Philip D. Davies** -- - *Corporate Vice President, Global Sales and Marketing*

**Patrizio Vinciarelli** -- *Chairman of the Board, President, and Chief Executive Officer*

**Quinn Bolton** -- *Needham & Company -- Analyst*

**John Dillon** -- *Analyst*

**Alan Hicks** -- *Analyst*

**Hamed Khorsand** -- *BWS Financial Inc. -- Analyst*

**James Liberman** -- *Analyst*

**Richard Shannon** -- *Craig-Hallum Capital Group -- Analyst*

**Jon Tanwanteng** -- *CJS Securities -- Analyst*

## Prepared Remarks:

### Operator

Welcome everyone to the Vicor earnings results for the fourth quarter and year ended on December 31, 2021 call. My name is Mathew, and I'm your operator today. [Operator Instructions] I would also like to advise all parties that this call is being recorded for replay purposes. And with that, I would like to hand it over to your host, James Simms, Chief Financial Officer. Please proceed.

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Thank you, Matthew. Good afternoon, and welcome to Vicor Corporation's earnings call for the fourth quarter and the year ended December 31, 2020. I'm Jamie Simms, Chief Financial Officer. And with me here in Handover are Patrizio Vinciarelli, Chief Executive Officer; and Phil Davies, Vice President of Global Sales and Marketing. After the markets closed today, we issued a press release summarizing our financial results for the three-month and 12-month periods ending December 31. This press release has been posted on the Investor Relations page of our website, vicorpower.com. We also filed a Form 8-K today related to the issuance of the press release.

I remind listeners this conference call is being recorded and is the copyrighted property of Vicor Corporation. I also remind you various remarks we make during this call may constitute forward-looking statements for purposes of the safe harbor provisions under the Private Securities Litigation Reform Act of 1995. Except for historical information contained in this call, the matters discussed on this call, including any statements regarding current and planned products, current and potential customers, potential market opportunities, expected events and announcements, and our capacity expansion as well as management's expectations for sales growth, spending and profitability are forward-looking statements involving risks and uncertainties. In light of these risks and uncertainties, we can offer no assurance that any forward-looking statement will, in fact, prove to be correct.

Actual results may differ materially from those explicitly set forth in or in line by any of our remarks today. The risks and uncertainties we face are discussed in Item 1A of our 2019 Form 10-K, which we filed with the SEC on February 28, 2020. We presented certain updated risk factors regarding the COVID-19 pandemic and our current construction project in our Form 10-Q for the third quarter filed with the SEC on October 30, 2020. Both of these documents are available via the EDGAR system on the SEC's website. I remind listeners that the results announced today are preliminary as they are subject to the completion of annual audit procedures by the company's independent registered accounting firm, KPMG. As such, these results are unaudited and subject to revision until we file our Form 10-K for the 2020 fiscal year, which we expect to occur by the filing deadline of Monday, March 1.

Please note, the information provided during this conference call is accurate only as of today, Thursday, February 25, 2021. Vicor undertakes no obligation to update any statements, including forward-looking statements made during this call, and you should not rely upon such statements after the conclusion of this call. A replay of the call will be available beginning at midnight tonight through March 12, 2021. The replay dial-in number is (888) 286-8010, followed by the passcode 33109701. This dial in and passcode are also set forth in today's press release. In addition, a webcast replay of today's call, along with the transcript will be available shortly on the Investor Relations page of our website. Let me begin this afternoon's discussion by providing some color regarding my decision to step down as Vicor's Chief Financial Officer, effective June 30, 2021.

As noted in today's press release, I have informed Patrizio and the Board of my intent to pursue other interests and different types of challenges during the next phase of my career. I've had a remarkable run as CFO of Vicor and but I feel the time is right for me to look for other opportunities and forms of personal enrichment. As stated, we have kicked off a search for our next CFO, and I will be focused on a smooth transition to the leadership of my successor. I will be leaving behind a highly-talented team, a strong balance sheet and a clear road map for future success.

Now I'll turn to a review of our Q4 financial performance, after which Phil will review recent market developments, and Patrizio, Phil and I will take your questions.

In my remarks, I will focus mostly on the sequential quarterly change for the P&L and balance sheet items and refer you to our press release or our upcoming Form 10-K for year-over-year comparisons.

As stated in today's press release, Vicor recorded total revenue for the fourth quarter of \$84.3 million, up 7.9% from the third quarter total of \$78.1 million. For the full year 2020 revenue totaled \$296.6 million, up 12.8% from \$263 million for 2019.

Quarterly Advanced Products revenue rose 10.4% sequentially, reflecting the continued ramp of shipments of our lateral power solutions for AI acceleration, demand for our 48-volt direct to CPU solutions, and the first volume shipments of our new satellite solutions. Brick product revenue rose 6.1% sequentially, reflecting a broad resumption of shipments to our North American customers after the pandemic-related trough of the second and third quarters. This increase offset a sequential decline in shipments to China with those export volumes of brick products returning to trend from Q3's high level.

Shipments to stocking distributors also rose sequentially. Turns volume was essentially unchanged sequentially.

