Y 2020 Earnings Call

Company Participants

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

Other Participants

- Adithya Metuku, Analyst
- Aleksander Peterc, Analyst
- Alex Duval, Analyst
- CJ Muse, Analyst
- David Mulholland, Analyst
- Joe Quatrochi, Analyst
- Krish Sankar, Analyst
- Mehdi Hosseini, Analyst
- Pierre Ferragu, Analyst
- Sandeep Deshpande, Analyst
- Unidentified Participant

Presentation

Operator

Thank you for standing by. Welcome to the ASML 2020 Fourth Quarter Full-Year Financial Results Conference Call on January 20th, 2021. Throughout today's introduction all participants will be in a listen-only mode. After ASML's introduction, there will be an opportunity to ask questions.

I would now like to open the question-and-answer queue. (Operator Instructions) I would now like to turn the conference call over to Mr. Skip Miller. Please go ahead, sir.

Skip Miller {BIO 20244900 <GO>}

Thank you, operator. Welcome everyone. This is Skip Miller, Vice President of Investor Relations at ASML. Joining me today on the call is ASML's CEO, Peter Wennink and our CFO, Roger Dassen. The subject of today's call is ASML's 2020 fourth quarter and full-year results. The length of this call will be 60 minutes and questions will be taken in the order they are received. This call is also being broadcast live over the Internet at asml.com. A 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'd 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 fourth quarter and full-year 2020 results conference call and I do hope all of you and your families are healthy and safe. But before we begin the Q&A session Roger and I would like to provide an overview and some commentary on the fourth quarter and full-year 2020, as well as provide our view on the coming quarters. And Roger will start with a review of our fourth quarter and full-year 2020 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, if you will?

Roger Dassen {BIO 15064806 <GO>}

Thank you, Peter. Welcome everyone. I will first review the fourth quarter and full-year financial accomplishments and then provide guidance on the first quarter of 2021. Net sales came in above guidance at EUR4.3 billion, primarily due to additional Deep UV system revenue and upgrade business opportunities.

We shipped nine EUV systems and recognized EUR1.1 billion revenue from eight systems this quarter. One system was shipped with a new configuration that needs to be quantified as customer site as the revenue will be recognized after site acceptance test in early 2021.

Net system sales of EUR3.2 billion was again more weighted towards Logic at 72% with the remaining 28% from Memory. That the strength in Logic drives both Deep UV and EUV revenue and recovery in Memory business is mainly driven by DRAM. Installed Base Management sales for the quarter came in at EUR1.1 billion above guidance, showing continued strength in our service and upgrade business. Gross margin for the quarter was 52% and was above guidance due to the additional Deep UV immersion and upgrade business. On operating expenses, R&D expenses came in at EUR556 million and SG&A expenses at EUR152 million, which was slightly above our guidance. Net income in Q4 was EUR1.4 billion, representing 31.7% of net sales and resulting in an EPS of EUR3.23.

Turning to the balance sheet. We ended the fourth quarter with cash, cash equivalents and short-term investments at a level of EUR7.4 billion, which is significantly higher due to

customer down payments and early payments which materialized in 2020. Moving to the order book, Q4 net system bookings came in at EUR4.2 billion including EUR1.1 billion for EUV systems net 6 and very strong Deep UV demand. Order intake was largely driven by Logic with 78% of bookings and Memory the remaining 22%. For the full-year, net sales grew 18% to EUR14 billion.

EUV system sales in 2020 was EUR4.5 billion, which is about a 60% increase from last year. On EUV margins, we continue to drive profitability in both the systems as well as the service business. We achieved our 40% system gross margin in 2020 and delivered a positive margin on (technical difficulty). We expect the upward trend for both systems and services gross margin to continue in future years. Installed Base Management sales was EUR3.7 billion, which is a 30% increase compared to previous year.

In 2020, we handled (technical difficulty) EUR11.3 billion, reflecting customers strong demand for EUV and Deep UV technology. Deep UV booking value was at a record EUR7.3 billion, with demand from both advanced as well as mature market technologies. Our R&D spending increased to EUR2.2 billion in 2020. While we continue to invest in Deep UV and applications, product innovation, the increase was primarily driven by the acceleration of our EUV roadmap both low and High-NA.

Overall R&D investments as a percentage of 2020 sales was about 16%, SG&A was about 4% of sales. Net income for the full-year was EUR3.6 billion resulting in 25.4% of net sales and an EPS of EUR8.49. Improvements in working capital contributed to a free cash flow generation of EUR3.6 billion as we continue to invest CapEx and (technical difficulty) and planned capacity ramp. Excess cash will be returned as per our policy.

With that, I would like to turn to our expectations for the first quarter of 2021. We expect Q1 total net sales of between EUR3.9 billion and EUR4.1 billion, which is very strong start of the year and a reflection of the current market demand. We expect our Q1 Installed Base Management sales to be around EUR950 million. Gross margin for Q1 is expected to be between 50% and 51%. The expected R&D expenses for Q1 are EUR620 million and SG&A is expected to come in at EUR165 million, reflecting a continued investment in the future growth of the company.

The higher R&D is to support roadmap plans to drive further innovation of our EUV, Deep UV and apps products. The SG&A increase is driven by higher IT, security costs and general organizational growth. These quarterly run rates are a good indicator for the expected full-year operating expenses. Our estimated 2021 annualized effective tax rate is expected to be between 14% and 15%. Regarding our capital return, ASML paid total dividends of EUR1.1 billion in 2020 made up of the 2019 final dividend and 2020 interim dividend.

