S1 2023 Earnings Call

Company Participants

- Peter Wennink, President and Chief Executive Officer
- Roger Dassen, Executive Vice President and Chief Financial Officer
- Skip Miller, Vice President of Investor Relations

Other Participants

- Aleksander Peterc, Analyst
- Alexander Duval, Analyst
- C.J. Muse, Analyst
- Francois-Xavier Bouvignies, Analyst
- Joe Quatrochi, Analyst
- Krish Sankar, Analyst
- Mehdi Hosseini, Analyst
- Sandeep Deshpande, Analyst
- Sara Russo, Analyst
- Stephane Houri, Analyst
- Tammy Qiu, Analyst

Presentation

Operator

Good day, and thank you for standing by. Welcome to the ASML 2023 Second Quarter Financial Results Conference Call on July 19, 2023. At this time, all participants are in a listen-only mode. (Operator Instructions) Please be advised that today's conference is being recorded.

I would now like to turn the conference call over to Mr. Skip Miller. Please go ahead.

Skip Miller {BIO 20244900 <GO>}

Thank you, operator. Welcome, everyone. This is Skip Miller, Vice President, Investor Relations at ASML. Joining me today on the call are ASML's CEO, Peter Wennink, and our CFO, Roger Dassen. The subject of today's call is ASML's 2023 second quarter results. The length of this call will be 60 minutes and questions will be taken in the order that they are received. The call is also being broadcast live over the Internet at asml.com. The transcript of management's opening remarks and a replay of the call will be available on our website shortly following the conclusion of this call.

Before we begin, I'd like to caution listeners that comments made by management during this conference call will include forward-looking statements within the meaning of the Federal Securities laws. These forward-looking statements involve material risks and uncertainties. For a discussion of risk factors, I encourage you to review the Safe Harbor statement contained in today's press release and presentation found on our website at asml.com and in ASML's Annual Report on Form 20-F and other documents as filed with the Securities and Exchange Commission.

With that, I would like to turn the call over to Peter Wennink for a brief introduction.

Peter Wennink {BIO 1852674 <GO>}

Thank you, Skip. Welcome, everyone, and thank you for joining us for our second quarter 2023 results conference call. Before we begin the Q&A session, Roger and I would like to provide an overview and some commentary on the second quarter 2023, as well as provide our view on the coming quarters. And Roger will start with a review of our second quarter 2023 financial performance with added comments on our short-term outlook. And I will complete the introduction with some additional comments on the current business environment and on our future business outlook.

Roger?

Roger Dassen {BIO 15064806 <GO>}

Thank you, Peter, and welcome, everyone. I will first review the second quarter financial accomplishments and then provide guidance on the third quarter of 2023.

Let me start with our second quarter accomplishments. Net sales came in at EUR6.9 billion, which is at the high end of our guidance. We shipped 13 EUV systems and recognized EUR2 billion revenue from 12 systems this quarter. Net system sales of EUR5.6 billion, which was mainly driven by Logic at 84%, with the remaining 16% coming from Memory. The net sales value of our fast shipments not yet recognized in revenue in the first half of 2023 amounts to EUR1.4 billion.

Installed Base Management sales for the quarter came in at EUR1.3 billion as guided. Gross margin for the quarter came in at 51.3% which is above our guidance, primarily driven by additional deep UV immersion revenue in the quarter, partly related to starting revenue recognition upon shipment for immersion systems that are fast-shipped.

On operating expenses, R&D expenses came in at EUR1 billion and SG&A expenses came in at EUR281 million, both basically as guided. Net income in Q2 was EUR1.9 billion, representing 28.1% of net sales and resulting in an EPS of EUR4.93.

Turning to the balance sheet, we ended the second quarter with cash, cash equivalents, and short-term investments at a level of EUR6.3 billion. Moving to the order book, Q2 net system bookings came in at EUR4.5 billion, which is made up of EUR1.6 billion for EUV bookings and EUR2.9 billion for non-EUV bookings. These values also include inflation

correction. Net system bookings in the quarter were driven by Logic with 69% of the bookings while Memory accounted for the remaining 31%. At the end of Q2, we have around EUR38 billion in our backlog.

With that, I would like to turn to our expectations for the third quarter of 2023. We expect Q3 net sales to be between EUR6.5 billion and EUR7 billion. We expect our Q3 Installed Base Management sales to be around EUR1.4 billion. Gross margin for Q3 is expected to be around 50%, little below last quarter due to deep UV mix. The expected R&D expenses for Q3 are around EUR1 billion, and SG&A is expected to be around EUR285 million.

Our estimated 2023 annualized effective tax rate is expected to be between 15% and 16%. An interim dividend of EUR1.45 per ordinary share will be made payable in August 10, 2023. In Q2 2023, we purchased around 0.8 million shares for a total amount of around EUR500 million. As mentioned last quarter, in the current environment, we expect to see ongoing pressure on our free cash flow. As a result, we will be prudent in managing our cash flows and maintaining relatively higher levels of cash.

With that, I would like to turn the call back over to Peter.

