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PRESENTATION

Operator

Good day, ladies and gentlemen, and welcome to the Advanced Energy's Second Quarter 2018 Earnings Conference Call. (Operator Instructions) As a reminder, this conference call is being recorded.

I would now like to turn the conference over to Rhonda Bennetto. You may begin.

Rhonda Bennetto

Thank you, operator. Good morning, everyone. Welcome to Advanced Energy's Second Quarter 2018 Earnings Conference Call. With me on today's call are Yuval Wasserman, President and CEO; and Paul Oldham, Executive VP and CFO.

By now, you should have received a copy of the earnings release that was issued yesterday afternoon. For a copy of the release, please visit our website, www.advancedenergy.com.

Before we begin, let me remind you that today's call contains forward-looking statements, including Advanced Energy's current view of its industry, performance, products, applications and business outlook. These statements 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 and uncertainties is contained in Advanced Energy's most recent Form 10-K, Form 10-Q and 8-K filings with the SEC. All forward-looking statements are based on management's estimates, projections and assumptions as of June 30, 2018, and Advanced Energy assumes no obligation to update them.

Guidance will not be updated after today's call until our next scheduled quarterly financial release. Aspirational goals and targets discussed on this conference call or in the presentation material should not be interpreted in any respect as guidance. Today's call also includes non-GAAP adjusted financial measures. Reconciliations to GAAP measures are contained in yesterday's earnings release and in our reconciliation slides, which are available on the Investor Relations page of our website. We'll be referring to earnings slides posted on the Investor Relations section of our website as well.

And finally, Advanced Energy will be presenting at the D.A. Davidson Technology Forum on August 9 in New York, at the Jeffries Semiconductor and Hardware Summit in Chicago on August 29 and at the Citi Global Technology Conference in New York on September 5. We look forward to seeing many of you at these events.

And with that, I'd like to turn the call over to Yuval Wasserman. Yuval?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Thank you, Rhonda. Good morning, everyone, and thank you for joining us for our second quarter earnings conference call. Revenues maintained record levels for Advanced Energy this quarter against a backdrop or short-term pushouts by some semiconductor manufacturers. At $196 million, revenues were up slightly from the first quarter and grew 18% year-over-year. Strong growth and record revenues from our industrial products and service offerings offset modest declines in our semiconductor markets, demonstrating the value of our diversification strategy. Our institution of this strategy continues with our announcement yesterday of an agreement to acquire LumaSense Technologies, a leader in photonic-based measurement technologies for power-incentive (sic) [power-intensive] applications. This acquisition will be highly synergistic with AE's precision power control technologies in both semiconductor and largely industrial markets.

For the quarter, our financial results were solid. We generated $53 million in operating cash, and we spent $25 million on our share purchase program. We also strengthened our management team this quarter with the key additions of Paul Oldham as CFO; Niel Brinker as COO; Isabel Yang as our new CTO and Tina Donikowski as a new board member. They bring incredible knowledge and experience to AE, and we are excited to have them join the team and help drive our growth and diversification strategy.

Beginning with semiconductors, the second quarter market changed in near-term outlook by some end customers, which began to trickle down through the equipment and critical component manufacturers. The mid-quarter announcement of delays in memory expansion for 3D NAND and DRAM by one of the large semiconductor manufacturers had a significant impact on some of the AE OEM customers, and as a result, affected AE's semiconductor business. We began to see the effect of this delay in investment in the latter half of the second quarter. As a result, semi revenues declined sequentially coming off the record highs achieved in the first quarter. In addition, we are seeing modest delays in other semiconductor manufacturers related to yield and timing of high-volume production, but expect this impact to be more muted. We expect these trends to impact the second half. Despite the near-term pause, we believe that the long-term multi-year industry trends are intact and see this delay in investment as temporary. Continued investment in next-generation nodes help the overall demand trends in both DRAM and 3D NAND and long-term demand for semiconductors driven by Big Data for AI, IoT and other data-driven applications, while continue to drive growth in our industry in general and in plasma processes related to deposition and etch, in particular. In near-term, ongoing high utilization rates and the fact that other fab project remain on schedule, leaders do believe that these delays in investment are largely timing related and that 2019 will, again, be a growth year.

In addition, our leadership position across NAND, DRAM, logic and foundry applications should benefit us from a variety of memory and logic device architecture transitions. Advanced process applications combined with capacity additions and growing capital intensity in deposition and etch with higher power supplies content should allow us to grow faster than the market.

Now let me move on to our semi design wins. An all important part of our success is our innovative and collaborative culture driving very close relationship with our customers. We continue to win the vast majority of the designs we target due to our deep understanding of our customer's processes and our ability to anticipate and solve the next-generation power-related technology challenges.

