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PRESENTATION

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Good afternoon, everyone and welcome to TSMC's third-quarter 2024 earnings conference call. This is Jeff Su, TSMC's Director of Investor Relations and your host for today, TSMC is hosting our earnings conference call via live audio webcast through the company's website at www.tsmc.com, where you can also download the earnings release materials.

(Conference Instructions) The format for today's event will be as follows. First, TSMC's Senior Vice President and CFO, Mr. Wendell Huang, will summarize our operations in the third quarter 2024, followed by our guidance for the fourth quarter 2024. Afterwards, Mr. Huang and TSMC's Chairman and CEO, Dr. C.C. Wei, will jointly provide the company's key messages. Then we will open the line for a question and answer session.

As usual, I would like to remind everybody that today's discussions may contain forward-looking statements that are subject to significant risks and uncertainties which could cause actual results to differ materially from those contained in the forward-looking statements. Please do refer to the safe harbor notice that appears in our press release. And now, I would like to turn the call over to TSMC's, CFO, Mr. Wendell Huang, for the summary of operations and the current quarter guidance.

Wendell Huang - *Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer*

Thank you, Jeff. Good afternoon everyone. Thank you for joining us today. My presentation will start with the financial highlights for the third quarter of 2024. After that, I will provide the guidance for the fourth quarter of 2024.

Third quarter revenue increased 12.8% sequentially in NT, as our business was supported by strong smartphone and AI related demand for our industry leading 3 nanometer and 5 nanometer technologies. Gross margin increased by 4.6% points sequentially to 57.8%, mainly reflecting a higher capacity utilization rate and cost improvement efforts. Due to operating leverage, total operating expenses accounted for 10.4% of net revenue.

Thus operating margin increased by 5% points sequentially to 47.5%. Overall, our third quarter EPS was TWD12.54 and ROE was 33.4%.

Now let's move on to revenue by technology. 3 nanometer process technology contributed 20% of wafer revenue in the third quarter while 5 nanometer and 7 nanometer accounted for 32% and 17% respectively. Advanced technologies defined as 7nanometer and below accounted for 69% of wafer revenue.

Moving on to revenue contribution by platform. HPC increased 11% quarter over quarter to account for 51% of our third quarter revenue. Smartphone increased 16% to account for 34%. IOT increased 35% to account for 7%. Automotive increased 6% to account for 5%. DCE decreased 19% to account for 1%.

Moving on to the balance sheet. We ended the third quarter with cash and marketable securities of TWD2.2 trillion or USD69 billion. On the liability side, current liabilities increased by TWD31 billion, while long term interest bearing debt decreased by TWD38 billion. This change was primarily driven by the reclassification of TWD42 billion in bonds payable from noncurrent to current liabilities.

In terms of financial ratios, accounts receivable turnover days remain steady at 28 days. Inventory days increased by four days to 87 days, primarily due to the prebuild of N3 and N5 wafers.

Regarding cash flow and CapEx, during the third quarter, we generated about TWD392 billionⁱⁿ cash from operations, spent TWD207 billion in CapEx and distributed TWD91 billion for fourth quarter '23 cash dividend.

Overall, our cash balance increased TWD88 billion to TWD1.9 trillion at the end of the quarter. In US dollar terms, Our third quarter capital expenditures totaled USD6.4 billion. I have finished my financial summary. Now let's turn to our current quarter guidance.

Based on the current business outlook, we expect our fourth quarter revenue to be between USD26.1 billion and USD26.9 billion which represents a 13% sequential increase or a 35% year over year increase at the midpoint. Based on exchange rate assumption of USD1 to TWD32, gross margin is expected to be between 57% and 59%. Operating margin between 46.5% and 48.5%. This concludes my financial presentation.

Now let me turn to our key messages. I will start by talking about our third quarter '24 and fourth quarter '24 profitability. Compared to the second quarter, our third quarter growth margin increased by 460 basis points sequentially to 57.8%, primarily due to a higher capacity utilization rate and better cost improvement efforts including productivity gains.