Peter Wennink {BIO 1852674 <GO>}

Thank you, Roger. As Roger has highlighted, another solid quarter in a dynamic environment. Significant uncertainty remains in the market due to a number of global macro concerns around inflation, rising interest rates, recession, and the geopolitical environment, including export controls. Although certain end markets seem to be reaching the bottom of the cycle, the semiconductor industry is running at very high inventory levels, leading customers to moderate wafer output as the supply chain works to reduce and rebalance inventory levels. In order to limit wafer output, customers continue to run at lower litho tool utilization levels. Customers remain cautious due to the uncertainty around the timing, the shape, and slope of the recovery.

We had an increase in bookings this quarter, resulting in a backlog of around EUR38 billion exiting the second quarter. In our EUV business, we have seen some shift in demand timing. The majority of the shifts are due to fab readiness with some elements of uncertainty around recovery. Deep UV demand still exceeds supply. While we have seen delays in deep UV demand from some customers, it has been compensated by strong demand for tools and mature and mid-critical nodes, particularly in China. The demand fill rates for our Chinese customers over the last two years was significantly less than 50%, so they now take the opportunity to receive and install systems in their fabs as a supply of tools becomes available.

Turning to our business, starting with deep UV, we are now planning to ship more than 375 deep UV systems with a mix of over 25% immersion. For immersion systems using the fast shipment process, we have come to an agreement with customers on the reduced acceptance test procedure that allows revenue recognition on shipment. As a result, we now expect additional revenue of around EUR700 million in 2023 and this in turn reduces the amount of delayed revenue out of the year, and we now expect around

EUR2.3 billion of delayed revenue from 2023 into 2024 versus around EUR3 billion of delayed revenue as previously communicated.

This incremental deep UV revenue increases the expected year-over-year growth of our non-EUV business from around 30% as communicated last quarter to around 50%. In EUV, due primarily to customer adjustments in timing and the demand timing related to delays in fab readiness, as well as some remaining supply chain issues, we now expect to ship around 52 systems this year, translating to a year-over-year revenue growth for EUV of around 25% versus the previously communicated expectation of around 40%.

For the Installed Base business, with the current utilization rates, market uncertainty, as well as timing of recovery, customers are delaying productivity and performance upgrades on the litho systems. Therefore, we now expect our installed base business this year to be similar to last year versus the growth of around 5% as previously communicated.

In summary, based on our view today, with higher deep UV revenue, offset somewhat by lower expectations on our EUV and Installed Base business relative to last quarter, we now expect net sales growth for the year to move towards 30% versus the previously articulated expectation of over 25%. We still expect a slight improvement in gross margin compared to 2022. No change relative to what we said last quarter as the positive margin impact from increased deep UV immersion revenue is expected to be offset by the dilutive impact of lower upgrade revenue in 2023.

On the geopolitical front, as it relates to export control, the final Dutch regulations that were published at the end of last month are basically aligned to our expectations communicated last quarter and published on our website. Due to these export control regulations, ASML will need to apply for export license with the Dutch government for all shipments of its most advanced immersion deep UV lithography system, which means the TWINSCAN NXT:2000i and subsequent immersion systems.

As a reminder, sales of ASML's EUV tools have already been restricted and the business in China is predominantly focused on mature and mid-critical nodes. The new Dutch export regulations will come into effect on September 1, 2023. There were also some reports in the media recently about additional US export controls. Of course, we will and cannot respond to speculation. However, based on our current understanding, we do not expect to change our previously communicated view. Therefore, based on everything we have been made aware of as of today, we do not expect the Dutch and potential additional US measures to have a material impact on our financial outlook for 2023 nor on our longer-term scenarios as communicated during our Investor Day in November last year.

Looking towards next year, our customers across different market segments are currently more cautious due to the continued macroeconomic uncertainties. Based on our view last quarter, customers were expecting a recovery in the second half of this year, but now seems that this is moving more towards 2024. Also, the shape and slope of the recovery remains unclear. However, based on a combination of the current firm demand and a strong backlog of around EUR38 billion, there are clearly still opportunities for growth in

2024. But given the mentioned uncertainties, it's too early to be specific about the forecast for next year. We will continue to follow the market developments and update you on our view of next year in the coming quarters.

Despite the near-term uncertainty, the longer-term megatrends we talked about at our Investor Day are broadening the application space and fueling demand for advanced and mature nodes. Secular growth drivers in semiconductor end markets such as electrification and AI, along with increasing lithography intensity on future technology nodes are driving demand for our products and services.

In summary, while the current macro environment continues to create significant uncertainty, we are working through a strong backlog and expect growth this year towards 30%. In the near to medium term, customers remain cautious as they moderate wafer output to help lower inventory levels in the supply chain and to look to build confidence around the timing and the slope of the recovery.

ASML and its supply chain partners are still actively adding and improving capacity to meet future customer demand, as we remain confident in our long-term growth opportunity.

And with that, we would be happy to take your questions.

Skip Miller {BIO 20244900 <GO>}

Thank you, Roger and Peter. The operator will instruct you momentarily on the protocol for the Q&A session. Beforehand, I would like to ask that you kindly limit yourself to one question with one short follow-up, if necessary. This will allow us to get it to as many callers as possible.

Now, operator, could we have your final instructions and then the first question, please.

Questions And Answers

Operator

Thank you. (Operator Instructions) The first question comes from the line of Krish Sankar from TD Cowen. Please go ahead.

Q - Krish Sankar {BIO 16151788 <GO>}

Yeah, hi, thanks for taking my question. I have two of them. Peter, I understand you don't want to give an outlook for next year and I'm not looking for a revenue guidance, but if I look at from a unit standpoint or a system shipment standpoint, do you think deep UV and EUV units would grow in calendar '24 over to the '23?