Today, every major semi-OEM is coming to AE for our leading, highly-engineered precision power solutions to help enable the road maps. Our increasing investment in R&D is a direct result of new innovative programs. Unique strength in RF power delivery and tuning allows us to displace key competitors in critical, advanced RF applications among global OEMs. Our new enabling products could change the way plasma processes are performed and would allow us to accelerate our growth across multiple applications. This quarter, wins ranged from multiple designs in advanced memory in PEALD, CVD and etch, and retrofit opportunities as we penetrate new platforms with our customers. With the addition of our recently added electrostatic offering, we are now serving e-chucks with 3 components of technology in processing, inspection and metrology tools.

Just a few years ago, we had a limited presence in inspection in metrology. Today, we have increased our capabilities with our expanded portfolio and are positioned to grow this business significantly. Our industrial business achieved record results again this quarter to further diversify our revenues. In thin films, we saw growth across the board, expanding our presence in a variety of adjacent markets. Industrial coatings accounted for the lion's share of the growth, with capacity ramping to meet the increasing demand for consumer devices.

Our advanced RF industrial products also contributed with their largest quarter in recent history, driven by the ramp of LCD TVs and mobile OLED applications. Major glass-coating projects and technology upgrade added to a strong performance as well.

In Specialty Power, power control modules showed solid momentum this quarter in glass, metals, solar and thin film battery applications, especially in EMEA and Asia, aided by 3 acquisitions in the last year, including Excelsys, Trek and our most recent purchase of the electrostatic product line from Monroe Electronics. Specialty Power is fast becoming an important contributor to our industrial business, having more than doubled in just the last year.

Underlying the strong growth in our industrial business is our ongoing ability to win critical designs at new and existing customers. Importantly this quarter, we displaced large competitors in a number of thin film design wins, including a significant win with a large solar PV manufacturer. AE secured this win due to our strong combination of product performance, operational excellence, localized footprint and ability to quickly ramp to meet our customers' demand. This win represent mid-teen million dollars of new revenue for 2018.

In China, we expanded our RF technology into industrial applications, such as atmospheric plasma processes, and are seeing increased adoption of our Ascent product in advanced coating technologies for consumer devices, industrial and glass applications. These wins reflect our recognition as the industry leader, enabling our customers' road maps for highly engineered materials and new applications.

In Specialty Power, we expanded our presence and gained share with numerous wins. In low-voltage, we won the design for an MRI scanner replacing multiple competitive single-output power supply with our modular solution, allowing the customers to simplify and accelerate their power system design. Additionally, we had another win for scanning electron microscope application resulting from our unique fanless design. As we expand our penetration into the medical equipment market, we see an opportunity to introduce additional products across our portfolio.

In high voltage, we continue to penetrate the mass spectrometry market and gain shares due to the stability and low repo of our power solutions. In thermal, we grew our presence in process control for industry applications in parameters and power control modules due to our performance, global support infrastructure and close customer relationships.

In the third quarter, we expect ongoing strength across our thin film and Specialty Power applications, especially PV solar, consumer electronic products coating, LCD capacity and mobile OLED and high-voltage products. We continue to expect CAGR growth in the mid-teens for these products.

In addition, our strategy to add complementary applications, technologies and product lines to our industrial business should expand our reach into new and adjacent protocols and increase our SAM. As I mentioned, yesterday we announced the acquisition of LumaSense Technologies. The advanced measurement technology from LumaSense will allow us to expand our sales in core semiconductors and thin film market and broaden our exposure to a growing set of industrial applications for material processing, power and thermal management and factory safety. Specifically, this acquisition will expand our electrostatic chuck offering, complement our leading parameter solutions in this semi-market, accelerate our penetration into industrial pyrometry and add new integrated industrial temperature control in metrology solutions for both thin films coating and thermal processing. We believe a global channel innovation, customer relationships and complementary technical strength will accelerate growth of these products and enable us to realize significant synergies across our business. Our aspiration is to grow our photonic-based products consisting of our current AE parameters and LumaSense products to greater than $100 million per year over the next 3 years. Contributing nearly 14% of total revenue this quarter, our service business continues to be a key component of our overall growth strategy. Our record second quarter revenues worldwide were driven by retrofit programs, growth in product repairs and regional expansion.

Looking forward, we expect our service business to continue to grow at roughly 10% per year, the results of accelerated share gain, growing installed base and sales of our non-break fix products.

In summary, the near-term headwinds in the semiconductor industry are driven by temporary CapEx delays, mainly in memory, while the multiple long-term semiconductor industry drivers remain intact. We expect to see a resumption of the growth in the semi business in general and in our plasma-enabling products in particular, driven by the high-capital intensity in etch and deposition applications with higher power content.

Our industrial and service business continue to thrive, reaching new heights and penetrating new and existing applications and customers. We are excited to add LumaSense to the AE family of products and technologies and see meaningful growth and synergies from this acquisition. Continued growth in our industrial business, combined with additional revenue from our acquisitions, will help to mitigate the impact of the pause in the semiconductor market in the second half of 2018 and will continue to position AE for growth in 2019.