ASML intends to declare a total dividend with respect to 2020 of EUR2.75 per ordinary share, recognizing the interim dividend of EUR1.20 per ordinary share paid in November '20. This leads to a final dividend proposal to the General Meeting of EUR1.55 per ordinary share. This is a 15% increase compared to the 2019 dividend. The 2021 Annual General Meeting of shareholders will take place on April 29, 2021 in Veldhoven.

Through December 31st 2020, ASML acquired 3.9 million shares under the 2020 through 2022 program for a total amount of EUR1.2 billion. Given our strong cash position and positive outlook, we expect to execute a significant (technical difficulty) Q1 2021.

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

Peter Wennink {BIO 1852674 <GO>}

Thank you, Roger. As Roger has highlighted, we had a very strong quarter resulting in another solid year of growth in both sales and profitability driven by strong Logic, recovering Memory demand and a significant step up in our installed base revenue. We were able to achieve an 80% top line growth and 37% [ph] growth in profitability despite some unique challenges we're having to continue to run our business through the pandemic. I think this is all thanks to our employees and partners who have done a remarkable job executing in this challenging environment. However, we continue to remain vigilant that this COVID-19 induced crisis is not behind us yet. Following a strong 2020, we currently expect another year of good growth in revenue and profitability in 2021.

In Logic, we expect another very healthy year driven by a further broadening of the application space, fueled by the global digital transition. Customers continue to see strong demand for advanced nodes, which includes secular growth drivers such as 5G, AI and HPC. And in addition and also driven by the digital transformation, we're seeing a strengthening demand for the more mature nodes across a wide variety of markets such as consumer, automotive and industrial. While we are still very early on in the year, we think that with these demand drivers on full throttle for advanced, as well as mature nodes we expect Logic revenue to be up at least 10% from an already very high number of EUR7.4 billion in 2020.

In Memory, customers have indicated that inventory levels continue to come down and expect a further tightening of supply throughout the year. This is the case with Logic, the digital transformation is also fueling Memory demand across a broadening application space. Customers continue to see healthy demand in data centers with increasing memory content in consumer electronics. With customers indicating stronger bid growth this year for DRAM around 20% and with 3D NAND around 30% to 35% and taking into account lithography to utilization already at high levels. We expect a recovery in lithography demand for Memory to continue this -- through this year. Therefore, we expect Memory revenue to be up around 20% this year from EUR2.9 billion in 2020. Although DRAM primarily uses Deep UV technology today, we do expect our EUV shipments to DRAM customers to increase in the coming years.

On our Installed Base revenue, sorry in Installed Base business, service revenue will continue to scale with the growing installed base. We expect an increase in contribution from EUV service revenue as these systems run more and more wafers in volume production. Customers will continue to utilize upgrades to increase capacity and improve imaging and overlay performance required on future nodes. With this continued growth in both service and upgrade business this year, we expect Installed Base revenue to be up around 10% this year from EUR3.7 billion in 2020.

All in all, we started the year with robust demand across the entire industry and across all geographical regions. This should bode well for a double-digit upside from our 2020 revenue numbers. We feel comfortable with the levels of potential growth expectation for a business segment, but clearly see potential upside to these numbers where we can disregard any further impact on export control regulations resulting from the current geopolitical situation.

I would now like to update you on our products and business, starting with EUV. EUV is making strong progress and continues to mature as we execute our roadmap and grow our Logic and DRAM business. As Roger mentioned, we shipped nine systems and recognized revenue of eight systems in Q4, bringing the total to 31 systems in 2020 with a revenue of EUR4.5 billion for the year. This translates to about 60% growth in UV systems revenue reflecting the expanding use of this technology in high volume manufacturing.

Based on customers growing EUV demand in advanced nodes, we currently expect a growth of around 30% over last year, translating to around EUR5.8 billion of EUV system revenue for 2021. We continue to improve the EUV manufacturing cycle time to enable the capacity in our factory to meet the growing EUV demand. We will continue to drive the EUV 0.33NA product roadmap which is aligned to our customers node cadence.

Our goal is to deliver value to our customers by our performance improvements in imaging, overlay and productivity. Customers continue to shrink on future nodes, the performance improvements of our 0.33NA systems roadmap will also enable cost effective double patterning solutions before customers reach a point where we require High-NA to reduce process complexity. We are aligning with customers on the roadmap timing of High-NA (technical difficulty) currently estimated to be in the 2025, 2026 timeframe.

To meet this timeline, we will start integration of the modules this year and plan to have first qualified system in 2022. We plan the initial installation of the first systems at customer site in 2023 and plan to provide a more detailed update on our High-NA program at our Investor Day this year. In our Deep UV business, we're focused on meeting our customers increasing demand for all of our Deep UV products by maximizing factory capacity, reducing installation cycle time and optimizing performance of our systems in the field.

As we mentioned earlier, the application space for Logic is expanding rapidly, which also has in effect on the demand for Deep UV products across our entire product offering. The demand has actually been stronger than we anticipated some years ago which means that we have increased our investments in R&D to provide our customers with ever more powerful and productive Litho machines to help them deal with the increasing demand and lower cost per chip challenges.