Compared to our third quarter guidance, our actual gross margin exceeded the high end of the range provided three months ago by 230 basis points, mainly due to a higher than expected overall capacity utilization rate.

We have just guided our fourth quarter gross margin to increase by 20 basis points to 58% at the midpoint. This is primarily due to a higher overall capacity utilization rate in the fourth quarter, partially offset by continued dilution from N3 ramp-up, higher electricity prices in Taiwan, and N5 to N3 tool conversion cost.

Next, let me talk about our 2024 CapEx. Every year, our CapEx is spent in anticipation of the growth that will follow in the future years. And our CapEx and capacity planning is always based on the long term market demand profile.

As the strong structural AI related demand continues, we continue to invest to support our customers' growth. We now expect our 2024 CapEx to be slightly higher than \$30 billion. Between 70% and 80% of the capital budget will be allocated for advanced process technologies. About 10% to 20% will be spent for specialty technologies and about 10% will be spent for advanced packaging, testing, mask-making, and others. At TSMC, a higher level of capital expenditures is always correlated with higher growth opportunities in the following years. And as long as our growth outlook remains strong, we will continue to invest. Now let me turn the microphone over to CC.

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Thank you. Wendell. Good afternoon, everyone. First, let me start with our near-term demand outlook. We concluded our third quarter with revenue of USD23.5 billion, above our guidance in US dollar terms. Our business in the third quarter was supported by strong smartphone and AI related demand for our industry leading 3 nanometer and 5 nanometer technologies.

Moving into first quarter, we expect our business to continue to be supported by strong demand for our leading edge process technologies. We continue to observe extremely robust AI related demand from our customers throughout the second half of 2024, leading to increasing overall capacity utilization rate for our leading 3 nanometer and 5 nanometer process technologies.

At TSMC, we define server AI processors as GPUs, AI accelerators, and CPUs performing training and inference functions, and do not include networking, edge, or on-device AI. We now forecast the revenue contribution from server AI processors to more than triple this year, and account for mid-teens percentage of our total revenue in 2024. Supported by our technology leadership and broad customer base, we are well-positioned to capture the industry's growth opportunities. We now forecast our full year revenue to increase by close to 30% in US dollar terms.

Next, let me talk about our global manufacturing footprint update. TSMC's mission is to be the trusted technology and capacity provider of the global logic IC industry for years to come. All of our overseas decisions are based on our customers' needs, as they value some geographic flexibility, and a necessary level of government support. This is also to maximize the value of our shareholders.

In Arizona, we have received a strong commitment and support from our US customers and the US Federal, state, and city governments, and have made significant progress in the past several months. Our plan to build three fabs will help create greater economies of scale as each of our fab in Arizona will have a clean room area that is approximately double the size of a typical logical fab.

Our first fab entered engineering wafer production in April with 4 nanometer process technology, and the result is a highly satisfactory, with a very good yield. This is an important operational milestone for TSMC and our customers, demonstrating TSMC's strong manufacturing capability and execution.

We now expect volume production of our first fab to start in the beginning of 2025 and are confident to deliver the same level of manufacturing quality and reliability from our fab in Arizona, as from our fabs in Taiwan. Our second and third fabs will utilize more advanced technologies based on our customers needs.

The second fab is scheduled to begin volume production in 2028 and our third fab will begin production by the end of the decade. Thus, TSMC will continue to play a critical and integral role in enabling our customers' success, while remaining a key partner and enabler of the US semiconductor industry.

Next, in Japan, thanks to the strong support from the Japan central, prefectural, and local governments, our progress is also very successful. Our first specialty technology fab has completed all process qualification. Volume production ~~was started~~ ^{will start} this quarter and we are confident to deliver the same level of manufacturing quality and reliability from our fab in Kumamoto, as from our fabs in Taiwan.