I'd like to thank our customers, partners, shareholders and our valued employees for their support. Thank you for joining us, and we look forward to seeing many of you in the upcoming quarter.

With that, let me turn the call over to Paul.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Thank you, Yuval, and good morning, everyone. In the second quarter, we continued to execute on our strategy to grow and diversify the company. At the same time, we began to see the impact of the near-term pause in the semiconductor market.

Total revenue was $196 million, up slightly from last quarter's record levels and 18.2% higher than a year ago. Both our industrial and service products reached new heights, outperforming our expectations. Semi revenue was impacted by the softening of orders towards the end of the quarter due to the postponement of memory spending by a large manufacturer. Despite the softness, revenues for the first half grew 24% year-over-year, with 19% growth in semi and 53% growth in our industrial products.

Looking at sales by market. Semiconductor revenue in the quarter was $127.3 million, down 6.4% from last quarter, but up 8.8% from last year. Shipment schedules for the second half of the quarter were impacted by a delay in investment in 3D NAND that primarily affected one of our major customers. We expect this delay, combined with recently announced pushouts in logic, to further impact the second half of the year. However, as Yuval mentioned, based on what we're hearing, we believe this is largely related to specific customers' mix, yield and timing of investment and not a change in the longer-term trends. With healthy underlying long-term demand for DRAM, 3D NAND, foundry and logic, we believe this pause in investment is temporary and that 2019 will be a growth year for semiconductor capital equipment investment, with continued increased etch and dep intensity driven by 3D device scaling and adoption of advanced materials and processes.

Industrial revenue saw significant growth and reached a record $41.9 million, up 19.2% from the first quarter and 59.7% from last year. During the quarter, we saw multiple design wins, including a significant win with our large solar PV manufacturer, and expect our industrial products to continue to grow in the double-digit range.

Service revenue for the quarter was also a record $26.8 million, up 9.8% from the first quarter and 18.6% from last year. These results demonstrate the value that our diversification strategy is providing, by helping to offset fluctuations in our semi business.

Gross margin for the second quarter was 51.6% compared to 53% in the prior quarter and 52.5% a year ago. On a non-GAAP basis, gross margin was 51.8% compared to 53.2% and 52.8%, respectively.

Costs related to expedited shipping to meet strong customer demand early in the quarter, inventory revaluation associated with lower material costs and the timing of expenses relating to the relocation and manufacturing for certain of our products impacted gross margins. These costs were largely onetime in nature, and we expect gross margins to return to within our expected model of 52% to 54% in the third quarter, but at the low end primarily due to the impact of lower volumes.

GAAP operating expenses for the second quarter decreased in both absolute dollars and as a percentage of revenue, mainly due to lower stock-based compensation, offset by increased research and development spending. Non-GAAP operating expenses were $41.9 million or 21.3% of revenue.

This compares to $41.3 million or 21.2% in the prior quarter and $34.8 million or 21% last year. The increase from the prior year and modest increase from last quarter were primarily related to higher R&D spending as we invest in new products and technologies.

Looking forward, we expect base expenses to decline modestly in Q3 as we take actions to reduce discretionary spending, while preserving our investments to deliver our growth strategy.

GAAP operating margin for the quarter was 28.6% compared to 28.7% last quarter and 28.8% in the same period last year.

Non-GAAP operating margin was 30.5% compared to 32% in the previous quarter and 31.8% a year ago. Our tax rate for the second quarter was 16.4%, in line with our expectation. We expect our tax rate for the year to remain in the 16% to 17% range. GAAP earnings per share for the second quarter were $1.17 compared to $1.16 last quarter and $1.14 last year.

Non-GAAP EPS for the quarter was $1.25 compared to $1.34 in the first quarter and $1.22 a year ago.

Turning to the balance sheet. In the second quarter, we generated $53 million of operating cash from continuing operations. We repurchased $25.3 million of stock in the quarter and $38.1 million year-to-date as part of capital allocation strategy. Since the inception of our program, we have spent $118 million to repurchase 2.7 million shares. We ended the quarter with $436.1 million in cash and marketable securities.

Net working capital increased modestly. Day sales outstanding were 49 days compared to 54 days last quarter. Days payable declined from 63 days to 55 days, primarily due to the timing of purchases during the quarter. Inventory turns decreased from 3.9 to 3.5 as we invested in inventory related to product manufacturing transitions, securing strategic sources of supply, lower demand late in the quarter for our semi products and staging of the inventory for our solar win. We expect inventory to decline from these levels as most of this investment is behind us.

Yesterday, we announced a definitive agreement to acquire LumaSense, a leader in photonic-based measurement and monitoring solutions for power-intensive industries. This acquisition is very complementary to our current line of pyrometry-based temperature measurement products, and we believe we'll have significant revenue and operating synergies. Under the terms of the agreement, we will pay $85 million in cash on a debt-free basis, subject to a working capital adjustment. We expect to close the transaction late in the quarter, subject to customary closing conditions and regulatory approvals. LumaSense revenues were approximately $60 million in 2017, and we expect the transaction to be immediately accretive on a non-GAAP basis.