A - Peter Wennink {BIO 1852674 <GO>}

Well, if I would know this, then I would probably give you some outlook on 2024. But I just refer back to what we call the firm demand from our customers which -- and the strong

backlog. And of course, as you understand, our full 2024 year is not fully covered by PO. So still POs need to come in, but we do have firm demand. Now that is a demand that for 2024 you cannot decouple from the outlook on 2025. And 2025 clearly shows the opening and the first ramp of some significant advanced fabs in the logic space. I mean, the 2-nanometer fabs, 3-nanometer for the bulk -- all tree leading customers. That of course leads to the firm demand in what we currently see. And that means we see significant opportunities also like we said, certainly, for growth in 2024.

However, we also need to realize that the uncertainties as it relates to macroeconomic developments and particularly, I think the slope of the recovery, I think we will very likely, as many analysts believe, but also customers say, we will probably see, let's say, the thrust of this downcycle somewhere this year and then we see a recovery coming. But then it's all about the slope of the recovery and that's driven really by the macroeconomic uncertainty.

So the extent to which they are going to add more capacity in 2024 due to, let's say, the macroeconomic situation, that's the uncertainty. I think, in 2024, there's higher level of uncertainty of those fabs that will take those machines because they need to ramp in 2025 the next nodes. That's pretty certain. But it's that uncertainty on the macroeconomic demand that makes us a bit more uncomfortable to give you some specific guidance on next year.

So, in summary, the order book looks good, the firm, the map looks good. But I'd love to see all that are being translated into orders over the next couple of quarters. So this is why we also said we are going to follow this very closely and we're going to keep you abreast of what we're seeing and what our customers are telling us in the next one or two quarters to come.

Q - Krish Sankar {BIO 16151788 <GO>}
Got it.

A - Peter Wennink {BIO 1852674 <GO>}
I know I didn't give you a specific answer, but I hope it was specific enough.

Q - Krish Sankar {BIO 16151788 <GO>}
No, it was. Thanks, Peter. Really appreciate the context and the input. And then a quick follow-up for Roger. Can you give us the composition of the backlog in terms of EUV, deep UV, memory, logic, China and also what do you expect China as a percentage of sales to be for this year? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}
Yeah. So the backlog in terms of composition we have around 85% the backlog is for EUV and immersion combined, so that gives you I think a pretty good indication there. EUV in total is around EUR21 billion out of the total backlog of EUR38 billion. So then you have I think the key parameters in there. We do not distinguish in terms of regions. I think we told you before that China is over 20% in the backlog and that also drives our expectation for

how you're going to see system sales develop in the next period, but I think that's the key composition of the backlog as we see it today.

Q - Krish Sankar {BIO 16151788 <GO>}

Thanks, Roger.

Operator

Thank you. We will now go to our next question. And your next question comes from the line of Mehdi Hosseini from SIG. Please go ahead.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Yes, thanks for taking my question. Peter, I understand you don't have a clear picture on '24 outlook. But how are you adjusting your own capacity? Can you give us an update how we should think about DUV and EUV capacity into '24? And I have a follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, that's a good question. And I think this is also what we are of course internally discussing, but again, what we -- the capacity 2024 is really a function of what we need in 2025. And the good thing about 2025 is, when we look at the number of fab openings and the ramp profile of new fabs in 2025 across our customer base, which also includes memory, yeah, leads us to believe that we should be very careful in reducing our capacity in 2024 because if you do that, you won't be able to ship in 2025 given the fact that our lead times in the supply chain now are ranging from 12 to 15 to 18 months. So this means, we will -- at this moment in time, we don't see any reason to reduce any capacity plans for 2024 because -- and that's basically driven by our views on the 2025 timeframe. So I don't expect any adjustments there and we're not planning for it.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

But perhaps the question has to do with the slope of the capacity ramp like on DUV going from 375 to 600. That requires significant ramp and I'm just wondering if the ramp would look more like a step function in the latter part of '24 as you prepare for '25.

A - Peter Wennink {BIO 1852674 <GO>}

Well, I mean, you talk -- there's difference between the ramp and the capacity. I mean, the capacity is 600 units, but that's about 25% immersion. That's you could call expensive capacity and 75% is dry, which is less expensive capacity. We're going to do that, because we are currently -- this year we plan to ship more than 375 systems. And I also feel that when we look at the firm demand of course for deep UV, we don't have all those orders, but the firm demand then we actually need more capacity next year. So it's going to be capacity are step functions. It is not like a gradual function.