For the full year, Advanced Products revenue for 2020 totaled \$106.1 million, up 41.5% from \$75 million for 2019, while Brick Product revenue for 2020 totaled \$190.3 million, up 1.3% from \$187.8 million for 2019. Exports for the fourth quarter declined sequentially as a percentage of total revenue to approximately 64% of consolidated revenue from the prior quarter 73%, reflecting the factors just mentioned regarding North American and Chinese shipments. For the full year, exports increased 35% and represented 64.4% of total revenue. For Q4, Advanced Product share of total revenue rose

for the fifth consecutive quarter to 40%, with Brick Products share correspondingly declining to 60% of total revenue.

We believe Advanced Product sales will expand further as a percentage of total revenues, especially once new manufacturing capacity comes online, given the high-growth segments we are targeting with our 48-volt technology, including AI, data center and automotive, in contrast to the mature growth of the segments we serve with Brick Products.

Turning to Q4 gross margin, we recorded a consolidated gross profit margin of 48.0%, an increase of five points compared to the margins reported for Q2 and Q3. Higher volumes and improved mix contributed to higher profitability as did a reduction in cost variances. Gross margin dollars rose 21% sequentially. Margins remain under some pressure of high tariff charges, which totaled \$1.5 million, representing approximately 1.8 margin points for the whole quarter. We did see a reduction in quarterly tariffs as Q4's total was 18% lower sequentially, in part, reflecting our ongoing efforts to reduce component imports from China.

We expect to see further improvement through 2021.

And I'll now turn to Q4 OpEx, which rose just under 6% sequentially, but were consistent with longer-term trend, reflecting periodic swings in discretionary spending.

The amounts of total equity-based compensation expense for Q4, included in cost of goods, SG&A and R&D were approximately \$242,000, \$851,000 and \$504,000, respectively, totaling \$1.6 million.

For Q4, we recorded operating income of \$11.6 million, representing an operating margin of 13.8%. The sequential 90% increase in operating income reflects the operational leverage in our model.

Turning to income taxes, we recorded a net provision for Q4 of \$788,000, representing an effective tax rate for the quarter of 7%.

Net income attributable to Vicor for Q4 totaled \$11.2 million. GAAP diluted earnings per share was \$0.25, based on a fully diluted share count of 44,772,000 shares. For the year, net income attributable to Vicor totaled \$17.9 million, representing diluted EPS of \$0.41, up from the prior year's \$0.34.

Before I turn to our financial position, a few words about COVID-19 and our workforce. Beginning in Q1, Vicor took substantial steps to protect the health and safety of our employees following federal and local guidelines for employee well-being. As a designated essential manufacturer using masks and practicing social distancing from the onset of the pandemic, we have continuously operated three shifts at our Andover manufacturing facility. With only a few exceptions, our engineering sales and administrative personnel returned to their offices in early Q2. I refer listeners to our Q3 2020 10-Q filing, which sets forth details regarding our response to the pandemic and the impact it has on our operations through September 30, 2020.

As is well known, coronavirus infections rose domestically during the fourth quarter, and the daily total of reported infections only has begun to decline in the past few weeks. Vicor experienced higher absenteeism from December through January, largely the consequence of quarantine requirements. However, our ability to adjust shift staffing in the factory allowed us to avoid meaningful disruption of production schedules.

We hope the worst is behind us, as absenteeism has recently returned to low levels. Nevertheless, because of the potential influence of the COVID-19 pandemic is associated with risks outside of our control, we cannot estimate the extent of such influence on our financial or operational performance or when such influence might occur.

Turning to our cash flow and balance sheet, cash, cash equivalents and short-term investments totaled \$212 million, a sequential increase of 4%. Accounts receivable net of reserves totaled \$41 million at quarter end, essentially unchanged sequentially, with DSOs for trade receivables slightly

improving to 37 days. All balances are current. Inventories net of reserves declined 1.5% sequentially to \$57.3 million.

Annualized turns improved to 3.1. Reflecting the favorable swing in working capital, operating cash flow totaled \$19.3 million for the quarter. Capital expenditures for Q4 totaled \$11.8 million, representing the value of equipment placed in service during the period. We ended the quarter with a construction and progress balance of another \$15 million, and we have approximately \$42 million of our capital budget scheduled to be spent through the year. Our factory expansion project is proceeding on schedule and on budget.

I'll now address bookings and backlog. Q4 bookings totaled \$91.5 million, a 1.2% sequential increase. The overall book-to-bill was approximately 1:1 with Advanced Products that at 1.4 and Brick Products at 0.9. Q4 bookings largely reflected the same circumstances we saw with Q4 shipments, a strong recovery of North American volume offsetting a return to trend for Chinese bookings and to a lesser extent, the natural lumpiness of orders from Asian contract manufacturers.

At year-end, one-year backlog totaled \$147.6 million, an increase of 5.4% sequentially.

Turning to our outlook for the first quarter of '21, we expect continued revenue growth. We continue to address the sources of gross margin pressure and are forecasting improvement in product level profitability. Further, we do not anticipate any meaningful increases in operating expenses. While substantial further improvement in gross margin will have to await production from our new vertically-integrated expanded factory, we expect incremental revenue to drive earnings per share given the scalability of our operating model.