Given current market conditions and order levels, we expect revenues for the third quarter to be between $160 million to $170 million and non-GAAP earnings per share between $0.93 and $1.07.

Overall, we continue to deliver a leading financial model, while we diversify our business into adjacent and new markets, although the pause in semiconductor investment will impact our second half, we believe the long-term trends are still intact. We are confident in our growth strategy and our ability to meet our strategic aspirational goals and to deliver growth in earnings over time.

With that, let me turn it over to the operator for questions. Operator?

QUESTIONS AND ANSWERS

Operator

(Operator Instructions) Our first question comes from the line of Krish Sankar of Cowen and Company.

Sreekrishnan Sankarnarayanan - *Cowen and Company, LLC, Research Division - MD & Senior Research Analyst*

I had a few of them. First one, Yuval, can you just help us on the guidance in September quarter, how to think about the semi and the non-semi business sequentially?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

We do not delineate between different pieces of the business. So directionally, as expected, our semi will decline in Q3 and we expect our industrial business to continue to grow.

Sreekrishnan Sankarnarayanan - *Cowen and Company, LLC, Research Division - MD & Senior Research Analyst*

Got it. Got it. And then just a housekeeping. How much did Trek contribute to the June quarter numbers? And is there any LumaSense in your September guidance?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

So we do not have LumaSense in our September guidance, and let me ask in terms of Trek?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

About $6 million.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

About $6 million.

Sreekrishnan Sankarnarayanan - *Cowen and Company, LLC, Research Division - MD & Senior Research Analyst*

$6 million. Got it. Okay. So just if I look at your June numbers compared to your peers, looks like your June was worse relatively compared to like MKSI, is there something going on from a fundamental standpoint? Is it just exposure? Or what's happening over there?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

I think it's mainly timing. And I think what we saw is, we saw an earlier request to reduce the semi demand that came from our customers. It is timing related due to reduction in shipments. And supporting our customers and their plans, we basically aligned our shipments to their demand plan. At the same time, we saw a significant jump in our solar PV business as we won a significant win in the specific area and that also affected our material planning. And as a result of that, you saw the increase -- slight increase in the inventories.

Sreekrishnan Sankarnarayanan - *Cowen and Company, LLC, Research Division - MD & Senior Research Analyst*

Got it. Got it. It's very helpful. And then I just had 2 other quick questions, Yuval. One is, in your prepared comments, you said that you expect the pause in the second half of the year. Should we assume Q4 is also going to be a weak quarter? Is it the right way to read through given the fact that most of your customers are saying, at least on the semi side, Q3 is the trough?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Well, we listen to the same sources of information. We see also that Q3 is the bottom. We believe that it will take a quarter or 2 to recover. We still believe that 2018 is a growth year, and we expect the resumption of the business to occur at the beginning of 2019. We expect 2019 to be a growth year as well. So exactly when in which quarter we're going to see the initial recovery, we can't say that. But we believe, based on the information we have right now that we see a bottom in Q3 and a recovery that will take a quarter or 2.

Sreekrishnan Sankarnarayanan - *Cowen and Company, LLC, Research Division - MD & Senior Research Analyst*

Got it. Got it. That's very helpful. Then a final question, Yuval. When I look at your September guidance, it looks like semis is going to be down about 24%, 25% similar to MKSI, similar to what Lam also guided. In the past when your customers semi cap OEMs saw a downtick, they'd usually use up their own inventory. Looks like that's not happening this time. Is the behavior different today versus prior cycles? Can you just help us understand what's going on from a customer mentality standpoint?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Well, I think it has to do with timing in our opinion and also end customer mix and product mix. When we look at Q3, we are very much in line with the rest of the industry. We're not an outlier. We believe we had an early indication in Q2, especially the second half of Q2, with request to align our shipments to align with our customers' plans. And again, as you know, we do have just-in-time arrangement with almost all of our large customers. And we try to react very quickly to their demand plans changes and their volume planning, and we have a very close alignment conversation with our customers to make sure that we respond quickly to changes in volume and mix. What you see right now is an early indication from our customers related to volume and mix.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

I think I'll add to that, Krish. Over the last few years, there's been a much higher coupling within the supply chain to the demands of the business. And for our major customers, we supply inventory to them on a just-in-time basis based on min-max spends. Now those spends can change as volume changes, but you don't have the big buildups of inventory that you had in the past. So when you have an inflection point like this, there'll be a little bit of inventory because you have inventory in the bins. But it's less than a quarter, it's not like we've seen maybe going back several years where you could have 1 or 2 quarters of just plain inventory burn. It's very different from that now.

Operator

Our next question comes from the line of Tom Diffely of D.A. Davidson.