The land preparation for our second specialty technology fab in Kumamoto has already begun and construction will begin in first quarter next year. This second fab will support our strategic customers for consumer, automotive, industrial, and HPC related applications; and volume production is targeted by the end of 2027.

In Europe, we have received strong commitment from European Commission and the German Federal, state, and city governments. Together with our JV partners, we held a groundbreaking ceremony in August for our specialty technology fab in Dresden, Germany.

This fab will focus on automotive and industrial applications, utilizing 12/16 and 22/28 nanometer process technologies. Volume production is scheduled to begin by the end of 2027.

Under today's fragmented globalization environment, oversea fab costs are higher for everyone, including TSMC and all other semiconductor manufacturers. Having said that, we will leverage our fundamental competitive advantage of manufacturing technology leadership and large scale manufacturing base.

Thus, TSMC will be the most efficient and cost effective manufacturer in the region that we operate, while continue to provide our customers with the most advanced technology at scale to support their growth. This concludes our key measures and thank you for your attention

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, thank you. CC. This does conclude our prepared statements. (Conference Instructions) Now let's begin the Q&A session. Operator, can we proceed with the first participant on the line, please?

QUESTIONS AND ANSWERS

Operator

Gokul Hariharan, JP Morgan.

Gokul Hariharan - JP Morgan - Analyst

Yeah, thank you. Good afternoon CC, Wendell, and Jeff. My first question is on the AI investments and the growth that you see. Recently, obviously, there's been a lot of questions about ROI of Gen AI investments, whether this could end up being a bubble.

How does the TSMC view this trend as you're making your capacity plans given you are enabling pretty much the processing capacity for pretty much everybody? And what gives you the confidence that this is going to be a more longer run growth cycle.

And related to this, could CC also talk a little bit about what do you think about the duration of this current semiconductor upcycle? Do you think it will continue into the next couple of years or are we getting closer to the peak of this cycle? That's my first question.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. Thank you, Gokul. Please allow me to summarize your first question. So Gokul's first question has two parts. The first part, I believe, is more focused on the AI related demand, the ROI and sustainability of this. He notes recently, there's been a lot of questions about the return or ROI from generative AI investments, and therefore, how do we view this trend?

Is there a worry that this demand sustainability or maybe a bubble? And very importantly, certainly what gives us the confidence that this could be a more long run sustainable demand cycle for AI?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay. Gokul, let me answer your question. Simply, whether this AI demand is real or not. Okay. And my judgment is real. We have talked to our customers all the time, including our hyperscaler customers who are building their own chips. And almost every AI innovators is working with TSMC. And so we probably get the deepest and widest look than anyone in this industry.

And why I say it's real? Because we have our real experience. We have used the AI and machine learning in our fab, in R&D operations. By using AI, we are able to create more value by driving greater productivity, efficiency, speed, qualities.

And think about it, let me use 1% productivity gain. That was almost equal to about \$1 billion to TSMC. And this is a tangible ROI benefit. And I believe we are -- we cannot be the only one company that have benefited from this AI application. So I believe a lot of companies right now are using AI and for their own improving productivity, efficiency, and everything. So I think it's real. Did I answer your question?

Gokul Hariharan - *JP Morgan - Analyst*

Yeah, that's clear. Maybe. Yeah. Could you also talk a little bit about how this fits into your view of the current semiconductor cycle also, CC?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

So Gokul, the second part is so we have a -- we believe the AI demand is real but how do we view the overall semiconductor demand cycle? Do we -- I think Gokul you are saying, do we think it's reached peak - peak out already?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Okay. I forgot to answer this one. The demand is real, and I believe it's just the beginning of this demand. All right. So one of my key customers say, the demand right now is insane. You know, that's -- it's just the beginning. It's from scientific to be engineering, and will continued for many years.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

And then the overall semiconductor demand, I think.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Overall semiconductor demand, except that the AI, I think everything is stabilized and start to improve.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay, Gokul?

