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# Advanced Energy Industries, Inc. (AEIS)

Q2 2024 Earnings Call

## CORPORATE PARTICIPANTS

### Edwin Mok

*Vice President, Strategic Marketing & Investor Relations, Advanced Energy Industries, Inc.*

### Paul R. Oldham

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

### Stephen Douglas Kelley

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

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## OTHER PARTICIPANTS

### Joe Quatrochi

*Analyst, Wells Fargo Securities LLC*

### Mehdi Hosseini

*Analyst, Susquehanna International Group*

### Jim Ricchiuti

*Analyst, Needham & Co. LLC*

### Scott Graham

*Analyst, Seaport Global Securities LLC*

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*Analyst, TD Securities (USA) LLC*

### Mark Miller

*Analyst, The Benchmark Co. LLC*

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## MANAGEMENT DISCUSSION SECTION

**Operator:** Greetings. Welcome to Advanced Energy's Second Quarter 2024 Earnings Call. At this time, all participants will be in a listen-only mode. A question-and-answer session will follow the formal presentation. [Operator Instructions] Please note that this conference is being recorded.

I'll now turn the conference over to Edwin Mok, Vice President of Strategic Marketing and Investor Relations. Mr. Mok, you may now begin.

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### Edwin Mok

*Vice President, Strategic Marketing & Investor Relations, Advanced Energy Industries, Inc.*

Thank you, operator. Good afternoon, everyone. Welcome to Advanced Energy's Second Quarter 2024 earnings conference call. With me today are Steve Kelley, our President and CEO; and Paul Oldham, our Executive Vice President and CFO.

You can find our earnings press release and presentation on our website at [ir.advancedenergy.com](http://ir.advancedenergy.com). Let me remind you that today's call contains forward-looking statements that are subject to risks and uncertainties that could cause actual results to differ materially and are not guarantees of future performance. Information concerning these risks can be found in our SEC filings. All forward-looking statements are based on management's estimates as of today, July 30, 2024, and the company assumes no obligation to update them. Any targets beyond the current quarter presented today should not be interpreted as guidance. On today's call,

our financial results are presented on a non-GAAP financial basis unless otherwise specified. Excluded from our non-GAAP results are stock compensation, amortization, acquisition-related costs, facility expansion, and related costs, restructuring and asset impairment charges, and unrealized foreign exchange gains or losses. A detailed reconciliation between GAAP and non-GAAP measures can be found in today's press release.

With that, let me pass the call to our President and CEO, Steve Kelley.

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## Stephen Douglas Kelley

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

Thanks, Edwin. Good afternoon, everyone, and thanks for joining the call. Second quarter revenue and earnings per share exceeded our guidance. Strong demand in the data center market as well as a pull in of demand in the semiconductor market drove sequential revenue growth of 11%. Data center revenue grew 74% sequentially as we benefited from strong investments in AI. Our high efficiency, high power density products are well suited for AI servers, which require significantly more power than conventional servers. In industrial and medical, revenue was down slightly, as customers continued to work through pockets of inventory. However, distribution sell through of our industrial and medical products increased in the second quarter. Since roughly half of our I&M business goes through the channel, this is an encouraging data point, and could indicate that we are close to reaching a bottom in the I&M market. Design activity is extremely robust across our product portfolio. We are working intensively with a wide variety of customers to integrate our precision power products into their leading edge systems.

Our healthy design win pipeline is expected to drive profitable revenue growth and share gain as markets recover. To accelerate innovation across multiple markets, we acquired Airity Technologies. Airity is an innovator in high voltage power with a focus on efficient, high density, gallium nitride based solutions. Prior to the acquisition, we worked closely with Airity on several joint development projects, and feel very good about the technology and talent that Airity brings to Advanced Energy.

In operations, we are taking advantage of reduced factory loading to accelerate our consolidation efforts. At the macro level, we are reducing our factory footprint in China, the US, and Europe while upgrading our factories in Malaysia, the Philippines, and Mexico. Overall, we believe our factory actions will enhance operational productivity, lower fixed costs, and improve product quality. The consolidation effort is a key part of our plan to cross the 40% gross margin threshold in 2025. In the short-term, we are operating in a dynamic market environment where forecasting can be a challenge, because it's important for us to respond quickly to sudden changes in customer demand, we are maintaining staffing levels and strategic inventory, which give us added flexibility.

Now let me provide some color on each of our markets. Second quarter semiconductor revenue increased 5% sequentially and exceeded our projections. Based on customer requests, we accelerated some deliveries into the second quarter. We believe that these expedites were largely due to increased AI demand. On the new product front, we are working closely with our key customers to qualify the eVoS and eVerest platforms for next generation etch and deposition processes. This qualification activity will migrate from development labs to wafer fabs over the next few quarters. We are expediting delivery schedules to meet the strong demand and now expect to ship more than 200 systems before yearend. We believe the acceptance of these new platforms will drive share gains in both logic and memory applications.