Thomas Robert Diffely - *D.A. Davidson & Co., Research Division - MD & Senior Research Analyst*

So maybe just getting back to the initial kind of semiconductor cycle question, do you see a difference in how you expect either the memory side of the business to come back or the foundry, logic side of business come back in terms of timing? Is one of those expected to come back before the other?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Tom, we don't have visibility to the timing of the recovery. And even if you look at recent news that came from the industry, we heard just this morning that Samsung is talking about investment in 2019. But they remained quiet about 2018. So we are confident that we will see recovery across-the-board, both in logic, foundry and memory, starting in the beginning of 2019, but I cannot tell you which one is going to be first.

Thomas Robert Diffely - *D.A. Davidson & Co., Research Division - MD & Senior Research Analyst*

Okay. And then you did talk about how you are fairly bullish on 2019 and beyond and you see etch and dep intensity continuing to go up. Is that also true with the power supplies, the power supply intensity on both going forward?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Yes. In general, what you see, as the industry, especially memory, is migrating to more complex devices and also logic and foundry, there is an increase in the complexity of the tools and some of the increase has to do with higher power and higher capabilities in terms of control and metrology. As a result of that, we expect to see in the future increase in dollar content per chamber.

Thomas Robert Diffely - *D.A. Davidson & Co., Research Division - MD & Senior Research Analyst*

Okay. And it sounds like with the acquisition of LumaSense, you started to augment that with some new products as well. So I guess, talking about LumaSense, you talked about an $85 million payment, but I assume there is also the assumption of some debt. Just kind of curious if you could talk about the level of debt you're assuming as well.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes, Tom, it's $85 million on a debt-free basis. So there won't be any liabilities. We will acquire net working capital, and there is an adjustment for that based on the target amount. But otherwise, it's a pretty clean transaction.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Tom, let me say, if I may say a few words about LumaSense. LumaSense is extremely complementary to what we have in semi. Our Sekidenko product line is the market leader in temperature measurement using pyrometry in the semiconductor industry. LumaSense provides complementary technology based on fiberoptics thermometry that is complementary to pyrometry. However based on 2017 revenue, their semi content is only 25%. Their industrial content is 75% of revenue, which is exciting for us as we continue to expand our measurements in thermometry solutions and especially with them with photonic measurement capabilities into new verticals increasing our SAM and it's very complementary to our power products as we go into more thermal and power applications in new verticals. They were growing modestly profitable. And it's a company that has a huge potential that we can help accelerate just like we did with the last 7 acquisitions we had.

Thomas Robert Diffely - *D.A. Davidson & Co., Research Division - MD & Senior Research Analyst*

Okay. Sounds good. And then, just finally for Paul on the tax side, talk about 16% to 17% sounds like for the next couple of quarters. Is the long-term rate still expected to be in the mid-teens? Or is that 16% to 17% range a little bit more feasible?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes. Tom, 16% to 17% is where things are shaking out after the U.S. tax reform. We do think there are other strategies that will allow us to bring the rate down into that mid-teens range over the next 12 months or so.

Operator

Our next question comes from the line of Patrick Ho of Stifel.

Brian Edward Chin - *Stifel, Nicolaus & Company, Incorporated, Research Division - Associate*

This is Brian on for Patrick. Maybe to start with, I guess, the semi versus industrial mix at LumaSense seems a little bit more skewed to industrial than we'd, maybe, initially understood, and so that's interesting. Just curious if you have sort of the headcount for LumaSense and is the -- the sales force headcount more specifically also sort of 3 quarters industrial, kind of 1 quarter semi also really focused on the industrial market there?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

So I can share with you the number of employees right now. We haven't closed the deal yet. As you know, we're right now waiting for the -- to closing. But I can tell you that sales to the semiconductor industry usually are being handled by account teams, while sales into industrial applications in many cases go through channels. So counting salespeople heads does not reflect volume of business that goes into different industry segment. Even in our case, our semiconductor business is being managed by a very small team of account management teams, while our industrial revenue is managed through very broad base of global channels that are either regional expert or industry experts. Now the delineation in the revenue of LumaSense that I basically talked about, is based on the 2017 revenue split between semi and industrial. In the industrial world, they were very broad from automotive to oil and gas to energy, power generation, et cetera. It's a very broad base of applications, all served by photonic-based measurement and sensing solutions.

Brian Edward Chin - *Stifel, Nicolaus & Company, Incorporated, Research Division - Associate*

Got it. Okay. Great. That's very helpful. Makes a lot of sense too. Maybe just one -- another question here. Just more broader and then talking about the existing business evolving. In industrial, roughly, how much of that business is non-U. S. -- I think non-U. S. overall for the business is something like 1/3, but I imagine it's a little bit higher for industrial. I'm just curious, what are you tracking more broadly with customers and further more broadly in terms of understanding whether export controls and the tariff situation will have any impact on current momentum you're seeing in the industrial market?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

So let me start with the tariff and ask, maybe, Paul to give you some information about the tariff.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes, so on the tariff side -- well, first of all, on both sides of this, we have very few products that are subject to export control. There are a few, but they're limited to a very small number of countries. On the tariff side, obviously, the environment related to tariffs continues to evolve and the rules and the application of those rules are still evolving. We've looked at the first list that came out and that's very small impact on the company. The second and third lists broadly could have more impact. But at this point, there is a number of open questions about how the rules will be implemented. There is a lot of mitigating strategies, both on the commercial and operational basis. So the net-net of it, at this point, we don't know, but we believe it's minimum.