Gokul Hariharan - *JP Morgan - Analyst*

Understood. That's clear. Thanks CC. My second question is more to do with CapEx. I think usually if you look at the past cycles of strong demand uptake, TSMC's CapEx also starts to move up quite a bit. This time around 2023 and 2024, your CapEx has been reasonably stable. It's still a large number, but not really growing a lot in the \$30 billion, \$31 billion range.

How should we think about look forward when we look forward into the next couple of years? What are you doing -- what are you planning for CapEx growth? Is there any deceleration that TSMC has about the pace of growth that the CapEx is still a little bit lower? Or should we expect that the CapEx also should start accelerating, given you're growing at 30% this year and looks like you're preparing for pretty strong growth the next couple of years as well?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay. So Gokul's second question is related to CapEx and looking out the next few years. So he notes that in past cycles, when demand is very strong, our CapEx starts to move up. But however, this time, even with what CC described as very real and the beginning of a strong AI demand.

These last two years, we've kept our CapEx. It's not really been growing much. So his question is that because we have any concerns or reservations around the demand, sustainability? Or what will the CapEx start to look like the next several years? Will we have to -- we'll begin to step it back up. Is that roughly what you're asking, Gokul?

Gokul Hariharan - JP Morgan - Analyst

C.C. Wei - ~~Taiwan Semiconductor Manufacturing Co Ltd~~ - Chairman and Chief Executive Officer

Yeah, that's right. Thanks,

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

Okay, Gokul, we do not have a number for 2025 CapEx today to share with you. However, we always use a discipline and thorough system to determine the appropriate capacity to build. And we always review our CapEx plans on an ongoing basis.

For TSMC, a higher level of capital expenditures is always going to be related with higher growth opportunities in the coming years. And as long as our growth outlook remains strong, we will continue to invest. Now as CC said, next year looks to be a healthy year. So it is very likely that our CapEx next year will be higher than this year. And we will provide you more updates in January conference.

Gokul Hariharan - JP Morgan - Analyst

Okay. That's very clear. Thanks. I'll go back to the queue.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Thank you, Gokul. Operator, can we move on to the next participant, please?

Operator

Sunny Lin, UBS.

Sunny Lin - UBS Investment Bank - Analyst

Thank you very much for taking my question. Good afternoon, very strong execution and margin. And so my first question is to follow up on the gross margin outlook. How should we think about into 2025. Last quarter management quantified overseas expansion to about 2% to 3% margin. But besides that, could you help us understand some of the other puts and takes? How should we think about the depreciation growth into 2025?

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. Sunny, thank you for your question. So, Sunny's question first is on the gross margin outlook into 2025. She notes last time, Wendell had already shared that overseas fab would dilute our gross margin probably by 2% to 3%. She wants to know besides that, what other factors should we consider? And also in terms of depreciation growth.

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

So Sunny, again, it's too early to talk about 2025 in detail. But there are a few things I can share with you, the puts and takes for 2025. Indeed, we expect the dilution from N3 ramp to gradually reduce next year. We continue to sell our value. So these things will help. Plus next year will be a healthy growth year, so utilization is also a positive.

On the other hand, as we said, there will be 2%-to-3%-point dilution from the overseas fabs when we begin to ramp them. At the same time, we are also converting some of our N5 capacity to N3 to meet the strong demand for N3.

And also, don't forget there -- we're ramping the N2 in 2026. There will also be some preparation cost for ramping N2. And every -- as we migrate every leading nodes, more and more advanced, this preparation cost will become bigger and bigger.

Now, you also know that the electricity cost has also risen very recently. And second time in the year, 14% higher for TSMC in October. This is after 15% increase in 2022, 17% increase in 2023, and 25% increase in 2024.

Basically the price has doubled in the last few years. So next year, we think that electricity price for us in Taiwan will be the highest in all the regions that we operate. And the higher electricity price, plus other inflationary cost, is expected to impact our gross margin by at least 1%.