Our Deep UV R&D plan therefore includes significant program to bring Deep UV to our -- from our XT platform onto the NXT platform, thereby seriously boosting productivity in Lithographic performance such as CD and overlay. In our application business, we had a record year for YieldStar shipments and shipped the first YieldStar 385 to a customer in

Q4. The YieldStar 385 offers the latest overlay and focus metrology with enhanced throughput and accuracy to meet customers future node requirements. We also shipped an additional two eScan 1000 Multibeam systems in Q4, bringing the total number of shipments in 2022 to three and with nine beams and high-speed stage technology these systems provide up to 600% higher productivity than single beam systems. In summary, 2020 was another great year despite the challenges presented by the pandemic. For 2021 taking into account that we're coming off a higher 2020 revenue base, we still expect a year of double-digit growth. This is driven by strong demand in Logic and continued recovery in Memory the potential upside to these numbers where we can disregard any further impact on export control regulations.

The build-out of the digital infrastructure across multiple markets drives demand for both advanced, as well as mature process nodes. This is expected to fuel demand across our entire product portfolio. Although, there are of course still some near term macro and geopolitical uncertainties, the long-term demand drivers only increase our confidence in our future growth outlook towards 2025.

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. Before I hand, I would like to ask timely limit yourself to one question with one short follow-up if necessary. This will allow us to get 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, sir. (Operator Instructions) The first question is from Mr. Joe Quatrochi. Please state your company name followed by your question.

Q - Joe Quatrochi {BIO 18961101 <GO>}

Yeah, thanks, it's Wells Fargo. I was hoping to get some color on your Memory business and the demand you're seeing there. I think last quarter you had talked about 30% growth for this year for Memory revenue, but you came in a little bit below that. So I guess did something change there and then how do we think about that follow through that into 2021?

A - Roger Dassen {BIO 15064806 <GO>}

Thanks, Joe. No, I don't think anything really materially changed there. In fact the that the we kind of missed a 30% was in essence the reallocation of a few tools from Memory into Logic that really had to deal with where did the tools go by the end of the quarter, so

really as a spread over Q4 versus Q1, so not a systemic reason. The momentum that we saw building up in Memory. In the course of last year, we think it's continuing and that has to do with the things that Peter talked about. We see the bit growth, the bit growth developments the 20% for DRAM, 35% for NAND and of course that's driven by demand in data centers. It's driven by what we see in terms of Memory being designed and used in consumer electronics. So we see those underpinnings continue. We also see that the utilization of the lithography tools is at very, very high level. So the demand momentum that we saw already in the second half of 2020 we believe sustained into 2021 and that's the reason why we again forecast a 20% increase there for 2021.

Q - Joe Quatrochi {BIO 18961101 <GO>}

That's helpful. And then as a quick follow-up, in the prepared remarks you talked about some supply chain limitations potentially on the EUV side that you're seeing, does that change your expectations for producing 45 to 50 units or your capacity to do that number of units this year?

A - Peter Wennink {BIO 1852674 <GO>}

I think our capacity, our capability internal in the Netherlands, in Veldhoven to build 50 systems is there in terms of people and square meters. But we have to build those systems out of modules which we don't produce. It's in the supply chain and it's just a reflection of what happened last year in Q2 and Q3 where as clearly our key foundry customer came back and said, listen our key customer for N3 is now blacklisted, so we cannot ship, so we need to adjust our 2021 outlook for EUV systems which was followed by another customer said, well we're going to delay the roadmap, which also means that this will be pushed back above the year which actually led to a situation where we actually reduced the number of planned system 2021 for EUV because customer said these are the two reasons and were two big customers.

So what we did, we went to the supply chain and said, sorry, we need those lenses and lasers, very expensive pieces of equipment we need them actually later. You need to realize that the integral lead time between the installation of EUV tool and a start-up of a module production there is 20 months. So when you push back six, seven, eight months, yeah, then finally customers come to the realization that is not as bad as they thought and they want those machines and we have an issue with getting the modules on time and that's the only issue. The only issue it's just a result it's a function of the fact that our customers change their mind in Q2 and Q3 and then we changed their mind back in Q4. And today there is nothing we can do about it, which actually means that we're all prepared to do 50 units next year, that is in 2022, it will just shift to 2022, yeah. So it's there -- so it's -- you could say it's supply chain limitations by design because you know it's because the customers told us, we don't need them and then coming back there, oops, we might have been wrong.

Q - Joe Quatrochi {BIO 18961101 <GO>}

That's helpful. Thank you.

Operator

Next question is from Mr. Alex Duval, please state your company name followed by your question.

Q - Alex Duval {BIO 16682293 <GO>}

Yes, hi, it's Alex from Goldman Sachs and congratulations on the very strong results. Quick question on the CapEx spending backdrop and how that feeds into your guidance. Obviously TSMC is a very large CapEx spend, they guided over 30% CapEx growth this year, yet your guidance although very strong is closer to 12% on revenues. Clearly you also have other vertical, you also have other customers in the mix, but I wondered if you could give a little bit more color as to any areas where at the moment you're being more prudent on your guidance, but where you could be a bit more positive over time and what you need to see to get more constructive?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, TSMC gave a range EUR25 billion to EUR28 billion, great. We plan our business based on what they ask us. And as you know TSMC has been asking us in 2020 on several occasions to ship very different numbers for 2021. So this is -- what I'm saying is it's in constant flux, yeah? So what they are asking us and telling us that they would like from their point of view has a range and we need to be able to respond to that.