So it means, if we will have 600 units by 2025, 2026, somewhere by end of 2024, in 2025, we need to have that step capacity built in the supply chain. Whether we are going to put all the orders in, that's dependent on the demand. Yeah. But I think what we're putting in for 2025, 2026 is there for the remainder of this decade. So we need to do this

anyway, because we are strongly convinced, as I said, in the prepared remarks that the long-term view that we have of this market is still very much intact. So you have to distinguish between a ramp as a result -- as you know, as a result of the market demand and the capacity ramp because the capacity ramp is a step function and it hence serves the purpose for the longer term.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

And my follow-up has to do with technology migration, especially on EUV NXE:3800 is supposed to be a platform upgrade, which carries a higher ASP and it's my understanding that the platform could be used for both 3 and 2-nanometer, where are we with booking for those systems and would that ASP uplift would provide you something as a cushion against a challenging macro environment?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, in terms of bookings, of course, the bookings for the 3800 are coming in, because if you look at next year, next year is going to going to show you a good blend of 3600 and 3800 tools. So obviously quite some of the bookings for EUV, Mehdi, that are currently coming in are also for the 3800. The 3800s we promise you that on this call we would disclose the ASP and the ASP has at least north of EUR200 million. So that is a clear indication I think of how that indeed will also help in terms of revenue. It will also help in terms of gross margin ultimately because even though it's a more expensive machine to make, because bear in mind, there are commonalities. There is quite some commonality in parts between high NA tool and the 3800 tool. It's a more expensive tool to make, but it's also a very healthy uptick in terms of ASP. So it will help both on the revenue side and also on the gross margin side starting in '24, but definitely in '25 when the lion's share of the tools, there will be 3800s.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Thank you.

Operator

Thank you. We'll now go to our next question. And your next question comes from the line of Stephane Houri from ODDO BHF. Please go ahead.

Q - Stephane Houri {BIO 3899118 <GO>}

Yes, good afternoon. Thank you for taking the question. I would like to speak about the gross margin, because you said basically that despite the changes in the growth rate of different products, you still see slight improvement this year. But you also confirm the 54% to 56% in 2025, so that's quite an improvement. What does it mean about the ramp of 2024 and can you maybe give us some color on the ingredient for the increase in the gross margin until 2025? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. I think you heard our enthusiasm to share numbers on 2024 or lack thereof. So I'm not going to do that. The growth drivers for 2025 in terms of the gross margin, that's a

number that I think are significant there. We just talked about one important one and that's the 3800. Of course, that's an important driver of gross margin improvement, definitely also in 2025. So that's one. The second one that I think is important in comparison to today, as you know, we are preparing both for capacity expansion on deep UV and low NA, but we're also preparing significantly and putting a lot of money into getting everything ready for high NA, both the manufacturing capacity here. We're building up teams in the field et cetera, et cetera. That currently is a significant drag on our gross margin as we have it today, because all of the costs that we're incurring to prepare for that capacity ramp and for preparing for high NA everywhere in the entire organization go straight to the gross margin today.

That effect should be gone by 2025, because at that point in time, you would hope that you're actually going to be in a position to utilize at least a significant part of that incremental capacity that you built. And also by that time, you would see meaningful numbers of high NA. So those are really important drivers of gross margin. And the only other one that I probably would give you is that is on the service side. As you know, we see a continued improvement of the EUV service margin in particular, but also in deep UV. And on both, we are driving to get the service margin up, both as a result of what we're doing on the revenue side, but also in terms of trying to further control the cost. So those are the main drivers why looking at 2025 we believe the scenarios that we gave you there, the 54% to 56% is a attainable and reasonable aspiration for us to have.

Q - Stephane Houri {BIO 3899118 <GO>}

Okay, thank you. And a quick follow-up if I may is about the order book, the memory now represents 31% of the bookings versus 21% last quarter. Is that the sign of a rebound in memory or is it something special here?

A - Peter Wennink {BIO 1852674 <GO>}

No, I think that's just where we are at this moment. I mean, part of it is -- that's the minority by the way. There's of course some orders from Chinese memory customers, but it's the minority. The majority is basically technology transitions out of the leading memory makers. They are just preparing for the next node transition, which is a technology transition, which need of course the type of machines and the type of technology that Roger just talked about, like for instance the EUV systems, the 3800s. And so this is what it is. It is not -- you shouldn't see this as an immediate addition to the memory output capacity. Perhaps, except Chinese ones, but that's like we all know that's mid-critical to mature stuff, that's not leading edge.

Q - Stephane Houri {BIO 3899118 <GO>}

Okay. Thank you. Very clear. Thank you very much.

Operator

Thank you. We will now take your next question. And your next question comes from the line of Sandeep Deshpande from JPMorgan. Please go ahead.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Yeah, hi. Can you hear me?

A - Peter Wennink {BIO 1852674 <GO>}

Very good. Thank you. Very clear.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Peter, one question for you. I mean, you talked about the challenging macro environment at the moment. How do you see -- I mean, you can see how utilization is doing at your customer base. On average, where do you see utilization is at the moment because that will be clearly the driver of when the customers start to get more positive in terms of orders back to you in the next few quarters? And secondly, in terms of China, China clearly is a very strong driver of your sales this year. I mean, when we look at utilized revenue, when we hear the data points in the supply chain, at least in the logic companies in China utilization is as bad if not worse than what we are hearing in other parts in the industry. So maybe to try to understand how sustainable these orders from China are into next year, given that the end markets even in China seem to be incredibly weak at this point.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. Good. Basically the utilization question, good question that will distinguish between memory and logic. I think in memory, I don't think we see a lot of bottoming out there. Yeah, it could be -- you could argue it's bottoming out, but we don't see kind of an inflection point. In logic, though it's very early, but we could see some of an inflection point today. But that's just over the last short period. So, see how sustainable that is, but I would think, if you think about that, that's bottoming out and you could even say, we've passed an inflection point. Although, it's still early.