At SEMICON West, we launched the NavX RF Matching network, which pairs directly with our eVerest RF generator. The combination features differentiated pulsing capabilities, which enable our customers to deliver best in class etch and deposition performance at advanced process nodes. Initial customer feedback has been quite positive and we expect to have up to 50 NavX units in the field by year-end.

Industrial and medical designing activity is very strong, with multiple wins recorded in the second quarter across a wide range of industrial applications, including glass coating, test and measurement and battery production. In medical, we secured important slots in diagnostic and therapeutic applications, including wins in surgical robot systems at four different customers. Many of these wins are enabled by the modularity of our latest technology platforms, which enables quick customization to meet specific application needs. Finally, our new website is popular with industrial and medical customers. Web traffic has tripled over the past year, and an increasing number of website inquiries are turning into design wins.

In data center computing, our revenue upside was driven by a strong demand from both hyperscale and enterprise customers, mainly for AI applications. We continue to believe that increased AI demand will drive robust revenue levels for several quarters. During the quarter, we won a major AI-related design at a leading hyperscale customer, and expect to begin ramping that win to production later this year.

Telecom and networking revenue increased slightly quarter-over-quarter. We expect market conditions to remain soft over the next few quarters, given high customer inventory levels and a slow recovery in demand.

Now for some closing thoughts. This year is playing out roughly as planned. We still expect revenue levels to be higher in the second half than the first half, even after some revenue pull ins into the second quarter. In semiconductor, we expect 2024 revenue to be similar to 2023 and second half revenue to be better than first half. And data center, we expect third and fourth quarter revenue to be higher than second quarter revenue driving year-on-year growth. In industrial and medical, we expect that revenue will remain under pressure through the third quarter and into the fourth as channel and OEM inventories gradually return to normal levels.

Looking beyond 2024, we are confident in our ability to drive profitable revenue growth. As new design wins ramp to volume, we expect to benefit from a richer product mix. In addition, the cost benefits of our factory consolidation effort will begin to flow through our P&L later this year and continue into 2025.

Finally, we expect improved market conditions will drive higher revenue and utilization moving forward. Long-term, however, the most important factor driving our growth will be how our customers view Advanced Energy. At SEMICON West earlier this month, I had the opportunity to meet with nearly all of our major semiconductor customers. As a group, they are enthusiastic about how we are bringing new products to market. Development time for eVerest and eVoS derivative products is now measured in weeks enabled by our modular architecture.

A few weeks ago, we received a top three supplier award from one of our largest data center customers. This was very meaningful for us since we were top three out of more than 1,000 suppliers. The award called out our operational execution, high quality, innovative design and management commitment.

Finally, we are receiving positive feedback from our major distributors who are key partners in our drive to gain industrial and medical share. They feel that AE has become an easier company to do business with and are steering more business our way.

With that, I'd like to turn it over to Paul, who'll provide more detailed financial information.

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## Paul R. Oldham

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

Thank you, Steve, and good afternoon, everyone. Second quarter revenue increased 11% sequentially to \$365 million ahead of our guidance of \$350 million, driven by strengthening demand in the data center computing

market and pull forward of demand in semiconductor. Gross margin was up slightly quarter-over-quarter and operating margins improved 270 basis points, as we continued to manage our cost structure closely. As a result, we delivered earnings of \$0.85 per share above our guidance of \$0.73. Overall, 2024 is playing out as we anticipated, with full-year revenues and earnings expected to be in line with or better than what we communicated last quarter.

As Steve mentioned, we are leveraging the current environment to accelerate our plans to consolidate our manufacturing sites. We now plan to fully close our last production site in China with final production completing in the first half of 2025. Although this action will result in higher transition costs in 2024, it will enable us to further lower our fixed cost structure and increases our confidence to achieve and sustain gross margins of over 40%.

Now let's review our financial results in more detail. Total revenue was \$365 million, up 11% sequentially, but down 12% year-over-year. Revenue in the semiconductor market was \$188 million, up 5% sequentially and 9% over last year. Solid execution to meet customer needs enabled us to deliver results above our guidance. Service revenue was roughly flat from last quarter. Industrial and medical revenue of \$79 million decreased 5% sequentially and 38% from last year's record levels due to continued inventory destocking at both OEMs and distributors. Data center computing revenue was \$73 million, up 74% quarter-over-quarter and 24% year-over-year, well ahead of our guidance. The upside was mainly driven by strong demand for AI server power solutions from both our hyperscale and enterprise customers. Telecom and networking revenue was \$25 million and increased slightly quarter-over-quarter.