Brian Edward Chin - *Stifel, Nicolaus & Company, Incorporated, Research Division - Associate*

Maybe one more question there for you then, Paul. Is there any impact on gross margins in Q2 from lowering utilization rates? I guess the signals in the semi market started to weaken in sort of mid-late Q2.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes. There is some impact and volume will play a role. It's more of a Q3 impact than a Q2 impact. The impacts we saw in Q2, I'd say, were more timing related. There was some inventory revaluation as we're seeing lower costs, that's good news in the long run, but has a short-term impact. There is some transition costs as we are consolidating some manufacturing activity. We saw early demand that was strong in the quarter. We talked about that at the end of last quarter, which caused us to have a little higher expediting costs on freight. So when we look at the margins for the quarter, although they were lower, there is nothing structural in the margins that would impact us. And even the -- that little bit different mix with semi industrial had no impact. So we don't see structurally a reason why our margins would be any different than they've been historically. Volume will have a modest impact just as an impact on fixed cost.

Operator

Our next question comes from the line of Weston Twigg of KeyBanc Capital Markets.

Weston David Twigg - *KeyBanc Capital Markets Inc., Research Division - MD & Senior Research Analyst*

Just on LumaSense. First, I wanted to ask if you need Chinese approval for the acquisition?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

No, we don't.

Weston David Twigg - *KeyBanc Capital Markets Inc., Research Division - MD & Senior Research Analyst*

Okay. And then, I also wanted to ask about 2019, you said you're confident it would be a growth year, but just wondering what kind of visibility you have and whether you think that, that's driven by both semi or non-semi or both and if you could maybe help us just understand what some of the key drivers are for 2019 to give us some conviction in that.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Look, Wes, we expect to see growth in both semi and industrial. And we base that belief on general information available to us, but also planning indications in signals we get from key customers.

Weston David Twigg - *KeyBanc Capital Markets Inc., Research Division - MD & Senior Research Analyst*

Could you give better visibility in the industrial versus semi given some of the moving parts in semi right now?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

I would say that some of the semi revenue is projects related, and in those cases, we have some more visibility, long-term, because some of these projects may take time and they're large in size. For example, the recent win that we had in the PV solar, thin film PV solar cell manufacturing, it was a process of bidding on this project and resulted in a win that will give us new revenue for 2018 in the mid-teens of millions of dollars. So in that case, we have better visibility because the projects are clear and are visible. And we basically go through a process of design wins into this project. In term of the semi industry, a lot of the changes are based on basically, since we already did design into those applications and products, it's more about understanding the dynamic of the end-user and the impact on our customers. The short-term changes in volume and mix are driven by market trends, not very much by design wins. Design wins usually take 2 to 3 years to convert to mass production. So in a way, as I said earlier, we -- in some cases, we have good visibility for the industrial, and in some other cases, it's just like semi. So it's a mix. We -- from our advantage point right now, we believe that 2019 will be a growth year for us across-the-board from our advantage point. Semi, industrial and service and, obviously, as we continue to acquire, we expect to accelerate that through acquisitions.

Weston David Twigg - *KeyBanc Capital Markets Inc., Research Division - MD & Senior Research Analyst*

Okay, that's very helpful. And if I could just -- I had one clarification on a statement you made. I think, you said photonics-based products should go to over $100 million per year over 3 years. Wondering now if you could give us the split between what Advanced Energy sells into the photonics business. And is all of the LumaSense revenue photonics?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

No. We have a combination. Right now, we acquired LumaSense because it was very complementary to our own photonic-based product line. We have had a leading position in pyrometry for temperature measurement in semiconductor applications for many years. The product line nickname or brand name is Sekidenko. And Sekidenko was a very successful, very strategic product line for us because it's tightly aligned and connected to delivering of power into thermal applications. So Sekidenko, combined with LumaSense, will be about mid-$70 million of revenue now. And we expect to grow that business within 3 years to greater than $100 million a year in revenue. LumaSense is a company with huge potential that was not really realized. They were growing moderately profitable. I think their operating income was mid-teens in 2017. We believe that just like we did in other acquisition, we can accelerate their growth and accelerate their profitability.

Operator

Our next question comes from the line of Pavel Molchanov of Raymond James.