And finally, of course, we do not have any control or cannot forecast foreign exchange rate movement. 1% of foreign exchange rate movement dollar NT will have an impact of 40 basis points to our gross margin.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Thank you. So Sunny, does that sort of give you a better understanding of the puts and takes for next year?

Sunny Lin - UBS Investment Bank - Analyst

Yeah, that's very helpful. Thank you very much Wendell. So quick follow up if any of you on depreciation increase into 2025. Should we expect similar magnitude as a this year which grow about 25%? And also a quick follow up on the 2% to 3% growth margin dilution for overseas.

If I calculate correctly, that would imply your overseas fabs in the US And Japan could be running at close to 0 or very low growth margin to start with. Would that be a conservative assumption that you are assuming at this point? Yeah.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. Well, that's two follow up. So I might take that as the second question, but the first one is again, Sunny had asked about depreciation next year.

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

Yeah, Sunny, that does give you more depreciation guidance in the January conference. Okay.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

And then the second question really is about our overseas fabs. As we ramp up Arizona and Japan, Sunny, I believe your question is, with that ramp and dilution of 2% to 3%. Does that imply the overseas fabs profitability is more closer to break even or something like that? Correct, Sunny?

Sunny Lin - UBS Investment Bank - Analyst

Right. Thank you, Jeff.

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

Yeah. Sunny, the overseas fabs have basically a lower profitability than the fabs in Taiwan, mainly because of a smaller scale and of next year will be initial ramp and higher cost. So it will be -- it will have a lower profitability, but it will gradually improve over the years.

Now, don't forget in Arizona and in Kumamoto, we are ramping more than one fabs. So when fab one begin to improve its profitability, the second phase comes in. And Arizona, when fab two improves, the third fab comes in. A similar situation in Kumamoto. And that's the reason why we're saying that in the next three or five years, we expect 2 to 3 percentage point dilution every year.

Sunny Lin - UBS Investment Bank - Analyst

Got it. Thank you very much.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, thank you Sunny. Operator, can we move on to the next participant, please?

Operator

Charlie Chan, Morgan Stanley.

Charlie Chan - Morgan Stanley - Analyst

Thanks Jeff and CC, Wendell, good afternoon. First of all, also congrats for your very, very strong result and the guidance. So my first question is really about your future bargain power to your customers and vendors. And what would that mean to your long term gross margin targets?

Because right now, even without the price adjustment next year, your gross margin is already blow up, right? It's already 57% to 58%, higher than most of your customers. So, with that, do you think you will be a little bit too aggressive to further hike price to your customers?

And I'm also wondering for those kinds of mature nodes, what's your pricing strategy here? So I want to ask, are the implication to, number one, your long term gross margin level? And secondly, are you going to handle the potential antitrust risk, given your monopoly -- near monopoly and also prepared to do some price adjustments? Thanks.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. So, I think Charlie's question is sort of, we always say that we value selling and its continuous and ongoing thing. So he wants to know what does this status look like with both customers and vendors? And then what is the implication to our long term gross margin target? And are we concerned about monopoly or things like that? Let me start that. I think is the first part, and then the mature part, I'll summarize later.

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay, Charlie, this is CC. Let me answer your question. You know, selling our value actually is a continuous and ongoing process for TSMC. We view all our customers as partners, and the progress of this effort on sharing our value is so far so good.

Also, you are talking about, we have more bargaining power with our equipment suppliers. Again, we view them as our partners. So I don't use the bargaining power. We always work with them and to move to the next step. And so, both TSMC and suppliers and customers are all working together. And with the purpose of that, we can have a TSMC customer to be successful in their market. Okay? That's my goal.

If our customers are doing well, we can be good also. Okay? And you mentioned one thing that I have a little bit concern. You say that ^{TSMC's} TSMC is a gross margin, now is higher than my customer, it's not true.