Gross margin was 35.3%, up 20 basis points sequentially and slightly better than our guidance. Gross margins benefited from higher volume, which more than offset the anticipated impact of less favorable mix. Operating expenses were \$95 million, up \$1.6 million from last quarter on higher R&D to support our customer qualifications of our new platforms. Operating income for the quarter was \$34 million. Depreciation was \$10 million and our adjusted EBITDA was \$44 million. Other income of \$4 million decreased sequentially, primarily due to lower interest income. With our interest rate swap expiring in early September, we expect other income to be around \$3 million for Q3 and \$1 million for Q4.

For Q2, our non-GAAP tax rate was 15.9% below our target of 17% to 18% due to geographic mix of earnings and favorable discrete items. We expect the tax rate to be 16% to 17% for the balance of the year. For 2025, we expect the full adoption of the global minimum tax regime to increase our tax rate to 18% to 19%. Second quarter EPS was \$0.85 per share, compared to \$0.58 per share in its previous quarter and \$1.11 per share a year ago.

Turning now to the balance sheet. Total cash and cash equivalents at the end of the second quarter were \$986 million with net cash of \$79 million. The sequentially lower cash balance was partially due to the Airity acquisition, which closed on June 20th. Cash flow from continuing operations was \$7 million, primarily on higher inventory and annual tax payments made in the quarter. Inventory increased \$22 million or 6% sequentially, driven by strategic inventory investments and higher revenue, turns improved slightly to 2.5 times. DSO decreased slightly to 65 days, but receivables increased by \$50 million on higher revenue. DPO increased 2 days to 60 days. During the second quarter, we invested \$14.8 million in CapEx and we continue to expect 2024 CapEx to be approximately 4% of sales.

We also made debt principal payments of \$5 million and paid \$3.8 million in dividends. As noted earlier, this quarter, we acquired Airity Technologies providing us with new capability for high density, high voltage power applications. We paid net cash of approximately \$13.8 million, excluding customary indemnity holdbacks and issued approximately 144,000 shares over a three-year period to retain the critical talent in the organization.

Turning now to our guidance. We expect third quarter revenue to be up slightly from Q2 on continued strengthening in data center computing. We expect semiconductor to be roughly flat despite a higher Q2, and industrial and medical and telecom and networking to remain at similar levels quarter-over-quarter. As a result, we're forecasting our third quarter revenue to be approximately \$370 million plus or minus \$20 million. We expect gross margins in the third quarter to improve to around 36%, mainly driven by the initial benefits of our manufacture and consolidation activities and lower material premiums. As noted last quarter, we expect operating expenses to increase by \$1 million to \$2 million sequentially to support new product activities and higher variable costs. As a result, we expect Q3 non-GAAP earnings per share to be \$0.90 plus or minus \$0.25. In addition, we expect to recognize \$25 million to \$30 million, mainly in the third quarter in one time severance and other exit costs related to the closing of our last factory in China.

Before opening it up for questions, I want to highlight a few important points. We expect 2024 results to be in line with or slightly better than what we communicated last quarter. We continue to expect semiconductor to be up in the second half and flattish for the year. AI investment is driving strength in data center computing, which should continue for several quarters. We expect that customer inventory destocking will continue to impact industrial and medical through Q3 and into Q4. Telecom and networking appears to have stabilized in the low \$20 million range for the next few quarters.

Finally, we expect gross margins to increase as we execute our manufacturing cost optimization plans and volumes improve. With the closure of our last China production plant, we expect slightly higher transition costs over the next couple of quarters, but we will be in a stronger position to meet our long-term gross margin goals as markets recover in 2025. Beyond the near term, we have multiple drivers supporting revenue growth. We believe our new products and design wins are creating opportunities for share gain as volume production begins to ramp in 2025. These new products, combined with an improving market environment and normalization of customer inventory levels, should translate to solid growth next year.

By investing prudently to enable long-term growth and scale, we expect to deliver leverage in our operating model and accelerated earnings growth. Finally, we have an active pipeline of potential acquisitions. We are targeting acquisitions that align with our strategy and are committed to financial discipline to create shareholder value over time.

With that, we'll take your questions. Operator?

## QUESTION AND ANSWER SECTION

**Operator:** Thank you. We'll now be conducting a question-and-answer session. [Operator Instructions] Thank you. Thank you. And our first question is from the line of Joe Quatrochi with Wells Fargo. Please proceed with your questions.