Now, on China, how sustainable is that? That's correct. I mean, you see the same utilization trends in China, as we see in the rest of the world. But you have to realize that the demand in China has two elements. One, of course, it needs to fulfill the current demand and that's what we just talked about. I mean, the current demand is of course weak, but the most important point is the strategic investments and the fabs are being built for a purpose. When you look at what's made in China, it's mid-critical to mature semiconductors. And that's the sweet spot.

When it comes -- when you look at the big megatrends, the big megatrends around the globe where China is leading as a matter of fact, when you think about electrification of mobility, think about the energy transition, the IoT in the industrial space, the rollout of the telecommunication infrastructure, battery technology, that's all -- that's the sweet spot of mid-critical and mature semiconductor. And that's where China without any exception is leading.

Now, that means that the Chinese industry, the customers of the semiconductor industry needs semiconductors of that kind. And I can just tell you, in the discussions that we've had, the concern of many of our Chinese customers is that given the increase of the geopolitical tensions, they do not want to rely on supply that comes out of China. So it's very simple that they are going to build a significant amount of capacity in that space, in

the mid-critical to mature semiconductors to actually fuel those megatrends that where China is actually leading.

So if you then look at the big home market and the desire, because of the fear that they have on the increase in geopolitical tensions, they're going to build all those fabs themselves. And that's what's happening. Those fabs will be built. There are many new fabs and new companies that actually say, we're going to provide those type of semiconductors to support these megatrends that where China is indeed leading. And that's what's happening today. So it's not so much the current macroeconomic or the market situation that drives the demand, it's the strategic investment that drives the demand, because it's the dependence that that part of the Chinese industry has on imports. And I think it's very sustainable, this is very sustainable for the next couple of years.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Thank you very much.

Operator

Thank you. We will now go to our next question. And your next question comes from the line of Sara Russo from Bernstein. Please go ahead.

Q - Sara Russo {BIO 22673084 <GO>}

Hi, can hear me?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah.

Q - Sara Russo {BIO 22673084 <GO>}

Great. Hello. Thanks for taking my question. I was just wondering if you could give us an update on High NA. So indications are that customers are not delaying the tech transition. So are you still on track for first shipments to customers in 2024 and have you seen any increase in orders as we get closer to those first shipments?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we're still on track for the first shipment in 2024. Yes, we're actually -- this year we're starting to ship the first module. So that's on track and that also means for 2024. Yeah, I don't think they are delaying the introduction at all. You're absolutely right. And yes, we are still seeing orders coming in. So both is confirmative with the point made that -- and I think Roger alluded to that, that if there's anything on high NA, we need to make sure that the supply chain, which of course needs suppliers with critical new technology will actually be on time. So our main focus is on the execution in the supply chain, not so much from the demand side. It's really about execution.

Q - Sara Russo {BIO 22673084 <GO>}

Great. Thanks. And can we get -- maybe could you give us a little bit of color on where you stand on high NA orders in the backlog? So assuming that you now are sort of seeing a good number come in, can you give us a sense of orders in the backlog and timing of those orders?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. We said before that our customers, given there is only a very limited number of customers for high NA, our customers really do not want us to disclose PO bookings on high NA. I mean, that's the situation. That's why we're not sharing those data. But this -- for quite a while now, we're looking at double-digit numbers in the backlog, let me put it that way. And that step is quite a while back that we started to cross that level, so...

A - Peter Wennink {BIO 1852674 <GO>}

And it's increasing.

A - Roger Dassen {BIO 15064806 <GO>}

And it's increasing, yeah.

Q - Sara Russo {BIO 22673084 <GO>}

Excellent. Thank you very much.

Operator

Thank you. We will now go to our next question. And your next question comes from the line of Francois Bouvignies from UBS. Please go ahead.

Q - Francois-Xavier Bouvignies {BIO 19672683 <GO>}

Hi, thank you very much. Can you hear me okay?

A - Peter Wennink {BIO 1852674 <GO>}

Very clear.

Q - Francois-Xavier Bouvignies {BIO 19672683 <GO>}

Perfect. So the first question is obviously, Peter, you were clear on 2024 uncertainty, at least in terms of units and you will come back later with a clear picture. And just -- and Roger, you started to talk about the ASP for the EUV next year with the e-model coming to market, the 3800 with, if I understand correctly, an ASP of close to 20% growth versus all the models. Can you help us give us some color on the ASP, so something you kind of have maybe more visibility on to next year for EUV, so you touched upon, but also deep UV with all the moving parts with China, your new models as well of deep UV on the market, the 2100s, with a 20% improvement in overlay, you have inflation on top. So just how should we think about the ASP specifically you need to decide, [ph] if you like, about your both businesses, basically?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. First of all, I think I was quite clear I think on the ASP for the 3800. So I said north of EUR200 million. So I think that was clear. When it comes to ASPs in the deep UV landscape, of course, it is very widely distributed. And there obviously the mix effect is quite significant. And that is true, both within the portfolio of KrF of dry tools and also in wet tools. So you're absolutely right, I mean, the new models that we're introducing of course give significant value to the customer and therefore command a significantly higher price than all the models. So that is clearly the case. But it is completely dependent on the mix within the drive business and the immersion business.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. And also in the immersion business, you have to also realize that what I said in the prepared remarks that we cannot ship our most advanced immersion tools to China, but we can ship our mid-critical immersion tools to China. And that of course gives -- even in the immersion scope gives quite a significant spread. So it's very difficult to give you one number for the deep UV numbers, it's basically two heterogeneous.