Phil will now provide an overview of recent market developments, and then Patrizio, Phil and I will take your questions.

Phil?

**Philip D. Davies** -- - *Corporate Vice President, Global Sales and Marketing*

Thank you, Jamie. I would like to start my comments with a short review of our progress in 2020, which I would characterize as successful on many fronts, critical to our business growth objectives. We continue to strengthen our position as the leading supplier of high-performance power modules to customers in the data center, advanced processor and high-performance computing markets.

In 2020, we not only expanded our customer base, but also solidified our position with existing large customers by starting next-generation projects for higher performance processors with significantly higher power levels -- currently under development and scheduled for introduction in 2022 and 2023.

Our leadership position is clear and customers worldwide are selecting Vicor because of the increased performance that they can achieve with our factorized power solutions, which are characterized by much higher power and current density. In 2021, we will begin to ship our new proprietary vertical power delivery modules in volume to customers developing highly advanced supercomputers. These supercomputers utilize large clusters of AI processors in close proximity to enable faster parallel processing of heavy and complex workloads such as those found in autonomous driving applications. These complex systems can utilize greater than 50 processors, all requiring a vertical power delivery module from Vicor.

I'll now turn to a new product strategy and growth initiative that was launched in 2020 and what should bring additional opportunities and revenues in 2021. This is our new line of single phase and three phase AC power modules, incorporating our latest advances. These are successors to our former RFM assemblies. As rack and data center power requirements grow, the need to leverage existing facility footprints and rack infrastructure becomes a priority. Vicor's new high-density AC front end product families will meet this challenge head on. These new OEM customer-funded products are

scheduled to ship in Q3 of this year and we are excited about the future of this product line, which significantly expands our available market.

As the 48-volt market continues to grow and as new customers introduce AI and HPC solutions, Vicor is extremely well positioned to meet its growth objectives for this business in the coming years. Competitors trying to catch up with 48-volt-based solutions have started to set foot on our minefield of intellectual property. Misinformed and unscrupulous competitors are exposing OEMs purchasing infringing converters to significant risk of supply chain disruption. Having learned how to protect its inventions and assert its IP, Vicor's IP strategy is to hold OEMs accountable for OEM products incorporating infringing power modules from unlicensed module manufacturers. OEMs seeking an alternate source to Vicor can take an OEM license to Vicor IP. Licensing revenue from a comprehensive IP strategy should contribute appreciably to Vicor's gross margins.

So let's move on to our progress in the automotive market. As we all recognize, the electrification of cars, light vehicles and trucks is advancing rapidly with major investments and aggressive new model introduction plans announced by almost all of the major automotive OEMs. I am very pleased with the progress we made in 2020 and establishing several direct OEM-funded product development initiatives for electrified vehicles, which are scheduled for introduction in 2023 and beyond. I am particularly optimistic about our opportunity for new high-power 800-volt and 400-volt onboard charging solution for pure electric vehicles, which achieves unparalleled power density and low weight. In Q4 of 2020, we received funding from a large North American OEM for a solution that we expect to deliver to the customer next week, with an expected start of production in 2024.

We are also working closely with several other global OEMs, with which we expect to sign agreements in the coming months. The automotive market offers Vicor a large incremental revenue stream for 2023 and beyond in both the mild hybrid and pure electric automotive market for our high-power, high-efficiency and lightweight modular solutions. With a range of \$100 to \$1,500 per vehicle for our power modules, the revenue opportunity for Vicor is substantial. In addition to the data center and automotive markets, we see further growth into the 5G communications market, both for power delivery to network processors and high-density, low-profile AC front ends.

The opportunity for Vicor lies not only in land-based systems, but also in satellite constellations. We recently announced a collaboration with Boeing for a new MEO-based constellation, for which we developed a family of radiation-tolerant power modules. These modules are now being sampled to other satellite customers in this emerging and growing market.

And we are also collaborating on the development of additional customer-funded power modules. The products and technologies developed for these growth markets are also ubiquitous to power delivery networks in many emerging applications, such as robots, unmanned vehicles, such as drones and delivery vehicles, which should continue to expand our available market. We are selectively pursuing promising opportunities across such emerging applications.

So, in summary, we made excellent advances in 2020, and I expect increasing traction in 2021.

I'll now turn the call back over to the operator so that we can take your questions.

Operator?

## **Questions and Answers:**

**Operator**

[Operator Instructions] The first one is coming from the line of Jon Tanwanteng.

**Jon Tanwanteng -- CJS Securities -- Analyst**

First of all, Jamie, congratulations on your decision. It's been great working with you, and hopefully, we'll cross paths in the future. I was wondering if you could repeat your gross margin commentary heading into Q1? I'm not sure I caught it all. And maybe address the components of that, given the volatility we've seen in the world, whether it's component pricing availability, freight cost and timing, all the things that are impacting the world at the moment?