**Joe Quatrochi**

*Analyst, Wells Fargo Securities LLC*

Q

Yeah. Thanks for taking the question, guys. Maybe one on the industrial side for industrial and medical. Can you just talk about your forward visibility and just the visibility into channel inventory? Based on your guide, it seems like maybe revenue is going to stabilize, kind of, in this current level. And how do we think about the trajectory beyond that, and looking into 2025?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah, Joe, this is Steve. I'd be happy to answer that question. If you just go back to Q4 of 2023, that's when we started to see the correction in industrial and medical. So we're about 10 months into the correction. And so, what we do is, we track the inventory in distribution very closely. We track the sell in the distribution. We sell – we track the sell through, and then we track inventory. So the good news is inventory is steadily declining in the distributor channel. Resales were up in Q2 after a sharp decline in Q1. And as we look at the trend lines in these metrics, we think that we reach a supply-demand balance somewhere in the Q4 2024 or Q1 2025 timeframe. So, we're getting close. And I think it's a good indicator for us because roughly half of our I&M business goes through distribution. So that's what I think. I think 2025 is going to be a decent year, based on the fact that we have a very strong design win pipeline in both industrial and in medical. And so, I think a lot of those designs are going to ramp into production next year.

**Joe Quatrochi**

*Analyst, Wells Fargo Securities LLC*

Q

Got it. That's helpful. And as a follow-up, as we're thinking about the recovery in gross margin as we exit this year, I think in the past, you guys talked about, kind of, a revenue target of \$400 million exiting or in 4Q, trying to get back to, I think 37.5% to 38% gross margin. When we think about the mix of that revenue, and the strength maybe in AI relative to maybe a little bit weaker outlook in I&M, how do we balance that from a gross margin perspective? Is that revenue level to reach that kind of range of gross margin is still the right way to think about it?

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah. We commented on this last time, and I think generally that's right, around \$400 million were going to be in that range we discussed last time. I think there's a few variables. Obviously, mix can affect it a little bit, higher data center, or a high volume product revenue would be a little bit negative mix for that. We saw that a little bit both this quarter and the reverse of that in Q1. But in general, the gross margin on those products has come up over time as we've implemented our strategy and focused more on the differentiated part of this market. So the impact of mix on our products might be in the 50 basis point to 75 basis point. If you saw something that was heavily balanced one way or the other. So there could be a little headwinds from mix around that level. But I think we'll show good progress.

The other thing is that we announced, of course, that we're going to fully close our remaining production site in China, which will be a good thing. It actually allows us to get more fixed cost out of the equation. It'll give us better leverage as markets recover because of that. It will cause a little bit of headwinds, [ph] those are not significant (00:24:57), but it will cause a little bit of headwinds because we'll carry a little extra cost as we ramp up basically other sites to carry that last bit of production that will be coming out of China.

So our balance, we expect margins to improve through Q3 and Q4. I think in general, the model that we gave last time is in the right neighborhood, and there could be some benefits. If semi's a little stronger, we may have a little bit of headwinds. And then, depending on where revenue ultimately comes in in Q4, I think that could help us or could be a little lower.

In general, we're on track, we believe, to get to our over 40% gross margins roughly by the middle of next year, assuming markets recover as we've discussed. All of our, sort of, factory actions should largely be completed by that time. I think we'll have a cleaner fixed cost structure which will give us, again more leverage as revenues grow from that point. And we feel good about the progress that we're making.

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**Joe Quatrochi**

*Analyst, Wells Fargo Securities LLC*

Helpful. Thank you.

Q

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**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

Yeah.

A

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**Operator:** Our next question is from the line of Jim Ricchiuti with Needham and Company. Please proceed with your question.

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**Jim Ricchiuti**

*Analyst, Needham & Co. LLC*

Hi, thanks. Good afternoon. Question on the data center business, in terms of visibility, how far does that extend. Does it extend beyond Q4? You gave some directional guidance on that.

Q

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**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

Yeah, Jim, this is Steve. Yeah, the hyperscale business, it's interesting, it's a cyclical business. So we've gone through a few of these cycles. And what we've seen every time is after a period of inventory digestion, the market is strong for typically four quarters to five quarters. So right now, we believe that the momentum in hyperscale will take us through at least Q1, if not Q2 of next year. At the same time, we're gaining market share in some of these AI applications. So we think hyperscale is going to stay strong, perhaps for most of 2025.

A

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**Jim Ricchiuti**

*Analyst, Needham & Co. LLC*

Okay. Thanks. Steve, and that win that you highlighted, because that hyperscale customer for that AI design, does that contribute in the increase in Q4 or is that more initial revenues and then it scales in early 2025?

Q

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

I think the best way to view that win is probably as a replacement for the older technologies that are phasing out. So this is a pretty fast lifecycle market. Typically these technologies ramp, and then decline within the space of a couple of years. But this is an important one because it's associated with artificial intelligence. And so typically, we have roughly 50% to 60% more dollar content in those racks than we do with conventional server racks. So as we move forward, we're going to see more and more of these AI type applications in hyperscale. And it's important for us because, many of our differentiators really come into play as the power levels go up, and the AI servers consume a lot of power, typically 3 times to 5 times the power consumption of conventional server racks. So our efficiency becomes very important to customers. Our power density, the ability to put a lot more power to roughly the same size box becomes extremely important to our customers.

**Jim Ricchiuti**

*Analyst, Needham & Co. LLC*

Q

Got it. That's helpful.