Q - Francois-Xavier Bouvignies {BIO 19672683 <GO>}

Okay, thank you very much for that. And maybe, Roger, and the second question is on the Installed Base Management. I mean, if we look at the guidance of flat, again I understand that the level of upgrade is not as you maybe expect in the current environment. If you look at the guidance of flat, it would imply a decline in H2 year-over-year at least. So how should we think about the level of -- Peter, you mentioned small sign of recovery. It's early days, but a, I mean, small sign and the fact that the Installed Base Management, I would imagine, would be very close to the demand in terms of recovery or you to generate picking up. Just trying to reconcile that and how we should think about Installed Base Management into next year with your EUV as well going up and ASP per tool per year, I mean, business model.

A - Roger Dassen {BIO 15064806 <GO>}

Let me first take the question on '23 and then maybe, Peter, you want to expand it further. But as it comes to '23, I think the right frame of reference of course is not half year over half year, but it is the second half in comparison to the first half. In the first half, we had EUR2.7 billion and flat would mean that we're going to have EUR3 billion in the second half. So that would point at a recovery. And given the guidance that we've given for Q3, Q3 we indicated EUR1.4 billion. So it doesn't take a lot of compute power to calculate that that would mean EUR1.6 million for Q4. So that tells you that indeed we are looking at a recovery there. That would be commensurate with the perspective of the recovery that Peter has been talking about, but that's what we're looking at for this year and the slope of recovery there.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. And I think the slope of recovery is critical and very important, because, like I said, although it's very early, but you could argue and you look at the utilization graphs, you could think that there is an inflection point for logic. We've had that and then -- but it's still pretty early on. But if that would continue, then it's really important to look at the slope

because for upgrade business, you basically could argue you have a relatively short period of time before you hit again high utilization and then customers say, well, I don't have the time, I don't want to shut down the tool. So I think we will watch it very carefully together with our customers to say, okay, looking at the slope of the -- slope accelerates, then we really need to start negotiating with the customer quickly to putt in more upgrades. And that could be an upside when the recovery accelerates.

When it's a slower degree slope, they will probably take a bit more time, but that's also where it's the same reasoning. We now have time to upgrades, because we don't have full utilization of the installed base. So there is some upgrade there, but still customers are currently saying, market is not good. It's still CapEx because there are high-value upgrades. So they are a bit cautious now, but we have to start being very close to our customers in the next couple of quarters to say, if we see an opportunity, let's go, because before you know it, they don't have time.

Q - Francois-Xavier Bouvignies {BIO 19672683 <GO>}

All right. Thank you very much.

Operator

Thank you. We will now go to our next question and your next question comes from the line of Aleksander Peterc from Societe Generale. Please go ahead.

Q - Aleksander Peterc

Yes, hi, thank you for taking my question. I just have two. First one would be, you talk about the recovery being pushed out somewhat. And you do give a cautious message on 2024. So my question is really, is there a possibility that the significant fab openings you talked about in '25 could be pushed out by six months or a year? Is that something that's possible? I mean, if the customers have idle capacity for longer when they push out capacity additions as a result, all of those strategic planned openings, really strategic that will go ahead regardless of demand patterns, that's the first one. I have a follow-up. Thank you.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think, on this -- on the leading edge logic fabs, they will happen. I mean, they have -- basically it's not -- and that's driven by the roadmaps of the customers of our customers. It's the Apples, the Qualcomms, the NVIDIAs of this world. They actually have a very clear roadmap based on the 20 or the 3-nanometer designs and they want those new products to be introduced at that time. So that's going to happen. We have little doubt there. And I think on the strategic fabs in China, I made that very clear. I think it's just a strategic very clear focus area that they have, because they want to hedge against any negative geopolitical repercussions that could come. So that's also strategic. So I see little downside in 2025.

Q - Aleksander Peterc

Excellent. Thank you very much. And then just kind of a technical follow-up on the EUR700 million catch up in deep UV that are moving out of fast shipments. Did all of that occur in

the second quarter that you reported or has it been reported in the current quarter? And if then, what proportions, please? And while we are talking of fast shipments, our discussions have a similar change to the table for EUV or is that off the table now? Thank you.

A - Roger Dassen {BIO 15064806 <GO>}

So the EUR700 million is the expectation that we have for the end of the year, right? So of course there will be a little bit of flux during the year, but EUR700 million is the expectation that we have for that in the year. Of course, we have some of that also in this quarter, but the EUR700 million really is the expectation that we see for the full year.

As it comes to EUV, it's based on the conversations that we've had with the customers. They are very happy to take the risk of the tool for the immersion tools upon shipment and based upon a shorter testing program for EUV. We're not there yet. So the question will be also based on how next year is going to pan out. I think that we're going to get the question of how much fast shipments are we going to see for EUV next year in comparison to normal shipments. I think that's the primary question that we have on EUV. So if you think about the -- to what extent could we have some tailwind from that in that regard, I think it will be heavily dependent on what we're going to do in terms of regular versus fast shipment.

And there are two considerations there for next year. One consideration is that, as a standard procedure, when we introduce new technology, we want to test them more, right? So the 3800 clearly is a significant development in our EUV shop and that means that at least for a number of tools, we want to do more testing and more elaborate testing. And therefore, at least for a number of the initial tools, we wouldn't fast ship them. So we will do regular shipments and do the tool testing program.