You know, look at one of the biggest AI suppliers. They have a gross margin that I probably never be able to reach in my life. But anyway, we are very happy to see them be successful, and we are in a different kind of business. We are capital intensive business. So we need a very high gross margin to survive and to have a sustainable and healthy growth. That's why we set up our pricing strategy. Yeah.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

And then a quick one, I think part of Charlie's question, the second part. Charlie, if I heard you right is sort of the outlook for mature note in terms of pricing.

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

I think Charlie, you're talking about the way that the anti-trust concern or something like that. Did I hear you right?

Charlie Chan - Morgan Stanley - Analyst

Yeah, I'm a little bit concerned. Same as other investors as well.

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

The anti trust are meaning that TSMC has a very high market share and with some of unnecessary competitions methodology, let me assure you that the last time we proposed a new version of the Foundry 2.0, which including wafer manufacturing and packaging, and testing, mask making, and all others.

All these kind of things become more growing importance like a packaging, testing, mask making. Right now, probably is a little bit higher than 10% of TSMC's total revenue. That's one. And all my competitors, they are IDMs in particular, they also have their packaging, testing, and mask making.

And so I think Foundry 2.0 is a better reflect TSMC's addressable market, and our share is probably around 30%. So, not dominant yet. We are big. Yes, because we performed very well. But no, it's not a kind of antitrust concerning. It's not in our picture actually. Charlie, did I answer your question?

Charlie Chan - Morgan Stanley - Analyst

Yeah, thanks. Yeah. So, I guess you won't stop your margin improvement until 75%. But anyway, I'll leave that long term margin. I'll get or guidance to the next caller or your next January guidance. But I do have a second question. Is that okay, Jeff, I can ask a second one.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Quickly. Yes.

Charlie Chan - Morgan Stanley - Analyst

Okay. Yeah, the second one is about your, IDM outsourcing opportunity, right? Also part of your Foundry 2.0 because one of the major IDM opportunities, Intel, has recently announced they want to spin off their Foundry segments, right? So, number one, TSMC, do you really expect more outsourcing from Intel, given this change? And even, will TSMC considered to acquire part of Intel fabs in the long term? So I think that that's that. And also quickly comment on news reporting about Samsung's IDM outsourcing opportunity. So that's my second part of the question.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. So second part is on IDM outsourcing. He wants to know with the - I guess US IDM and Foundry 2.0, do we expect more outsourcing from this US IDM and, you know, how do we plan for the capacity? Would we consider, I think to acquire part of this IDM's fabs or manufacturing? And then how do we see outsourcing from Samsung?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Well, that's a lot of questions. Let me answer one of the easiest one. Are we interested to acquire one of IDM's fabs? The answer is no. Okay, no, not at all. But now let's talk about the business part. It's always customers' decision for their outsourcing strategy. But I look at the business of the IDM, one of the IDMs in California, which has been a very good customer to TSMC. And we continue to receive a sizable business from them to be frank with you. So your question is whether that we continue to increase, that is too specific. So let's wait for the next few quarters to answer your question.

Charlie Chan - Morgan Stanley - Analyst

Okay, thank you.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

All right. Thank you Charlie, operator. Can we move on to the next person caller, please?

Operator

Bruce Lu, Goldman Sachs.

Bruce Lu - Goldman Sachs - Analyst

Okay, thank you for taking my question. My question is going back to the longer term growth outlook. I think TSMC has been guiding for 15% to 20% revenue CAGR from '21 to '26. On the back of the insane AI demand, you know, do we have an update outlook for the revenue guidance beyond 2026?

In addition, when TSMC guided in 2021, TSMC achieve 25% growth almost every year except for 2023. So what kind of like revenue growth outlook or the growth pattern in the next five years? Do we expect to be a more stable growth every year or do we expect to be a stronger growth for most of the year and one year of weakness?