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Jim, just quickly typically, as I said before, as we're winning these applications, they're typically better margin than our historical margins in this market. So I think it contributes positively.

**Jim Ricchiuti**

*Analyst, Needham & Co. LLC*

Q

Okay. I appreciate the color both gave on that. And just one final question for me is just on the pull ins that you alluded to. Don't know if you can quantify that, or and say, whether that's, which area did that come from? Memory? Or any color on some of those programs?

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

I think we commented that I think there's kind of a pull across the board from AI perspective. So I think it's for some of the applications that would support that. It's hard for us to assess exactly the timing of these things, Jim, but we definitely saw some customers accelerate activity into the second quarter and we'll see the carry through on that. Obviously, we still feel that our semi, our products selling into semi overall will be up in the second half still despite that pull in, and flattish for the full-year. So we'll see how that carries through, but definitely we saw some acceleration from a couple of customers.

**Jim Ricchiuti**

*Analyst, Needham & Co. LLC*

Q

Okay. Thanks a lot.

**Operator:** Our next question is from the line of Krish Sankar with TD Cowen. Please proceed with your question.

**Krish Sankar***Analyst, TD Securities (USA) LLC*

Q

Yeah, hi. Thanks for taking my question. I had three quick questions. First one is for you, Paul. You gave some color on the \$400 million run rate. I'm kind of curious, so are you willing to underwrite that \$400 million run rate in 4Q and the 37.5%, 38% gross margin you said before. The reason I'm asking is, because it seems like a huge step-up from the midpoint of September quarter guidance, and if so, how to think about that run rate and how it correlates into calendar 2025 for revenue and gross margin. And then, I have two other questions. Thank you.

**Paul R. Oldham***Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah, it's a good question. Last quarter we talked about some estimates for the fourth quarter, largely trying to get to an annual number. We also said at the time it's hard to handicap each of the quarters other than that we expected each quarter to grow from the previous quarter. So at this point, one, we don't typically guide more than a quarter out. Secondly, we still feel good about the full-year to be the same or better, and we expect Q4 to be higher, how exactly that will play out between Q3 and Q4, I think is a little bit yet to be seen, particularly given, the dynamics, as Steve discussed in the industrial and medical.

So, I think again, we feel good about, kind of, the implications of being around \$400 million from a margin perspective. I think the structural elements are there. Things that could affect that a little bit plus or minus are going to be mix, a little bit of headwinds related to higher transition costs related to closing our Zhongshan plant. But that will be a net positive in the long run.

**Krish Sankar***Analyst, TD Securities (USA) LLC*

Q

Got it. Got it. Thanks for that, Paul. And then, Steve, I'm kind of curious on, kind of, like the cycle, how do you see the shape of the recovery, clearly it's not a V-shaped recovery? Yet, there's a lot of optimism on next year. I'm kind of curious, what do you think are the drivers? And also, is there a way to figure out at what quarter would that inflection happen to see that cyclical recovery or is that just really tough to prognosticate?

**Stephen Douglas Kelley***President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah. Chris, let me just ask a clarifying question because you're, kind of, coming in and out. Are you talking about AE as a whole or semiconductor only?

**Krish Sankar***Analyst, TD Securities (USA) LLC*

Q

On the semiconductor side of AE, semiconductor.

**Stephen Douglas Kelley***President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Okay. Yeah, semiconductor. Okay. So what we're seeing is a gradual recovery in 2025. I think we've been dealing with two issues in semiconductor over the past 2.5 years, the first is obviously demand inflection, but the other issue has been inventory. So, I think the good news is, we think we've just about worked through the inventory issues downstream, and we think we'll be completely out of the inventory issues by the end of this year. So 2025 will be fully connected with end customer demand without any inventory influences. What we see in 2025 is an acceleration in the second half in particular. Because we believe a lot of these units, the eVoS and eVerest units

we're shipping into our customer development labs, and ultimately into wafer fabs this year, we're going to see a ramp in those products as early as the second-half of next year. And so, basically two things together; the first is, the market gradually recovering, but we see an acceleration based on our market share gains in plasma power.

**Krish Sankar**

*Analyst, TD Securities (USA) LLC*

Q

Got it. Very helpful, Steve. And then, if I could just squeeze one last. In the past, you've spoken about like from a technology standpoint, the opportunity for Advanced Energy in gate-all-around for conductor etch. Is that the way to size that opportunity, for example, like the customers have spoken about how much dollars it is for 100,000 wafer starts a month. Is there a way to kind of figure out what Advanced Energy opportunity is with the gate-all-around conductor etch for every 100,000 wafer starts or whatever metric you want to use? Thank you.