So I don't think you can draw any direct conclusion from the TSMC CapEx numbers directionally yes, but not in absolute terms. Now having said that, I also said that I do believe that we see upside to your calculated 12%. And as I've said it's clearly there, but I think that's upside that comes out of the Logic space in China and of course that will happen if the current export control regulations stay as is.

Now you could argue, so why do you -- why are you so conservative? Well, simply because what we've seen over the last two months in terms of regulations that we had to deal with and that basically were issued rather suddenly, there is a level of conservatism at on our side, I said we're not going to add that upside yet to your 12% because we've been -- I would go, but I mean, we've been surprised on a regular basis by all these new regulations that do have an impact on our business. So where nothing changes and stays as is, there is a significant upside to what we told you today, but then everything needs to stay as is and I think we made it clear in our prepared remarks.

Q - Alex Duval {BIO 16682293 <GO>}

Right. Many thanks.

Operator

Next question is from Mr. Mehdi Hosseini. Please state your company name, followed by your question.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Thank you. It's Mehdi Hosseini from Susquehanna International. Two questions. Peter, when you look in longer term and looking at 3-nanometer transition, I understand the opportunities in the near-term, but I want to hear more about what you're thinking as we migrate to the second generation of N3. And I want to better understand how change of transition architecture like Samsung migrating to gate all around. And also introduction of High-NA is going to impact your overall system shipment. And I'm (technical difficulty) context of what happened in during 2014 through 2016 when we might bit from a cleaner transistor to FinFET and there were some slowdown I want to see you see the same kind of pattern happening and I have a follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, you have a follow-up on four questions. So on the transition architecture yeah, I think, what we know today on the patenting side and as especially I would say on the geometric side, I don't think it has a major impact, that's not what we expect. So whether it's the FinFET or the gain [ph] around, it is in the 3-Nanometer realm and customers need that lithographic capability and it's an architectural choice as you pointed out, We don't think it has a major impact on our business.

The longer term 3-nanometer transition I think you were probably referring to the transition architecture change, we'll just have to see how that pans out. An architecture change even we had FinFET you also know there wasn't completely flawless because it is new yeah. And if there is a slowdown it's probably could be a slowdown because the technology is in new and that the ramp is potentially slower, that's a speculation at this moment in a moment in time. From a let's say lithographic point of view there's not much difference. How does that impact High-NA system shipments? Well, High-NA is not slated for the N3 node, it starts to be used an N2 and N2 plus which N2 plus and N1 and beyond. So -- and for 3-Nanomerter it doesn't have a major impact, I guess --

Q - Mehdi Hosseini {BIO 4362002 <GO>}

I have a very short follow-up, China as a mix of your overall revenue has been growing up 12% '19, 17% 2020, how do you see that trending '21 (technical difficulty) hence could be a source of upside, but what is your current projection?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think what we see, we see that trend keep going up, it has to do with the fact that there is a significant amount of investment planned in China Memory and Logic. In our -- what we gave you in terms of growth for 2021 10% Logic, 20% Memory, 10% Installed Base, our assumption there is that we -- that the indigenous Chinese business has about the same euro level, yeah, but it's a different type of customer, yeah, I mean as we told you also three months ago that we expect 2021 China business to grow but largely in Memory, so it's in 3D NAND and in DRAM. Those are the big drivers and that's in what I would call, what we gave you to calculate that's only calculated to a 12% growth number.

On top of that, there is a significant upside in Logic, how big can that be? It's significant. But like I said, we are a conservative company, we've experienced the unpredictability of the legislation over the last couple of months. We don't want to put that into your forecast

right now, but when things don't change if they stay as is, there is some significant Logic upside in China.

Q - Mehdi Hosseini {BIO 4362002 <GO>}

Thank you.

Operator

Next question is from Mr. CJ Muse. Please state your company name followed by your question.

Q - CJ Muse

Yeah, hi. Thank you. Good morning, good afternoon. CJ with Evercore ISI. I guess first question on gross margins, you gave a pretty solid outlook for the March quarter and as we move into the second half of the year, you're going to start shipping DUV tools, I would assume the installed base will start to come up working on EUV side as well helping. So how should we think about the trajectory of gross margins and is 52% plus or minus doable for the full-year now?

A - Roger Dassen {BIO 15064806 <GO>}

Thank you, CJ. So you might recall in the last call, in the Q3 call that we had, we talked about a bandwidth for the year between 48 and 50%. We also reminded people at that stage that in comparison to 2019, we also started the year with a 1% negative as far as that is concerned on High-NA. So that was one of the reasons why before doing your bridge between 2019 and 2020 you firstly to dug that 1% out there. I think bearing that in mind, but also bearing in mind how sales seems to be firming up in this year, my expectation would be that we're going to see gross margin trend towards the upper limit of the bandwidth. So the bandwidth of 48% to 50% that I gave in Q3, my current expectation based on the composition of sales would be that that's going to trend up towards the upper limit of that bandwidth.

Q - CJ Muse

Okay, that's helpful. And then I guess a quick follow-up on a prior question around EUV supply constraints. It looks like implied planned revenue units is 40, your backlog is 42, curious if you think your supply chain can operate any upside to that 40 and then if not, what does that tell you around EUV tool demand in 22 and do you need to start thinking about having sufficient capacity above 50 units?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, okay. Good question. I think of course we'll push the supply chain and but don't expect miracles there. I mean if you get at the end of the year again one or two tools extra like I find, but it is -- that is not going to give you five or 10 tools extras. It's simply not possible, yeah. I mean so what actually means is that the demand that we cannot fulfill this year we will fulfill next year and your point on the 50 capacity, I think it's sufficient, the 50

capacity has to do with the fact that although customers are buying units, they are buying basically wafer capacity.