And secondly, as I mentioned, it will be dependent on the utilization of our capacity, right, because fast shipment is a way to get the tool earlier to the customer, but it's also a way to optimize our capacity. So it will be driven by those two considerations, what we're going to see there next year in terms of type of shipments and that will tell you whether or not we're going to get any tailwind for EUV revenue as a result of that.

Q - Aleksander Peterc

Excellent. Thank you very much.

Operator

Thank you. We'll now go to our next question. And your next question comes from the line of Alexander Duval from Goldman Sachs. Please go ahead.

Q - Alexander Duval {BIO 16682293 <GO>}

Thanks for the question. You spoke about a push-out in demand timing for EUV. I wondered, to what extent we should think about this as a one-off push-out from '23 to '24 given the customers presumably would still need these tools for their fabs that are still getting built and their customers in turn have product aspirations for '25 that you've just

mentioned? Or to what extent would you expect some 2024 units to be subsequently pushed into 2025? And then I've got a quick follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Good question. We have to realize it. If you look at the reasons, predominantly the push-out had to do with fab readiness and that was basically driven by construction skills. And you think, well, how can that be, you just hire a couple of construction workers and you just build the fab. Well, just building a $20 billion fab that's going to do a 5 or a 3 or a 2-nanometer product is a skill and people don't seem to realize that when we start building those fabs across the globe now and are everywhere, that skill has been refined over the last couple of decades in only a few places on the planet. And predominantly in Taiwan and in Korea and a bit in China.

Now having to do that now and accelerate this will lead to all kinds of issues because we are still building those fabs in Korea and in Taiwan, but also in other places on the planet, also in the US, for instance. And so getting access to the requisite skills and skilled workers to keep the construction plan on time is a challenge, as at least what customers tell us, yeah, and this is the main reason. So you can easily look at a delay of a couple of months or a quarter. Now -- and of course, like I mentioned earlier, we need those 2-nanometer fabs or 3-nanometer fabs in 2025, but it also means we need to resolve in, let's say, 18 months period, yeah. So those skills gaps and then now -- but I think it can easily be a problem also at the end of next year, but let's see how quickly they can skill up the construction industry to help build those fabs. So that's the predominant reason for the timing changes or the demand timing changes. And of course, there's also been in this particular year where there's a few supply chain issues at just one or two systems, but it was -- predominantly it was just fab readiness and for the reasons that I just mentioned. Then -- and I hope they get re-skilled quickly and that at the end of 2024 we don't have those issues.

Q - Alexander Duval {BIO 16682293 <GO>}

Many thanks. Just a quick follow-up. We've seen some news flow on demand for leading edge chips driven by AI applications. Could you just share your latest views on any growth opportunity from AI in 2024 given that obviously 2023 shipment schedules are full? I think you alluded in your video prepared remarks to that potentially being an incrementally supportive driver of demand. So just curious for any thoughts there.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think that's true. But I think we're at the beginning of this you can say AI high power compute wave. So, yes, you'll probably see some of that in 2024, but you have to remember that we have some capacity there, which is called the current under-utilization. So, yes, we will see some of that, but that will be taken up that -- particular the demand by the installed base. And that will further accelerate, I'm pretty sure, but that will mean that will be, you could say, the ship to customers by 2025. So I don't see that or don't particularly expect that there will be a big driver for additional shipments in 2024, given the utilization situation that we see today.

Q - Alexander Duval {BIO 16682293 <GO>}

Very clear. Thank you.

Operator

Thank you. We'll now go to the next question. And your next question comes from the line of Joe Quatrochi from Wells Fargo. Please go ahead.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Yeah, thanks for taking the questions. One on domestic China. I mean, you talked about a fill rate that was less than 50%. Do you expect to be caught up to that exiting this year or will you still be trying to kind of fulfill that demand looking into '24?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we're still -- like we said also in the prepared remarks that the demand is still more than we can ship. So that also means that we still have a fill rate that's not 100%, let's say, lower. Of course, it's significantly higher than the significantly lower than 50% that we saw in '21 and '22 where we had screaming customers. We simply couldn't ship. And China was one of the real victims. Now of course today with the fabs being ready there, the pedestals being there, anything that doesn't ship to any other country goes to China, but there is still some demand that will move into 2024 because we don't have a 100% fill rate today.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Got it. Thanks for that. And then just as a follow-up, in the recovery of the Installed Base Management business that you talked about implied for 4Q23, is that predicated on just logic alone or is there also some expectation that you see some memory recovery embedded in that?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we don't -- somewhere down the line there will be a recovery, yeah, because and that's going to be probably when we go through these inflection points in the second half of this year. And then it is all about the slope of the recovery. And this is where we have some uncertainty that we express loud and clear I think. And that's the uncertainty that we get from customers because they don't know either. So I think it's a bit too early.

A - Roger Dassen {BIO 15064806 <GO>}

I think it's fair to assume that the utilization rates on memory are lower than the utilization rate on logic. There it's reasonable to assume that logic would be ahead of the curve in terms of upgrades.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. Also because like I said earlier, you could argue when we look at the stats, you could already see an inflection point, but it's -- like I said it's very early on, so we'll just have to see how that continues over the next couple of weeks and months on logic.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Perfect. Thanks for the color.