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Well, obviously, as I mentioned, the tariffs continued to have an impact, but it was roughly \$300,000 lighter. We really benefited from higher volumes and a much better mix profile. The volume of our Advanced Products, based on the leverage in that model, higher volumes allow us to absorb a great deal of our overhead, and that was the driver of the increase right there. So it was 48% for the quarter.

**Jon Tanwanteng** -- *CJS Securities -- Analyst*

Got it. I was actually asking about the first quarter as we head into it the outlook you had and what the gross margin commentary there was?

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Oh, for this quarter?

**Jon Tanwanteng** -- *CJS Securities -- Analyst*

Yes.

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

We expect all other things being equal to actually have some incremental improvement as the trends continue.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

So I would add, though, that one should not expect an improvement on the scale of the one we just recorded in the most recent quarter.

**James A. Simms** -- - *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

So we're not going to pick up five points.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

So, I think that, as suggested in the prepared remarks, to margin expectations on margin improvements, the next major contribution to margin improvements will come about with the virtual integration in a new facility. The integration process that's been outsourced and which have created significant inefficiencies, long-cycle times, bottlenecks, some...

[Technical Issues]

**Operator**

This is the operator speaking. If I can see the speaker line has just disconnected. So please bear with us for a few minutes. This is the operator speaking.

You are now back right in the call.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Okay. So we suffered -- where did we end in interruption, I think I was setting expectations with respect to margin improvements. And repeating myself, I want to be clear with respect to this, we saw obviously a substantial step-up in more recent -- in the more recent quarter -- and expect some further

improvement this quarter and in quarters ahead. But the bigger opportunity will come once we can leverage the vertical integration on the expanded manufacturing side.

**Jon Tanwanteng** -- *CJS Securities -- Analyst*

Understood. Can you hear me?

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Yes. I just wanted to make sure you were back on.

**Jon Tanwanteng** -- *CJS Securities -- Analyst*

Yes. No, I'm here. And then, I just wanted to address all the new opportunities and success you've had in 2020 and heading into 2021. You've mentioned a lot of applications. Automotive has obviously been on the radar. This new data center product, then the satellite opportunity. As I understand that you're opening your new facility as soon as you can and you need all of that capacity, just to supply current customers, how should we think of your expansion plans beyond that and the growth of these products over a two or three year time line, and how you're going to address those needs?

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Phil, do you want to take that or...

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

You do it.

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

We do address it in the 10-K, which will be published on Monday...

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Yes. So generally speaking, the factory expansion gets us to the \$750 million total capacity, as we have discussed in prior conference calls. As soon as the dust settles with respect to this capacity expansion, we're going to start pursuing the next phase, just to say, as we get further out with automotive opportunities going into volume production, there is plenty of opportunity for growth. I think, in the near term, the progression with respect to the bookings and backlog should continue this quarter, we're ahead of where we were last quarter at this time. So it's a positive trend that will carry us through this year and into next year before we get to the beginning of participation of the programs.

Phil, do you want to expand on that or...

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

No, I think that's a great summary. I think that the focus is going to be continued growth through data center and artificial intelligence, design-ins and wins that we've gotten. As that business grows itself, we will grow along with it. And our expanded customer footprint will add revenues at the end of this year and through 2022. So as we start to move to '23 when automotive kicks in, we're going to need follow-on facilities later on. So...

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

So, there are various dimensions to this, right? One of the dimensions is the footprint in AI, data centers, all these applications are point of load applications, so to speak. They address the exciting current requirements of AI chips for server opportunities. These are all fundamentally what we call DC-DC converter-type applications. As suggested in the prepared remarks, this complementary dimension of AC to DC systems, which are also called front ends, they are, in effect, providing a power system functionality, the upstream of the point of load, to the extent that we succeeded in

making 48-volt the center gravity in AI data center applications, and to extent that 48-volt is also becoming the standard for a lot of electrified systems in automotive.

There is opportunity, in effect, going from 48 to the point of load in autonomous driving, other kinds of applications, AI applications, there's at least as much of an opportunity getting to 48. So we think of this in the airline analogy of 48-volt being the hub, but there is as much opportunity taking the power to 48-volt as there is in going from 48-volt to the point of load.

### **Operator**

The next and coming question is coming from the line of Hamed Khorsand.

**Hamed Khorsand.** -- *BWS Financial Inc. -- Analyst*

I had one clarification and one question. The clarification, Jamie, could you just repeat what your growth expectations are for Q1. Is that sequential for the revenue line? Or is that year-over-year?

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

No, it's sequential. We expect some degree of improvement across the P&L sequentially.

**Hamed Khorsand.** -- *BWS Financial Inc. -- Analyst*

Okay. And then my question was, are you seeing any kind of inventory stocking, order stocking as far as customers go, given what's going on in the industry with lead time expansion and any ordering trends?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Yes, this is Phil. So yes, I would say that in January and February, we saw a lift in what we call POA bookings placed on us by our large distributors, global distributors. It wasn't massive. It was certainly an increase above what we forecast, but not by a huge amount. But there's definitely going to be some of that going on, right, given the whole supply chain sort of horror stories coming out from lots of different places. So we can expect some of that as we go through the year, sort of as we did in 2018, and that was actually a very big year of over-ordering, if you like. So yes, there's some of that going on.