And don't forget, we have a higher productivity tool coming out of the 3600D in the second half of this year, which has a 15% higher productivity. So with 2022 [ph] only being these, yeah, you already get 15% higher wafer capacity out there. So with the 50 that we feel comfortable with. Also from a supply chain point of view, we will be able to manage that for next year yeah and the 15% higher productivity on the tools compared to the see, you actually see that we have quite some -- we have ample opportunity to help our customers build wafer capacity, yeah. So I think it's enough.

Q - CJ Muse

Thank you.

Operator

Next question is from Mr. Adithya Metuku. Please state your company name, followed by your question.

Q - Adithya Metuku {BIO 17642884 <GO>}

Yes, good afternoon. It's Bank of America. So my first question is just on your IDM customer, there has been a lot of discussion around by the foundries are including something from them or whether they're not. I just wonder if you could give us some color on (technical difficulty) 2021 outlook from your IDM customers. And secondly, I had a follow-up, so if you can answer that, I'll come to the follow-up?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think you know we're not going to be specific on any customer if you can imagine because of the fact that we only have very few. So the issue is that when we look at 2021, two things are impacting our shipment schedule to our leading-edge customers is, one is what you refer to is effectively has there been a transition from tools that we already planned for customer A potentially to customer B and C, I think yes that has happened. But on top of that I think there is the increased demand for advanced nodes, yeah. So it's the combination of the two that actually caters for maximizing the shipments out of our shipment capability, yeah and it's the redistribution that has happened. So, yeah, I think we're in and that's sold out for this year, but perhaps with more to upside, we are referring to the previous question, but I think no impact on this foreseen in our 2021 numbers.

Q - Adithya Metuku {BIO 17642884 <GO>}

Understood. And just as a follow-up, just on the metrology side, I just wondered if you could give us some color on (technical difficulty) about revenues in metrology in fiscal year '21?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think you're probably referring to the Multibeam tools, yeah?

Q - Adithya Metuku {BIO 17642884 <GO>}

Yeah.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think those two, three have been shipped to our (technical difficulty), so that is going to be the key decision point, some customers are putting them into their Metrology architecture and basically needs to be qualified with, there is no tool in itself, but it's of course the software that actually drives the tools. So when that's done, we will recognize revenue that's how it works. So it's this year for those three tools.

Q - Adithya Metuku {BIO 17642884 <GO>}

Understood. I meant, if you could give us some color around the growth, but given these Multibeam shipped tools in our shipping if possible?

A - Peter Wennink {BIO 1852674 <GO>}

So is what we expect for 2021 is that we will have positive evaluations and those positive evaluation will be followed by orders. So orders for HVM shipments, when that will happen is still a bit unclear because it depends on when we get the sign-offs, yeah, but we could be able to -- we expect sign-off in the first half of 2021, so this year, then we could see orders for shipment towards the end of 2022, yeah. But I think so 2021 and but I think that we would see an acceleration of that in the year 2022. So I think 2021 will be characterized by the qualification and the decision of the customers to put multi-beam tools in their Metrology strategy which then will probably leads to first shipments towards the end of this year and then accelerating in 2022.

Q - Adithya Metuku {BIO 17642884 <GO>}

Understood. Thank you.

Operator

Next question is from Mr. Sandeep Deshpande. Please state your company name followed by your question.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Yeah, hi, JP Morgan. I'd like to just go back to the question on the Memory market, you had guided to 30% growth last year, you did around 20, this year you're guiding to 20% growth, there is also the added, there is going to be the shift to EUV based DRAM at some point end of this year or into 2002. So how should we be looking at the overall outlook for ASML here, I mean are we going to see an even more accurate because of what we saw last year in terms of what you reported or is this that is just goes along and it's just something shifted and that is why it has happened. And I have one quick follow-up on the EUV associated with Memory.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think Memory outlook, it actually is developing the way that we expected and the way that we told you. You may remember that since the middle of last year we told you that we see utilization is going up and there will be a point where if we are at the theoretical maximum utilization that you know our customers will want more capacity, that's actually happening. So now on the -- I don't think Roger explained that that on the 2020 the 30% the only reason why the 30% isn't 30% not 30%, but 20% is because some of those shipments that were earmarked Memory actually went to Logic, why, because Logic was on fire and Memory was getting into fire in 2021, so just the choice of customers don't ship into A but shipping to B because that drive more business.

So this was the only reason which actually means that we are seeing Memory or it's coming in, especially DRAM, I mean we need to distinguish with DRAM as we -- we don't see a strong as a recovery in 3D NAND, you could argue because you know we're not that sensitive to it, but we simply don't see it, we see it in DRAM stronger.