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

I wish there was, but right now we don't have that formula. So what we're doing is putting full speed ahead on both conductor etch and dielectric etch, because we think our technology now is a good fit for both applications. So we think in the current course and speed that we can increase our share in conductor etch where we're already a leader, and we can also break into dielectric etch in a big way. So that goes from almost nothing to a significant percentage over the next few years.

**Krish Sankar**

*Analyst, TD Securities (USA) LLC*

Q

Thanks, Steve.

**Operator:** Our next question is from the line of Steve Barger with KeyBanc Capital Markets. Please proceed with your question.

**Steve Barger**

*Analyst, KeyBanc Capital Markets, Inc.*

Q

Thanks. For the semi equipment guidance, you said flat sequentially in 3Q, and a flat year versus 2023. I think that implies 4Q could be down a bit on a year-over-year basis. And can you just square that up with the accelerated delivery request in 2Q and the idea that inventory is pretty much out of the channel by year end?

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah, I think, our math shows flattish in Q3 would be an up quarter in Q4 if you just went to a completely flat year. Obviously, we said flattish. With the dynamics in the market, there's pluses and minuses. If we have a slow recovery, that could be a little bit better. If we – things push out, we still feel good about, kind of, seeing some growth in the second half of this year. So I think, Steve, just checking that, we feel like it is up half in the second half, and Q4 would be higher than Q3 as we see it today, assuming Q3 is flattish with Q2, [ph] and now that (00:36:03) Q2 is higher. So all of that commentary is on a higher base, right.

**Steve Barger**

*Analyst, KeyBanc Capital Markets, Inc.*

Q

It's on a higher base, but it kind of imply, even if you're up a little bit in 4Q it's kind of a flattish trend in the last three quarters of the year, right. So I'm just trying to – so, but you expect a more linear acceleration in 2025, if I'm hearing you right?

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah, I think that's right. That's based on a gradual market recovery as different parts of the market recover better in the second half, as Steve described, because of, kind of, the ramp of some of these new technologies. The only thing I'd say, Steve is, look, the one thing we know about this market is that we don't know.

**Steve Barger**

*Analyst, KeyBanc Capital Markets, Inc.*

Q

Yeah.

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

And historically, when the semi market recovers, it recovers quickly. And it's hard to predict the timing of that. So at this point, we're trying to plan prudently, at the same time, make sure that we have, the inventory and people available to respond quickly to customer needs. Frankly, we're able to do that this quarter because we were prepared, and were able to accelerate some shipments in from a couple of customers. So we'll continue to be prepared, and then monitor how the market goes.

**Steve Barger**

*Analyst, KeyBanc Capital Markets, Inc.*

Q

Got it. And my follow-up is also for the semiconductor business, but related to industrial. It seems like the message from a lot of the auto and industrial semiconductor companies is that the trough is here in 2Q. Do you think the industrial chip cycle is a good leading or concurrent indicator for the industrial equipment cycle that you're diversifying into or are those two things not really related?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

I wouldn't call it a tight relationship. As I view the market, I think it's important to figure out when you went into the supply chain crisis, and when you came out of it, right. And then that, kind of, determines when you reach equilibrium again. And so for us, in I&M, industrial and medical, we came out of that supply chain crisis in Q4 of last year. So we're 10 months into it. That's why I think we're going to be out of it in Q4 of this year or Q1 of next year. Seems like a reasonable amount of time and the trends support that thesis.

I think in semiconductor, it's been a year-and-a-half now, right. I think the industry went negative in Q1 of 2023. And so, I think we're seeing a point here towards the end of this year where things will probably turn around again. So, I think, like Paul said, it's a best guess, but it's based on historical data. It's based on trends that we're seeing. And, we're not that great at forecasting downturns or upturns, but they do tend to be a little sharper both ways than we first estimated.

**Steve Barger**

*Analyst, KeyBanc Capital Markets, Inc.*

Q

Understood. Thanks.

**Operator:** Our next question is from the line of Mehdi Hosseini with SIG. Please proceed with your question.

**Mehdi Hosseini**

*Analyst, Susquehanna International Group*

Q

Yeah. Thanks for taking my question. I think for the team, I'm trying to understand your readiness and to what extent can you support customers before building backlog again? So if I were to take your guide for semi, which is about \$190-ish million. Would you be able to get it back to the prior peak of \$270 million without having to accrue backlog? In other words, your ability to maintain a turns business for the semi business unit? And I have a follow-up.

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Mehdi, I'll start, and I think Paul will finish this one. But in semi, significant part of our business goes through inventory hubs or just in time operations. So we don't really have much of a backlog. But what we do is we track the size of the bins that our customers specify. And obviously, if their – as their business picks up, they want more from us, they pull more from those inventory hubs. I think in the I&M business, the industrial and medical side, which is not your question, but I'll make a comment anyway. I think the backlog is more significant. But again, it's different than the past few years because the lead times are much shorter today. They're typically anywhere between 8 weeks to 12 weeks and in past years, they've been up to a year, right. And so, our visibility is pretty short-term in industrial and medical today. So, that forces us to make some bets, and put some inventory in place so we can react quickly.