### **Operator**

And the next coming question is coming from the line of Quinn Bolton.

**Quinn Bolton** -- *Needham & Company -- Analyst*

Congratulations on the nice results. And Jamie, pleasure working with you and best wishes on your next endeavor. Wanted to start with the new single phase and three phase AC to DC power conversion units for data center applications. That historically has been, I think, a fairly low gross margin business when you look at folks like Artisan or Delta or LightOn. I don't think those guys are getting 50% type gross margins. Can you talk about -- are there factors that will allow you in that front-end or AC to DC market to drive good corporate gross margins? And can you give us any sense, I think you said it was going to start to ramp in Q3. What kind of revenue opportunity you might be looking at with the AC to DC?

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

So, we believe that the margin opportunity for front-end products is on the same -- on par with the margin opportunity for point of load devices, which, as discussed earlier, we're looking to expand well beyond 50%. The traditional front-end products that you're referencing from the power supply industry is down, compared with the level of capability that we offer. The density that we offer in our front-end is literally an order magnitude greater than those solutions. So those are not really effective solutions in applications that are challenged from a power density perspective or are challenged in terms of



systems that require liquid cooling in order to enable a dense total power system solution. So I'm not concerned whatsoever with respect to margins in terms of our front-end business, either AC to DC or in particular, front ends for DC to DC. In fact, with some of those, the margin opportunity is even bigger.

As an example, in 800-volt to 48-volt types of DC systems, we have an even more, if you will, unfair advantage vis-a-vis the competition. Regarding the part of your question that has to do with the level of revenue that we expect from AC to DC products this year, it will be small. It won't move the needle on other revenue or bottom line this year. But it should start contributing to the top line appreciably and to the bottom line, as suggested earlier, starting next year. So, in particular, we're very excited about what I regard as the most advanced supercomputer on a wafer that will benefit from our AC to DC solution, to take it to its next level of proficiency, and we expect that's going to be a significant contributor next year.

**Quinn Bolton** -- *Needham & Company -- Analyst*

Understood, Patrizio. The second question, I think, is probably going to take some of those benefits you talked about in power density, as it applies to the automotive market. But just what kind of advantages do you have, whether it's power density, lower weight in the cabling, versus the competition in the electric vehicle market? I mean you talked about the content opportunity is somewhere between \$100 to \$1,500. But can you just give us some sense how much weight you can take out of the vehicle? How much longer drive time can you get with the better power efficiency and power density of your solutions as you move into the automotive market over time?

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

So, an example of the level of capability that the technology enables, we have a ChiP that measures 60-millimeter by 23-millimeter, and it's about 8-millimeter thick. And that's a very small device, right? It can hold between two of your fingers. And that device is capable of roughly speaking, five kilowatts of power conversion, 800-volt to 400-volt. And that's a major market opportunity. It is so dense and so efficient, the efficiency is pretty close to 99%. Density is very, very high as you can infer from the numbers I quoted. It can be cost-effective to the automotive OEMs, while being very high-margin for us. And in terms of value proposition in electrified cars, as you know, weight and the reduction in weight is a direct contributor to range, so there is a strong value position there that the technology enables.

**Operator**

The next question is coming from the line of John Dillon.

**John Dillon** -- *Analyst*

Congratulations on the quarter, especially the gross margins and the cash flow from operations was really outstanding.

Jamie, I'm really sorry to see you leave, and I personally want to thank you for your service. I really appreciate your help over the years.

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Thank you.

**John Dillon** -- *Analyst*

You're welcome. We're going to miss you. Yes.

I'm going to ask the same question about the front-end products to start off with. Maybe, Phil, you could give us a little more color on the customers. This seems like a major product. And I'm just wondering, have customers lined up? At one time, I think I've heard that there may be one customer

who could take all the capacity of Vicor. And I'm just wondering what does it look like for the customers? And what does it look like for next year's revenues?

**Philip D. Davies** -- - *Corporate Vice President, Global Sales and Marketing*

So John, we're obviously starting with some lead OEMs that are helping with funding projects. And that's a great thing, right? I mean they're committed to us. And we see really good revenues, as Patrizio talked about in 2022 from the supercomputer company that we've been working closely with. So what we're going to be doing now is expanding beyond that and taking that technology to the list of companies that we deal with on the point of load solutions. Because every single one of them is challenged by what I talked about in my remarks, which is the fixed footprint of the data center and the fixed footprint of the racks, where the power is going up. They're looking at new cooling technology, such as liquid cooling.

And so having something that's incredibly dense, the power dense and the performance is very, very high on efficiency is really, really meeting a big challenge that they have. And so our plans this year will be to now leverage off of those initial customers and take that technology to the big customer base that we have for point of load. So that's what we'll be doing.

**John Dillon** -- *Analyst*

Nice. Nice. My follow-up question is on the automotive. And you've talked a lot about automotive, and it sounds like things are really going well there. In some of your presentations before you're forecasting about \$250 million in revenue, I think, in 2023, with all the advances, do you see that number going up?