So this is really this is a DRAM game in 2021 whereby 20% bit growth which is the expectation of today, simply not, simply too much to be dealt within the current installed base, that's why we see the orders coming in. So yes, EUV will be used in DRAM especially in 1-alpha, but that is going to be limited as we also mentioned last time, this is not going to be a note or node let's say full transition from Deep UV to EUV, don't forget that EUV doesn't have a maturity level of Deep UV. So there will be a part of the wafer capacity will be allocated to EUV with a limited number of layers, which will grow over time. We'll see the first application of it end of the year and moving into 2022, yeah. So it's going to be a gradual adoption of EUV in DRAM.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Thanks, Peter. I mean just following-up on that DRAM and EUV, how do you-- I mean you've had a very strong year last year in Deep UV and even this year looks very good in that technology. I mean, do you expect this even as EUV ramps up in Memory et cetera in DRAM whenever it does however slowly does or however fast, does this level of this baseline effect of Deep UV remain as part of your revenues and that we just add on EUV over time as we've seen over the last couple of years?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think the number of EUV layers will be relatively limited as compared to Logic. So Deep UV will be the bulk of and will stay the bulk of the layers meaning better lithographic performance and productivity. So this is why we have these extensive R&D program still in Deep UV. I think Deep UV in general will be a bigger part of our business going forward than we anticipated a few years ago and it's not only Memory it's like we said in the prepared remarks, it's very much also the mature markets whereby 90-nanometer, 65-nanometer, 45-nanometer, 28-nanometer are all growing in terms of wafer capacity for the simple reason that there are applications or devices for applications in that technology realm that are basically supporting in IoT solutions. And that's a trend that we underestimated a couple of years ago, I think this has been a big driver for our Deep UV business, this was not only Memory where it will stay strong, it is very much also the broadening application space in Deep UV.

Q - Sandeep Deshpande {BIO 3869012 <GO>}

Thank you very much, Peter.

Operator

Next question is from Mr. Pierre Ferragu. Please state your company name followed by your question.

Q - Pierre Ferragu {BIO 15753665 <GO>}

New Street Research. Thanks for taking my question. Peter, a question for you may be you know like long side so are looking whether so looking back maybe two three years ago. So TSMC is going to spend between $25 billion and $28 billion in CapEx this year and they expect to grow revenues in the back of that in mid-teens which means to me that that's a new normal for CapEx like it's what is going to be the number that keeps growing from here. And I can't imagine in a world and with that many leading edge Logic get in to data centers, in to PC's, in to phones without volumes of DRAM following. And so (inaudible) very, very in the long run for the industry.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah.

Q - Pierre Ferragu {BIO 15753665 <GO>}

And my question is first slide, in 2025 so like two three years ago you gave us a 2025 outlook is a fairly wide margin, did that kind of world in which TSMC spent so much in 2021 was that part of your range, although that exceed what you were looking. And then secondly, so and then yes of course, so my question behind that is your 2025 like kind of guy, do you think that (technical difficulty) trends will go with the higher end of that range?

A - Peter Wennink {BIO 1852674 <GO>}

Well, you're basically asking me to give you a bit review of our Capital Markets Day. Well, let's take it from a 30,000 feet level three years ago, yeah, what you're basically asking us, Pierre, how do you think about the industry today as compared to three years ago?

Q - Pierre Ferragu {BIO 15753665 <GO>}

Yeah.

A - Peter Wennink {BIO 1852674 <GO>}

I'm more positive for all kinds of reasons because like I said in an answer to a previous question, I did not expect Deep UV to be as strong as it is today and everything that we know talking to our customers, we'll stay strong, yeah, I think that's a good call or surprise, but that's something that we didn't understand well, yeah, we understand that better today.

There was another thing that we assumed as you know, when we talk about as a base case or a mid-market scenario starting from the 60-nanometer node, we say basically every node as 10% lower wafer capacity. So it's minus 10, minus 10, minus 10 by the time that you are at 5, you've had almost 4 times of minus 10 reduction of that wafer capacity needed for that node. That seems very conservative at this moment in time if we listen to our customers because as a customer like TSMC doesn't tell us that they go and spend $25 billion to $28 billion, if they believe that the way to see that they need for those nodes, there is going to be minus 10, minus 10, minus 10. So they obviously have a now different view as to the size of that market and I think we all understand drivers, yeah, that's all, I think that we have the most of it, yeah. So I think all in all, I think there is a different basis for our assessment I think of where we can be in 2025, 2026 or 2027 for that matter, yes. And I think it hasn't worsened, I think it has gotten better yeah.

A - Roger Dassen {BIO 15064806 <GO>}

Definitely on the logic side right?

A - Peter Wennink {BIO 1852674 <GO>}

Definitely on the logic, but also to Pierre's comment, Memory is a derivative of Logic, Logic we need all these applications, Memory will follow. So yes, do we have a more positive basic view as to the growth perspective of the industry, yes, I think we have, yeah.

Q - Pierre Ferragu {BIO 15753665 <GO>}

Thanks for the comments and I look forward to the next CMD of course.

A - Peter Wennink {BIO 1852674 <GO>}

So we do we life.

Q - Pierre Ferragu {BIO 15753665 <GO>}

Thanks. Bye, guys.

A - Peter Wennink {BIO 1852674 <GO>}

Bye.

Operator

Our next question is from Mr. Krish Sankar. Please state your company name, followed by your question.

Q - Krish Sankar {BIO 16151788 <GO>}

Yeah, hi, it's Krish from Cowen. Thanks for taking my question and congrats on the strong results. First question I had Peter, I think you did answer this question in many ways, so sorry for beating it up again. The upside to calendar '21 numbers, is there a way you can simplify and say do you think it comes from either Logic or Memory, do you think it comes from DUV or EUV and then I had a follow-up.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think it comes from DUV and Logic.