Pavel S. Molchanov - *Raymond James & Associates, Inc., Research Division - Energy Analyst*

Back in May, you guys increased the share buyback authorization by $50 million. And now that you're making clearly the largest acquisition in many years, I'm curious if the cash outflow to pay for LumaSense will have any impact on the pace of repurchases whether in the current quarter or beyond that?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes. It's a good question, Pavel. Our share buyback program, as you know, is an opportunistic program. We have been more active in that program. And in fact, as you -- as was noted, to date through the end of Q2, we've bought back about 600,000 shares of stock and spent a little over $38 million. If you look at actually through our earnings release stated in the 10-Q, we repurchased a little over 700,000 shares and spent about $47 million on stock. And since the program began, we've bought 2.9 million shares in about $126 million. So it's an active program for us. It's part of the 30% of cash flow that we've allocated to share buyback. And it may go up and down based on market conditions. But we believe we can do both acquisitions and share repurchases when it makes sense.

Pavel S. Molchanov - *Raymond James & Associates, Inc., Research Division - Energy Analyst*

Okay. One more on LumaSense and I respect the fact that you don't want to get into too much granularity, but in the past, you've talked about kind of a range of EBITDA multiples that you're targeting. Does this particular deal -- you haven't disclosed the EBITDA, but how do you think about the valuation metrics other than just, I guess, revenue?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes, I think, Pavel, this would fall into what you would think it as a fairly normalized valuation. You know it's about 1.4x revenue. I think you'd find the EBITDA in sort of the 9 to 10 range based on trailing earnings. But I think the important point here is that, we believe that we're uniquely positioned to add a lot of value to this company because it's complementary to our products, it certainly expands our position in the industry markets and it's complementary to our industrial channels. It's also highly complementary to our semiconductor products, and we believe we can bring significant additional exposure to the semi market than they've been able to obtain on their own. And so we believe that, on a forward basis, there is a tremendous amount of value that can be generated from this -- from the combination of the 2 companies.

Operator

Our next question comes from the line of Mehdi Hosseini of SIG.

Mehdi Hosseini - *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

A couple of follow-ups. When you look at all your semiconductor OEM inventory of your components, and hypothetically, how long can they use that inventory without coming back to you? And I understand, this is a hypothetical question, I'm not asking you about WFE, but I'm just thinking of a scenario where your customers would favor reducing their own inventory rather than procuring additional components. And I have a couple of follow-ups.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

So Mehdi, as we discussed in the past, our relationship with our key customers is based on just-in-time basically contracts. And they pull our products when they need them. And we basically have inventory held for them, as Paul said earlier, with min-max levels that we need to maintain volume in inventory within these 2 levels of inventory for our customers. So when a customer decides to -- that they do not need -- when they need to decline or increase their pull rate, they would, in general, give us demand signal with kind of a heads-up about what their plans are, to make sure that we do not manufacture more than the upper level of the target inventory we need to or that we remain above the minimum level so we don't starve them for parts. So in general, we do not know exactly how much inventory they have in their production sites. All we know is how much they pull from our inventory, from our bins, as they plan their own manufacturing. Now we have enough demand indications and forecasting alignment meetings to know and understand, in general, which direction they're going into, which allows us to plan our manufacturing to make sure that we're between the min-max levels in the bins. Now in Q2, we got an early indication that there'll be a decline in the pull rate from our inventory, right, and what we did we basically decided to accommodate our customers' demand plan and to basically let it flow-through without increasing our shipments into the bins and increasing inventory too much.

Mehdi Hosseini - *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

Okay. Very insightful. So when I'm looking at your inventory in absolute dollar value about $110 million, which is a multi-year high, that inventory should trend down into the second half as you -- as your customers get back on track, specifically semiconductor customers?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes, that's absolutely right and there is a couple of reasons for that. Certainly, we -- the demand sell late in the quarter, we did not ship product to the semi industry as we had anticipated. And so we have some finished -- a little bit of finished goods, but also raw materials that have built up. That will all work its way through. It's all very current product and it's just timing. As you've all said, we were also staging inventory late in the quarter for this solar PV win, which is a different product. So we had those crosscurrents happen at the same time. I'd say, in addition, we had a couple other temporary things. We strategically tried to source some supply around some long lead items, which had been scarce in the industry. And in a particular item against which we bought some material to secure a long-term supply for that product. And so when you put that together, it kind of was a confluence of several factors, again, all of which will work themselves through over the next quarter or 2. So we fully expect inventory to decline from these levels because those investments are basically behind us.

Mehdi Hosseini - *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

Okay. Very insightful. Two quick follow-ups. Just for a purpose of modeling and assuming that LumaSense acquisition will be closed by the end of Q3, should I assume that the incremental revenue contribution into the December could be in the $20 million to $30 million a quarter?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

No. The LumaSense did $60 million in 2017. Obviously, it'll take a little bit of time for us to gear up the channels, drive penetration into the semi markets and things like that. So I think at this point, there is not a lot of seasonality in that business. So you could look at a $60 million annualized rate as a good starting point, so that we haven't given any specific guidance on it.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

So Mehdi, I want to clarify something. When I talk about our aspirational goal for the photonic business comprising of our own Sekidenko parameters and LumaSense products combined, we will -- we aspire to grow this business to more than $100 million a year within 3 years. But if you look at LumaSense right now, and this is not guidance, but if you look at last year, 2017, their revenue was approximately $60 million. So if you analyze that, you can make an assumption about December quarter.