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah. I think maybe to expand on that, Mehdi. I think the question is how fast is the recovery? If it's a sharp recovery, then it's more challenging. Having said that, we've invested in strategic inventory, particularly on some of the challenging or long lead parts so that we can respond quickly, and we've made sure we've kept adequate workforce to respond quickly. So it will depend on the pace. Certainly, we have the capacity to be at the prior peak or higher, no question about that. And we're trying to – the goal is to manage our material strategy, so that we can be pretty responsive to changes in demand.

**Mehdi Hosseini**

*Analyst, Susquehanna International Group*

Q

Sure. Thank you. And as you can imagine, we can never predict the shape of the recovery or downturn, it was only two years ago that your OEM customers couldn't get enough. And then, after two quarters, they couldn't cut back fast enough. And I'm just trying to better understand how you and your OEM partners have been able to capitalize on the learnings over the past couple of years to be able to adjust, and given the fact that back in SEMICON, everybody is positive about the prospect of growth in 2025, but nobody is planning for it. And I'm just – was trying to determine your readiness. I wonder if you have any follow-up before I move on to my second question?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah, I would say that's a pretty important topic for us and our customers, right. And we all acknowledge that these upturns are fast and furious, essentially. And so, what we've done is put in place some strategic inventory of piece parts in particular, because – one thing we do know based on the past few years is, which of the piece parts are most problematic, right. So the ones we haven't replaced with alternatives, we've taken some insurance in the

form of strategic inventory, so we can respond to a quick upside. The second aspect is staffing. So we could have certainly cut back more in our factories given the current loading, but we chose not to because what we see is quite a bit of demand comes in late in the quarter, and so we have to flex up typically in the last month and a half of the quarter.

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**Mehdi Hosseini***Analyst, Susquehanna International Group*

Q

Yeah. Thank you for trying. And then, Paul, you talked about some increase in OpEx with [ph] two quarter to four quarter of increase per quarter (00:43:40), especially looking to 2025 be reasonable. And then as a second follow-up to that, given this increase in your CapEx this year, I think your CapEx is on target to increase by a couple of million. Should we assume that you're done with the investment, especially the resizing and next year, your CapEx would actually be down on a year-over-year basis?

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**Paul R. Oldham***Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Yeah. So on OpEx, I think we said last time we expected OpEx to be up \$1 million to \$2 million each quarter sequentially through the end of this year. I think it's consistent with the guide we gave again this quarter. Next year, certainly we have normal merit and inflation cycles. But in general, our base operating cost structure should stay pretty level. So we'll have variable costs that go with that very selective hiring as well, and normal inflation. So that's a little bit how you should think of it. In general, we expect to grow revenue, at half the rate – I'm sorry, grow expenses to half the rate of sales growth. Now sales grows quite quickly, again we don't need to scale up. We can get a lot of leverage out of our expense structure.

From a capital perspective, we are running ahead because we're doing these factory transitions. We're investing in NPI tools and capability with our new products coming. And we have some infrastructure investments we're making in systems and tools as we've talked about. So I think these largely conclude sort of the middle-ish to late next year. So certainly as you go out in time, 12 months to 18 months, we'd expect to see our CapEx revert back towards, kind of the 2% to 3% rather than 4% of revenue.

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**Mehdi Hosseini***Analyst, Susquehanna International Group*

Q

Thank you, guys.

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**Operator:** Thank you. [Operator Instructions] Our next question is from the line of Scott Graham with Seaport Research. Please proceed with your questions.

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**Scott Graham***Analyst, Seaport Global Securities LLC*

Q

Yes. Hey. Good afternoon. Thanks for taking the questions. Well done quarter. I have several questions and I hope they're easy and quick so I can get to all three or four of them. The T&N business, the telecom business, we all know telecom is a weak market. But, is that a business where we're at a level of revenue now where maybe, we're thinking more strategically doesn't make sense. Or are we thinking that there's going to be a big pop in this thing at some point, and we're going to try to get back. I mean, the sales of the business are more than 40% down. And I'm just, kind of, wondering what your longer term thinking on this thing is. Can this pop back up?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah. I think you've captured the dynamics pretty well. And for a while we've said that this market isn't one that has a lot of growth. It's kind of a sustained business. We did see a pretty big ramp the last couple of years, big coming out of the supply chain crisis. So it's down a lot, but it was up a lot. Both of those, I think were, kind of, unusual. So it is getting back towards, maybe a bottom now, and a steady state might be a little higher than this. But look, in this market, like others, we have some marquee customers. We have some places where we can focus, where we think we make reasonable returns. And all of these markets, they have a lot in common. We share common architecture, common products, common manufacturing. So it's not something that's easy to sort of carve out. Rather, we're able to capitalize on, kind of, the whole to have a reasonable business. It's not one we want to grow a lot or think we can, because of the market. And again focusing on where we think the returns are reasonable. But I wouldn't say we strategically would expect to divest of this product.