Q - Krish Sankar {BIO 16151788 <GO>}

Got it, got it.

A - Roger Dassen {BIO 15064806 <GO>}

That is very short answer for Peter, that is what it is.

Q - Krish Sankar {BIO 16151788 <GO>}

Short and sweet. Thanks, Peter. And then a follow-up for Roger, on the EUV service margins, two quarters ago in September you turned positive, is it fair to assume from here onwards those margins should start and keep improving because all the 2019 tools kind of keeps adding to the service gross margin?

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, I think that's a fair assumption. So we indeed we did turn positive during Q3, we were positive for the entire year. And as I mentioned also in the video, I believe that within about a four-year timeframe we should see the EUV service margin sort of approach the corporate gross margin and that's the trajectory that we're on. And it's a matter of on the one hand to your point seeing tools getting out of warranty, seeing tools produce more and more wafers sort of throughput going up and as a result of that the number of wafers and therefore the people wafer going up for us, on the other hand us being better able to control the cost, so that's the trajectory that we're on, that's the goal and full-year assignment and will continue to develop towards that goal.

Q - Krish Sankar {BIO 16151788 <GO>}

Thanks, Roger. Thanks, Peter.

Operator

Next question is from Mr. Aleksander Peterc. Please state your company name, followed by your question.

Q - Aleksander Peterc

Yes, hi, good afternoon. Thanks for taking the question. This is Aleks from Societe Generale. I just have two, one is on, if you could comment a little bit on EUV average selling prices to quite firm over the past couple of quarters, so should we expect this firm that's going forward as well in the first half? And I suppose you have in and up speaking to second half with a new model shipping, if you could maybe comment on that a little bit. And then just secondly, the R&D sales is a bit higher than your longer-term target. So what point in time where you think we should (multiple speakers) yeah, R&D intensity is that going to decline maybe once High-NA shipping or even before just to sell, sort of what time frame that could decline a little bit? Thanks.

A - Roger Dassen {BIO 15064806 <GO>}

Yeah, that's fine. So you are right, I mean the ASP this quarter but also in Q3 was a little higher than what you typically have in your models, but it is as we also explained on Q3 to a very -- it is really driven by configuration. So what options are on the tool already when they leave the factory on specific customer requirements, so that's what drives it and the composition that we have for the EUV sales both in Q3 and Q4 were kind of the richer configurations as a result of which you saw the year -- you saw the higher number in there.

On a go-forward basis for the 3600D, I think we mentioned there that you should look at mid-teens in terms of increase over the ASP for in comparison two to three months. In terms of your question on R&D, you're right, I think R&D as a percentage of sales is comparable to where we were last year, actually it's high 15 approaching 16. It's a little lower actually than what we had in 2019.

As Peter and I already mentioned in earlier comments, there is so much opportunity that we see in the roadmap and this is both low-NA, High-NA but also and Peter made reference to that a number of developments that we're having in terms of Deep UV and the throughput imaging and overlay potential that we still see there, there is a lot of potential that we see. And that's why we keep the -- keep it little bit higher than the 13% then some of you might have in your mind, that is still clearly the goal for 2025, so we're working our way towards that, but at this stage, we believe the company's value is increased by spending this amount. So I think the approaching 16% that we saw for this year and maybe also for next year would still be appropriate, but then from that point onwards gradually more led towards the 13% for 2025, I think that's the way I would look.

A - Peter Wennink {BIO 1852674 <GO>}

Yeah and you would also need to remember that we do these R&D investments I think for Deep UV where we underestimated the size of that market and also the need for Deep UV tools bringing them on to the NXT platform, which is quite a significant R&D program, but once we do that and we see a significant increase in Deep UV demand which we think will last, yeah. Then we -- our customers the capability to actually have a very productive tool with a lower cost per wafer competitiveness, yeah, which of course drives a higher sales price. So these are investments to and actually going back to an earlier question on the 2025 model, where we do things today because we see upside to that model and especially in Deep UV for instance and to give you one example, yeah.

Q - Aleksander Peterc

Very clear. Thank you very much.

Operator

Next question is from Mr. David Mulholland. Please state your company name followed by your question.

Q - David Mulholland {BIO 16819172 <GO>}

Hi. It's David from UBS. I just wanted to come back on the change that happened in terms of your plans and your build through the supply chain for this year or for 2021 because my understanding previously was you're willing to essentially bear the cost on your own balance sheet if demand didn't end up reaching the 45 to 50. So I'd love to understand what changed because it seems like that's potentially not constraining the outlook for this year. And then secondly on cash flow, very strong quarter obviously in cash generation in Q4, was there any -- was that all just pure cash coming in the door from customers or was there any sale of receivables like we saw a few years ago?

A - Peter Wennink {BIO 1852674 <GO>}

Well, to answer to your first question, David, as you might go back to the conference call script but we never said that we were going to permit ourselves in the supply chain to 45 to 50 units. We actually we said we were not going to do that, we said we are taking obviously a bit of a buffer above what our customers at that time the end of Q3 said that they would need for 2021 which is a lower number than we're currently planning to ship, yeah. So we did take that buffer into consideration, I guess can we squeeze out that all the one or two probably, yeah, but we never indicated or we never met or indicate that we would cover our customers for our full capacity, that's not what we said and that's not what we did, yeah.