Mehdi Hosseini - *Susquehanna Financial Group, LLLP, Research Division - Senior Analyst*

Okay. And then, one final question, and just more of a bigger picture. Given the acquisitions that you have made, how should I think about your target that you provided earlier this year. You said your aspiration is to hit more than $1 billion of revenue with earnings of $550 million to $650 million. Looking at synergies between your semi and acquisitions and I'm just thinking about R&D, should I assume that at some point there would be synergies? And is that dialed into the $550 million to $650 million longer-term revenue target?

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

Yes, that's a good question. I think if you look at the acquisitions we've done, which is now, essentially 4 acquisitions over the last 12 months. We have added somewhere in the neighborhood of $75 million to $100 million of revenue from -- on an annualized basis inorganically. That's against goal over the 3 years of $150 million to $200 million. So we think in the time frame, we're well on our way to achieving the inorganic part of that strategy with acquisitions that are highly complementary, leverage our core competencies and our structure. As we look at where the synergies come from, we believe a significant amount of that comes from additional growth. Again, in the case of LumaSense, we think we're uniquely positioned to take the scope of products that they offer and be able to offer them much more broadly and be able to drive increased revenue. We also expect to see some cost synergies as we have in our other acquisitions. Those won't primarily come from R&D, they'll primarily come from infrastructure as we leverage our broader channel base, our common systems, our broader footprint and see opportunities to consolidate some activities. That's where we'll see the operating synergies for the most part.

Operator

Our next question comes from the line of Amanda Scarnati of Citi.

Amanda Marie Scarnati - *Citigroup Inc, Research Division - Semiconductor Consumable Analyst*

Quickly remind us on your exposure to Tokyo Electron and what if any sort of business you have there?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Amanda, to the extent we can talk about the customers, we are a supplier to Tokyo Electron. We are a partner at the Tokyo Electron. And we're working extremely closely with Tokyo Electron like with other semiconductor OEMs on future generation technologies and products that will allow the industry to have new solutions of plasma processes.

Amanda Marie Scarnati - *Citigroup Inc, Research Division - Semiconductor Consumable Analyst*

And then the last question I have. Most of everything I had was already asked in the call, but in terms of lead times. Have you seen any fundamental change in lead times over the past 6 months?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

In semiconductors, Amanda?

Amanda Marie Scarnati - *Citigroup Inc, Research Division - Semiconductor Consumable Analyst*

Yes.

Paul R. Oldham - *Advanced Energy Industries, Inc. - Executive VP & CFO*

In the supply chain, we have seen increases in lead times.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

In our supply chain, we have seen increase in lead time in some areas where I would say some passive components' lead times in the industry have grown, in some cases more than doubled or tripled. And this is one of the reasons that we have increased our inventory because of staging material we need to due to extended lead times. So in our supply chain, we saw increase in lead time, we did not have change in our lead time simply because of the fact that we operated just-in-time demand flow technology relationship with our key customers.

Amanda Marie Scarnati - *Citigroup Inc, Research Division - Semiconductor Consumable Analyst*

And then the last question I have, just on the traction on the acquisition target, I think you just answered a little bit of that. But how much of the -- what percentage of the acquisitions that you've done to date have been in semis versus non-semis? I believe the initial goal was to have the majority in the non-semis market. But I believe the last 2 acquisitions have been a little bit more heavily weighted towards semis. Could you just talk about that a little bit?

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Okay. So most of the acquisitions we made recently are non-semi. As I mentioned earlier, the LumaSense business, based on their 2017 revenue, is 75% industrial and 25% semi. Trek is a combination of semi and industrial. Monroe product line is a combination of mainly industrial. Excelsys is

50% medical equipment and 50% industrial. So if you look at the whole pie together, I would say we're 30% to 40% semi and the rest industrial and very, very diverse industrial.

Operator

And I'm showing no further questions at this time. I'd like to hand the call back to the management for any closing remarks.

Yuval Wasserman - *Advanced Energy Industries, Inc. - President, CEO & Director*

Thanks everyone for joining us today. We are obviously at an inflection point right now in semi. Not a big surprise. Our expectations for the second half are in line with the rest of the industry. We are excited about the future. We see growth coming in 2019. And we accelerate that growth in our industrial, very high growth success that we do both organically and inorganically. Thank you so much for your questions today. Bye-bye.

Operator

Ladies and gentlemen, thank you for participating in today's conference. That does conclude today's program. You may all disconnect. Everyone, have a great day.