**Philip D. Davies** -- - *Corporate Vice President, Global Sales and Marketing*

I think we have a great opportunity to drive that number up. Yes, I do. I think that the engagements that we have, it wouldn't be in the '23 time frame, by the way, but certainly, the number is big. And the opportunity is very, very big. And the success that we've had in '20 and what I see happening in '21, I think we'll double our engagements with customers in '21. And so that's really building an incremental revenue stream for us that is critical to our desire and opportunity here to become a billion company. That's the plan.

**John Dillon** -- *Analyst*

It's sounds great. Go ahead, Patrizio.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Just as a reminder, this is still -- the automotive contribution is still relatively long term, right? And it's still a few years out. I mean, going back for a moment to the AC to DC and giving you a little bit more quantitative sense of things. So, we have a couple of customers that are lead customers, as Phil articulated earlier. I would think that the supercomputing application is a few million dollars in the next year. The LED lighting application is \$10 million to \$15 million in the next 12 months. So these are the test cases where the technology is proven out and the benefits get displayed. And to Phil's point, we've been keeping our powder dry with respect to showcasing this capability to major customers for the the point of load. We believe they are going to see the value proposition. There are also opportunities in 5G. I don't know if you want to say a few words about that or...

**Philip D. Davies** -- - *Corporate Vice President, Global Sales and Marketing*

Yes. I mean what we're seeing in 5G, I mean, particularly on, again, also in the Edge, if you like, Edge Networks, customers are looking for very low profile systems, and that's where we come in. If you look at the profile of our ChiPs, our modules, I mean, they're incredibly thin and incredibly dense. So it really fits a real high demand that we see emerging with 5G systems of all different kinds and particularly also in edge computing. So we're talking to one quite large customer there at the moment.

And they're very excited about this new family that I talked about earlier. So those conversations will go on in the next few months, and I'm hoping that will turn into another customer-funded program for product development for us.

**Operator**

The next one is coming from the line of Richard Shannon.

**Richard Shannon** -- *Craig-Hallum Capital Group -- Analyst*

Jamie, it has been a great working with you. I look forward to another call, but you've been great. So congratulations on your next move.

I guess a tactical question for me. If I did my math right on the bookings here, your brick bookings went down a fair percentage here in the fourth quarter. How does that play out into your thought process in the first quarter? And maybe understand the reasons why the bookings came down here. I kind of talked about some geographical changes, maybe you give us some color on that, that would be great, please?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Yes. Sure. Richard, this is Phil. So basically, in Q2, Q3 last year, we saw big large bookings coming from the China market for our bricks, driven by the trade wars with the United States, the distributors and the customers down there were stocking up. And then that sort of corrected back in Q4. We've seen good bookings through the first eight weeks or so of the start of this quarter. So there was a sort of a bit of a correction in Q4, but I think things will get back to normal now through this year for bricks.

**Richard Shannon** -- *Craig-Hallum Capital Group -- Analyst*

For bricks, OK. And then just thinking about the first quarter guidance, is this -- I mean, we're going to see growth in Advanced Products and Brick coming down? Or any way you'd help us understand those differentials there?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

I think Bricks will be flat, maybe a little bit up because the North American military market is a little stronger. As far as the Advanced Products, they will continue to increase.

**Richard Shannon** -- *Craig-Hallum Capital Group -- Analyst*

Okay. Great. And then my follow-on question is related to the IP situation. It sounds like you're inferring that there are -- and you have identified OEM customers are maybe using infringing products out there. And maybe you can talk about to the degree what you're seeing that? And should we infer that we could be seeing some sort of lessons or multiple license agreements happening this year in the near term?

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

We are seeing the evidence of infringement. We are gearing up to deal with it. We're having discussions with OEMs that recognize that they might have a serious issue. So stay tuned. That's all I can tell you at this point.

**Operator**

And the next incoming question is coming from the line of Christopher (*Inaudible*).

**Christopher (Inaudible Last Name)**

Inaudible question.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

We do. So we recognize that the OEMs have real challenges with respect to continue to supply access to enabling technology. Needless to say, their preference would be to have multiple sources. And when we have the situation that is present in our industry today with Vicor literally five years ahead of any competitor in terms of technological capabilities. That creates, in effect, a stress that needs to be addressed. And we're mindful of that. We'll consider it of our customers. We want to address their needs.

We view ourselves as a reliable supplier, but we do appreciate the fact that it takes a great deal of faith to put all your eggs in one manufacturing basket, the Vicor basket. So we want to provide the level of flexibility that OEMs would prefer to have, do it in a way that makes sense all around that gives proper credit for the investment that Vicor made, not just in recent times, but over the last 20 years. So we built the technological edge. We've achieved this with a major investment. We're literally talking over \$500 million in R&D, a lot sweat in terms of creativity, innovation, lots of patents. And we see the value of the IP side of the business running on a parallel path to our core competency of development and manufacturing -- in particular, automated U.S.-based manufacturing -- of state-of-the-art-products. So it's a complementary opportunity, one that, to your point, should contribute to the total margin and net profitability of the company. And it's got to work all around, right? It's got to work for our customers, and it's got to work for Vicor.