So what we actually -- we're probably ending up somewhere in between, yeah, which is good because if we wouldn't have done that, then there would not be a 30% increase in our Deep UV obviously in our EUV a planned revenue for this year, yeah. We are able to do that because we built this buffer capacity in the supply chain, but not everything.

A - Roger Dassen {BIO 15064806 <GO>}

David, on the free cash flow, as we mentioned on the previous call, this is the year where you see two effects in that regard. So on the one hand you see the effect of extended payments that some customers were entitled to based on all the contract and you see the effects under the newer contract of down payments that are coming in.

And they balance out nicely, although in Q4, we saw most of the effect of the down payments and in the earlier quarters you saw the effect of these extended payment, but for the year it's nicely equaled out. So that's in fact what you see. So very, very strong free cash flow in Q4 making up for some of the things in the previous quarters. To your question, is there an anomaly and not really an anomaly, just as we had it in previous year there was some customers choose a factoring solution for some of the payments and some of the down payments, but --

A - Peter Wennink {BIO 1852674 <GO>}

On their request, yeah. But that's -- they are discretion and their request doesn't impact us whatsoever, but that hasn't really changed I would say as a policy from last year. And I think the anomaly if you like that I just talked about, I think it's is really something that we had in 2020, for 2021 I would expect a more regular buildup of the free cash flow also over the quarters.

Q - David Mulholland {BIO 16819172 <GO>}

That's great, thanks very much.

Operator

Next question is from (technical difficulty). State your company name, followed by your question.

Q - Unidentified Participant

Hi, good afternoon. It's Janarthanan [ph] from Liberum. I just wanted to go to your gross margin guidance where you said that you are likely to be hitting the high end of your 48% to 50% range. But since you're doing a midpoint of 50.5% in Q1 and you will have the 3600D shipping in the second half of the year which is corporate average gross margin, which presumably is close to 50%. I'm just wondering what is holding you back from getting to a north of 15% [ph] margin for the full-year, is there something specifically in Q2 which could lower that and also I would put it in the mix presumably your DUV shipments are going to be quite strong this year which should also have a positive effect on that.

A - Roger Dassen {BIO 15064806 <GO>}

Well, first of we shouldn't forget that there is a very strong improvement over gross margin if you compare it year-on-year, right. So let's not forget that, as I mentioned to you, of the 48.6% you should start by deducting 1% to get to 47.6% that's where you're starting point for the year. So, even if I say that we're approaching the 50% I think that's a very strong improvement over last year. If you then say what is going to be different in the next quarter to a very large extent this mix, right? So in Q1, we have quite some immersion sales and as you know, immersion has a very strong gross margin. We have more immersion sales in there relatively speaking, we have relatively low EUV sales in there. So while you're right that the gross margin for tool in the second half on the 3600D is going to be a bit bigger. I think it's also fair to say that in the second half we'll see more EUV sales relatively speaking than you have in Q1. So in that way it kind of creates an equilibrium there.

I think it's also fair to say when I say approaching the upper limit approaching to 50%, when Peter talks about potential, the potential over the 15.7, I think it is fair to say that the potential that we see there as Peter mentioned is in Deep UV and in Logic, so that would lead to a further uplift of the gross margin. So at 50% that I was that I think we're approaching is for the 15.7 indication that we gave or expectation that we articulated in terms of sales. If we're going to see sales uptick, I think there should also be an uptick in the gross margin percentage.

Q - Unidentified Participant

Understood. Can I just go to a brief follow-up on that, just on the potential upside for this year that you talked about, you said it's all coming from if it does come into DUV and from Logic, is that entirely the China sort of geopolitical upside that you're talking about or is there potential upside outside of that and normally when memory prices are going up in past cycles you've seen that the Memory vendors, the DRAM vendors tend to increase

their orders as well. If they were to come out with additional DUV orders, would you have the capacity to meet that demand? Do you have sufficient buffer there if that would happen?

A - Peter Wennink {BIO 1852674 <GO>}

Yeah, I think we would be able to deal with some of the additional demand in Memory and you are right. I mean you've been around, Janarthanan, even longer than I. And so you know how that goes, so, yes, that would be able to do that, how much it would be difficult at this moment in time January 20 we're talking about it, we're trying to guess the entire year. So that, yes, I think we will be able to do that. The upside that we're referring to is Deep UV logic that is for the very large part is upside in China which you know like I said if we the ship under the recurrent rules and that upside would materialize, yeah and then which would have the impact on the top line and on the gross margin as Roger mentioned. So yes, I think we would be able to do that so this from upside on Memory if they would come and it would be Deep UV to your point.

Q - Unidentified Participant

Understood, thank you very much.

A - Skip Miller {BIO 20244900 <GO>}

All right. Okay, thank you. We have run out of time. So if you were unable to get through on this call and still have questions, please feel free to contact the ASML Investor Relations department with your question. Before we sign off, I'd like to remind you that -- remind everyone that we are targeting to host our Investor Day on June 23 this year in London. Now we hope we can have a face to face meeting, but of course this will depend on the progress against the virus. We will provide more details in due time and we hope you'll be able to join us. Now on behalf of ASML, I would like to thank you all for joining us today. Operator, if you could formally conclude the call, I would appreciate it. Thank you.

Operator

Thank you sir. This concludes the ASML 2020 fourth quarter and full-year financial results conference call. Thank you for participating. You may now disconnect your line.