Operator

Thank you. We will now go to your next question. And your next question comes from the line of C.J. Muse from Evercore ISI. Please go ahead.

Q - C.J. Muse

Yes, good afternoon. Thanks for taking the question. I guess, first question for Roger. I think you're fairly clear on the call that no changes to kind of the capacity add, so curious how we should think about OpEx growth into 2024.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah. I think the OpEx that we're currently guiding for the year, I think that's a pretty good estimate I think for what we see for the rest of the year. I think in terms of next year, I think it would also be a little bit dependent on how we further see things develop. And that to a certain extent will at least drive also the SG&A side of life. On R&D, as you know, we continue to have really good ideas. And on R&D, we typically try to play this on the longer term. So I think it is realistic to assume that on R&D, you will see some increase, albeit at a slightly lower pace than the very sharp increase that you've seen in the past couple of years.

Q - C.J. Muse

Very helpful. And then, Peter, I guess as a follow-up, I know that you're actively working with the Dutch government, but curious as to your kind of thoughts around any potential timeline from hearing from maybe more restrictive kind of thoughts out of the US government?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah. Of course, we have regular discussions with now Dutch government which is inactive because of the political situation here. So we are going to prepare for new elections. But I think we just have to wait for what comes out of the US now. But the reason why we said, based on what our understanding is and I jokingly said here internally, it wasn't even jokingly, I actually meant it. I've been in this business for quite a long time. And my hunch about what the Dutch were finally going to say in the end was about right. So this is why we affirmed during March and I also have a kind of a hunch on what's going to happen for the rest of the year and with the new rules. And my just gut feel is based on what we hear and our understanding. It is not going to have a material impact. But having said that, we don't know exactly what the content of those new regulations is going to be, but we'll just have to wait. I think Japan came out, the Dutch came out, I think the US government will probably come out soon and then we'll know for sure whether my hunch and my gut feel was correct.

Q - C.J. Muse

Thank you.

A - Skip Miller {BIO 20244900 <GO>}

All right. We have time for one last question. If you are unable to get through on this call and still have questions, please feel free to contact the ASML Investor Relations department with your question. Now, operator, may we have the last caller, please?

Operator

Thank you. We will now take your last question for today. And the question comes from Tammy Qiu from Berenberg. Please go ahead.

Q - Tammy Qiu {BIO 17604871 <GO>}

Hi, thank you for squeezing me in. So, firstly, Peter, relating to your China exposure, do you have any format of customer concentration, i.e., does one or few customer accounting for more than, let's say, 50% of the demand from China at all?

A - Peter Wennink {BIO 1852674 <GO>}

No, I think it's the -- the number of customers in China is significantly higher than -- and I just talk about the spread of the customers is significantly higher than anywhere on the planet. And it has to do with the fact that it all goes back to where Chinese industry, don't talk about the semiconductor industry, but industry in general is actually growing. It grows in those areas where -- but which are covered by the big megatrends. And that means that specific requirements for semiconductors to support those trends actually ask for very significant and different applications that put the demand on this wide range of mid-critical to mature semiconductors and that's a lot. And that also means that you see customers -- semiconductor customers now focusing on certain of those areas. Many, many customers, yeah. And that's -- so it's pretty widespread whether it's memory, whether it's logic or foundry. It's almost everything. But many of them. And very much focused on specific parts of the industry. So, yeah, it's on the contrary. I mean, it's not specifically focused on one or two customers, it's a broad base.

Q - Tammy Qiu {BIO 17604871 <GO>}

Okay, thank you. And also you mentioned that you can actually ship the mid-critical machines to China and still basically allow them to do whatever they want to. So let's say the mainstream you're shipping to China from an immersion perspective is 1980, if you can only ship something like 1970 or older machine, do you think that can allow them still do what they want to do?

A - Peter Wennink {BIO 1852674 <GO>}

You have to realize that when you ship an immersion tool and just do the math, which is the wavelength of the light over the numerical aperture of the lens, that's 193 over 1.33 times a k factor, which is the process factor, which has an absolute minimum of 0.26 because beyond that you don't have any contrast. So if you do the math, do it on your calculator, you come to 38-nanometer. So whether it's 1970 or 1980 or 2000 or 2100, it's 38 nanometer. So how do you get smaller sizes? That is where you start using double

patterning and that's basically determined by your capabilities of materials, which is deposition and etch.

So it's of course -- the most advanced have one determining factor in that it's the position with which the tool works. And this is where -- if you look at the Dutch regulation, it doesn't mention a type name, it just mentions a technical specification, which focuses on the precision with which the tool works. That's where the cut-off point is. But in terms of feature size, it's the same, yeah, but it's really the precision with which you can position the feature sizes on the wafer, that's where the cut-off point is and that's determined in the regulation, yeah. So it's all deposition and etch, yeah.

Q - Tammy Qiu {BIO 17604871 <GO>}

Okay, thank you.

A - Skip Miller {BIO 20244900 <GO>}

All right. Now, on behalf of ASML, I'd like to thank you all for joining us today. Operator, if you could formally conclude the call, I'd appreciate it. Thank you.

Operator

Thank you. This concludes the ASML 2023 Second Quarter Financial Results Conference Call. Thank you for participating. You may now disconnect.