### **Operator**

The next incoming question is coming from the line of James Liberman.

**James Liberman** -- *Analyst*

I always go to hear such a fabulous presentation, and best regards to Jamie.

**James A. Simms** -- *Corporate Vice President, Chief Financial Officer, Treasurer, and Secretary*

Thank you.

**James Liberman** -- *Analyst*

Could someone give some color on the magnitude of the opportunities, market size that you see developing in the advanced robotics and drone markets that you've been starting to talk about?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Yes, this is Phil. It's a little bit difficult to do only because it's early stages for a lot of these market segments. And it's really difficult to peg from how the growth is going to go. It's just that -- again, you start to see all of this all of the robotics going on, all of the different drones underwater, unmanned aerial vehicles, all of the delivery vehicle investments going on, factory automation, smart cities, all of that stuff. And it's certainly going to be a very, very large market.

And where Vicor comes in, of course, in any market that we participate in is bringing tremendous value to customers that value and will pay for the density, the performance, the efficiency, the modularity of our solutions. And so we're working with some really, really top-notch leadership companies in those market segments that I talked about. And our early introduction is in 48-volt systems, of course, and also in some of the tethered vehicles in drones with our high-voltage bus converter technology, which again is very dense, very efficient type performance. And so these markets will emerge over time, but it's definitely going to be a very big opportunity for us, but it's very difficult to put a number on it.

**James Liberman** -- *Analyst*

So it almost have to be a visionary to see how it's going to play out, but it sounds extraordinary in these developments.

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Huge investments, right, going on in all of those areas. So it's going to be big.

**Operator**

And the next incoming question is coming from the line of Alan Hicks.

**Alan Hicks -- Analyst**

Yes. Congratulations on all the progress you're making in the great quarter.

And I second everybody's comments, we are going to -- the long-term investors are going to miss Jamie.

So anyway my question is about on capacity, there's been some question there. Have you been able to keep up with all the orders you're getting? And I see you spent, I think it was \$11 million last quarter. And I think I heard a number of \$19 million from new equipment possibly for this year. Are you putting in new equipment in your existing plant to keep up with orders? And can you just give some color on that?

**Patrizio Vinciarelli -- Chairman of the Board, President and Chief Executive Officer**

Yes. So we're doing a combination of things. First of all, we've been adding equipment within the walls of the existing facility. We have ordered the equipment for the new facility. Some of that equipment is going to get delivered into the new facility as early as the late April, May time frame. But it's not going to be until the end of this year that the lion's share of the equipment in the new facility will get installed. And between here and there, there's going to be more equipment deployed within the existing walls as well. And by the way, the new facility is about 12 walls (laughter). I mean, it's -- these are in place and the roof is in place and the new walls are coming up as we speak.

**Alan Hicks -- Analyst**

Okay. So you're adding to capacity for Advanced Products each quarter to keep up...

**Patrizio Vinciarelli -- Chairman of the Board, President and Chief Executive Officer**

We're adding capacity for Advanced Products each quarter. We're getting more capacity out of our outsourced partners. In the interim, while we get vertically integrated, we will retain access to the outside partners even after we were vertically integrated for best capacity or incremental capacity. So it's obviously an exciting, growing requirement. And it's frankly a very good challenge to have.

**Alan Hicks -- Analyst**

Okay. My second question was Intel says they're shipping in volume this quarter their new Ice Lake server processors. I know they have the great majority of the market. Has that added to your orders in the last quarter and this quarter? And then looking to the future, are you getting any engagement on the new processors that are being developed like the Facebook or Microsoft Azure or Amazon?

**Philip D. Davies -- Corporate Vice President, Global Sales and Marketing**

Yes. So let's talk about the Intel CPU new line. So the way we're participating in that particular market at this point in time for the majority of it will be with 48-volt to 12-volt non-isolated bus converters -- our proprietary NBMs. Those will be ramping in production Q2, Q3, Q4 of this year, with several of the hyperscalers. They're using 48 volts now. And then with regards to follow-on processor developments, we're focused on the high-current processors, right, providing solutions to where there are really difficult challenges at the point of load with our -- again, our proprietary current multiplier technology. So yes, we are engaged on next-generation and even generations after that, in process development with our leading customers today and several new ones that we've been able to work with in 2020.

**Alan Hicks -- Analyst**

Okay. So you're saying the impact of Intel still yet to come, Q2, Q3, Q4?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Yes. Yes, it is. Sorry, we're shipping solutions today, of course, to the older, the VR 13 and stuff, but the VR 14 will start toward the back half of this year, which is where we'll participate then.

**Alan Hicks** -- *Analyst*

Okay. And you are in discussions with some of these customers with the new processors?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

That's right. Yes -- no. We're engaged with most of them in terms of GPU, ASIC, FPGAs, a lot of great engagements.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Yes. So fundamentally, a good way of partitioning these opportunities is the part is Intel in the south of the rest of the world. So Intel is for a long time now relied on an internal switching regulator scheme to enable the power source for their devices to be at a somewhat higher voltage. It's typically around 1.8 volts. So, at that level, while our technology offers benefits, they're not nearly as compelling as they are for sub-one volt AI, whose current requirements, because of their lower operating voltage, tend to be much higher. So, there we're seeing an escalating set of requirements, both in terms of applications and the current levels of these applications, which are getting past 1,000 amperes with peaks, in some cases, exceeding 2,000 amperes.