**Scott Graham**

*Analyst, Seaport Global Securities LLC*

Q

Thank you for answering that so succinctly. The data centers business, Steve, you indicated that should be up strongly in the next couple quarters. I guess I'm just wondering why not longer, maybe not at the pace of this past quarter, but is it – are your customers saying something that is giving you a little bit of hesitancy to not grow beyond next couple quarters. Is there – I'm just wondering, because I believe that this market is going to be growing fairly strongly for the next several years as in three to five type of things. So just wondering why you limited your comment to next couple of quarters?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah. But let me just clarify. We think data center is going to be strong into 2025. And I think you're right, long term trends are very positive, I mean, more and more data generation, storage, transmission. So it's nowhere to go, but up with time. But this is a cyclical market. And so typically after a digestion period, which we just exited Q1 of this year, we're going to have at least four quarters to five quarters of really strong revenue. And so, that's about as much as we're willing to forecast right now. But, I think given the trends towards AI and some of our market share gains in specialty areas within hyperscale, there's a chance we could sustain this type of revenue level through 2025. But I'm not going to venture right now and say that we will for certain.

**Scott Graham**

*Analyst, Seaport Global Securities LLC*

Q

Okay. Thank you. That was great. I just maybe want to go back and revisit the answer to a previous question when I think Jim was trying to unbundle the growth in the semiconductor market or somebody else. I'm just curious as to, aside from sort of the pull forward that you're talking about, logic versus memory, I mean, any more color you can give on or give in your business, maybe again, away from that pull forward, why it feels like you're a little bit more optimistic there?

**Stephen Douglas Kelley**

*President, Chief Executive Officer & Director, Advanced Energy Industries, Inc.*

A

Yeah. I think it's difficult for me to add too much to the market commentary. It's already out there. There's a lot of prognosticators who forecast what's happening in the NAND, and DRAM, and logic, and so forth. But what I can say is that with our new technologies, eVoS and eVerest, and now NavX, which was just introduced earlier this month at SEMICON West, we're working very closely with our customers to secure tool of record status on the

leading edge memory and leading edge logic processes. So this is very, very important. And we mentioned it during the scripted part of the call.

But let me just repeat. Today, we have orders for over 200 of these eVoS and eVerest products this year, right. And so we're hustling to deliver these products to our customers. And in turn, they're working with their customers to get these technologies qualified in wafer fabs, in production as soon as the second half of next year. So we see, some trends that are very favorable for Advanced Energy. Some of those are connected to market growth next year, but some are independent because it enables us a great gain share, particularly in leading edge.

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**Scott Graham**

*Analyst, Seaport Global Securities LLC*

Q

That's great. Thanks, Steve.

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**Operator:** Thank you. Our next question is from the line of Mark Miller with Benchmark. Please proceed with your question.

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**Mark Miller**

*Analyst, The Benchmark Co. LLC*

Q

Just wondering if you could quantify the effect of lower factory loading on your margins?

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**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

I think you said lower factory loading, is that right, Mark?

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**Mark Miller**

*Analyst, The Benchmark Co. LLC*

Q

That's correct. That's correct.

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**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Okay. Yeah. What we've said maybe the reverse of that is that we think that there's roughly 50 basis points of margin improvement – I'm sorry, 100 basis points of margin improvement for roughly every \$50 million of incremental revenue. So you could certainly anticipate that on the downside as well. That's been the biggest contributor, recently why we haven't seen a pick-up in margins as material costs got better is because revenues have been lower. So I think that's the way to think about it, Mark.

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**Mark Miller**

*Analyst, The Benchmark Co. LLC*

Q

And the impression I've gotten from the call and the questions is that in terms of semiconductor bookings and backlog, it's kind of flattish or is it better than that?

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**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

A

Again, there's not really a backlog concept in semi because so many of our customers pull from JIT bins. But generally we think that the inventory rationalization, we're largely through that, and that we're generally shipping, kind of, at the demand levels, particularly as we go through the balance of the year. And that

this market will bounce around here, and should trend up over time. It's hard to call that in the very near term. But we feel really good about, all these markets have been in a downturn for a while and we have a great set of new products coming that should accelerate growth as things recover.

**Mark Miller**

*Analyst, The Benchmark Co. LLC*

Thank you.

Q

**Paul R. Oldham**

*Executive Vice President & Chief Financial Officer, Advanced Energy Industries, Inc.*

Yeah.

A

**Operator:** Thank you. This will conclude our question-and-answer session. This will conclude today's conference. Thank you for your participation. You may now disconnect your lines and have a wonderful day.

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