So, the value proposition of current multiplication, which is at the heart of our point of load technology, is greater for AI than it would be for an Intel processor running low amperes, let's say, a couple of hundred of them. So a couple of hundred amperes, they still some level of flexibility with respect to traditional multiphase, so to speak, solutions. Now, where the power source has transitioned from 12 volts to 48 volts, to Phil's point, we have a role to play in converting the 48 to 12. But that opportunity, frankly, given that the rest of the world is focused on finer lithography nodes running operating voltage levels down to 0.6, 0.7 volts and going further down and with that, higher and higher current levels. That's where the current multiplier solution with a higher value proposition comes into play.

**Alan Hicks** -- *Analyst*

Okay. So sounds like you're saying the best is yet to come for your technology?

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Yes. Certainly, the center of gravity -- that will have to include Intel before too long, right? The center of gravity is shifting from high voltages at lower currents to lower voltages at much higher currents, and that's where our point of load technology is most effective.

**Operator**

And the last incoming question is coming from the line of John Dillon.

**John Dillon** -- *Analyst*

Are you seeing more hyperscalers going to 48 volts? It sounded like from the last question -- answer to that question -- there are some people going to 48 volts and you're going to using 48 to 12 for the Intel chip?

**Philip D. Davies** -- *Corporate Vice President, Global Sales and Marketing*

Yes. So if you go down the hyperscalers here in the United States, they're all moving to 48 volt, some of them moving slower than others. I expect in two years, they will pretty much all be at 48 volts.

**John Dillon -- Analyst**

Great. And Phil, in auto, can you talk just a little bit about -- do you have -- what solutions do you have in auto? Do you have a building block approach, from all the way from 800 volts to the point of load? And are you winning design wins for all the different aspects of those like -- for example, do you have point of loads for autonomous driving design wins for that?

**Philip D. Davies -- Corporate Vice President, Global Sales and Marketing**

So to answer the question, the point of load design-ins we have for autonomous driving are in the data center. That's where we're participating today. In terms of the question about 800 volts, John, when I talk about \$1,500 content per car, that's what I mean. If you go -- we go from 800 to 48 and 48 to 12. And we do it at many, many kilowatts. So there's lots of dollars there. So yes, we have a customer actually doing that with us. It's a really nice chipset, modular chipset that we're supplying, and they'll be in production in 2023 with that chipset.

**John Dillon -- Analyst**

Yes that sounds really exciting. So it's a building block approach where they can go all the way from 800 to the point of load in the car, and you're really getting all the content of the converters, it sounds like?

**Patrizio Vinciarelli -- Chairman of the Board, President and Chief Executive Officer**

Yes. Part of the value proposition that we have -- one of the many elements of our intellectual property -- is the opportunity to actually eliminate some of the batteries, because with our technology, you can store energy at a voltage, distribute a voltage that is relatively high and easy to distribute with copper wiring that this not near is heavy, so it's more cost effective. And then using a 48 to 12 bus converter to service legacy loads still running at 12 volt -- and running at 12-volt for quite some time in the future -- without having to have duplication of battery systems that carry with them extra weight, extra cost, and extra complexity. So, in a typical system of this kind, you might have 800 to 48, then 48 to 12, and in some cases, 5, 10, 15 kilowatts.

**John Dillon -- Analyst**

Excellent. And then you'll do 48 to point of load also, I would imagine.

**Patrizio Vinciarelli -- Chairman of the Board, President and Chief Executive Officer**

Well, to Phil's point, as of now, we are not yet engaged with point of load, as powering processors at 1-volt or thereabouts isn't the application. We are heavily engaged with respect to a vertical power delivery system for autonomous driving applications, but that's really not moving with the car. It's obviously supporting that motion but from the stationary side.

**John Dillon -- Analyst**

Got you. Got you. Is that because the processors in the cars are not as powerful as the ones in the data center, they don't need the amps that you provide?

**Patrizio Vinciarelli -- Chairman of the Board, President and Chief Executive Officer**

Right. Needless to say, to the extent that one can do the heavy lifting in terms of computing in a stationary side away from the vehicle and rely on very high bandwidth communication with the vehicle. That's a preferable alternative because, obviously, you can burn a lot of power to do some intense computing without limiting mileage in an electric vehicle. So the strategy for obvious reasons, that the auto makers are following, is to remote as much of the computing as possible.

**Philip D. Davies -- Corporate Vice President, Global Sales and Marketing**

You will really sort of push that compute to the edge, right? And then the edge will communicate with the data center and the heavy, heavy lifting.

**Patrizio Vinciarelli** -- *Chairman of the Board, President and Chief Executive Officer*

Yes. And with that, we'll we'll be done for today. Thanks, Jamie. All right. Bye-bye.

**Operator**

[Operator Closing Remarks].