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. So thank you, Bruce. So Bruce's first question is about our long term growth outlook. He notes, yes, we did provide a long term revenue growth CAGR of between 15% to 20% CAGR in us dollar terms from '21 to '26. So he wants to know what is the updated revenue guidance, the outlook beyond 2026. And he also notes that when we provided this guidance in 2022, we basically were able to grow greater than 25% every year except for 2023.

So he wants to know the next five years. Will the growth be a similar level every year or will it be like a strong years followed by a down year sort of the pattern of the growth?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay, Bruce, that's big questions you ask us whether the next five years will be as good as the past five years from '21 to '24 right now. Except the 2023, we have a very good growth. As you said, it's always 20% to 30%. The next five years, it will be very healthy also to TSMC. But I don't have a long term CAGR number to update you, but they will be very healthy also. That's so far I can assure you.

Bruce Lu - Goldman Sachs - Analyst

So, a quick follow up, does that insane AI demand start to help you to grow slightly faster than before?

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

So, Bruce wants to know with the very robust AI related demand. Can we grow faster than before?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

I hope so. But as I said today, we don't, we don't have a long term CAGR number to share with you. Okay.

Bruce Lu - Goldman Sachs - Analyst

Okay. Let me switch gear to 2 nanometers and A16. So I think that you know the HPC demand and you know, for advanced node is very strong, we do see a more customer engagement for 2 nanometers. But at the same time, we also see more chiplet design in 2 nanometers, which might effectively lower the 2 nanometer wafer area requirement. So how should we think about your 2 nanometer capacity build versus the 3, 5 and 7 in the past? And how do we see the A16 migration beyond 2 nanometer?

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. So Bruce's second question, as he said is on 2 nanometer and A16. He notes certainly with HPC and AI related more and more engagement at 2 nanometer. But he also notes or his observation with chiplets that could reduce the demand for 2 nanometer. So he really wants to know sort of what is the capacity build or capacity outlook for 2 nanometer that we are looking at.

And also how do we see the migration from 2 nanometer to A16? Is that correct Bruce?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay. Let me answer this question. Yes. The chiplets have become kind of - our HPC, especially our HPC customers' strategy. Is it going to reduce the capacity for 2 nanometer because they become chiplets? The answer is no. Actually we have many, many customers interested in the 2 nanometer. And today with their activities with TSMC, we actually see more demand than we ever dream about as compared with N3. So we have to prepare more capacity in N2 than in N3. And following by A16, again, A16 is a very, very attractive for the AI server chips. And so actually the demand is also very high and so we are working very hard to prepare both 2 nanometer and A16 capacity. Okay, Bruce. Did I answer your question?

Bruce Lu - Goldman Sachs - Analyst

Yes, perfect. Thank you.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

All right. Thank you. Operator. Can we move on to the next participant please?

Operator

Brett Simpson, Arete.

Brett Simpson - Arete Research - Analyst

Yes, thanks very much. My question was on the long term planning around AI. Keen to understand how TSMC gets comfortable with customer demand for AI beyond 2025. And I asked this because it takes, you know, a couple of years before you can build a fab. So you need to be taking early, an early view on, you know, what is AI look like in 2026, 2027. So how are you, how are you specifically cooperating on long term plans for capacity with these AI customers? What commitments are these customers giving you? And I guess historically, we've seen hyperscaler CapEx go through digestion period. So how do you de-risk the capacity plans here for AI as we go through this, you know, really heavy demand period? Thank you.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. So Brett's first question again is on the long term planning around AI demand. His question is really for beyond 2025 given the lead times, how do we plan our capacity for the long term? How do we get comfortable around the customer demand related to AI beyond 2025? I think that that is your gist of your question, Brett.

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay, Brett. Thank you. Let me say again that we did talk to a lot of customers. Almost every AI innovator are working with us and that including the hyperscalers. So if you look at the long term market, the long term structural and market demand profile. I think we have some picture in our mind and we make some judgment of course, and we work with them on a rolling basis. And so how we prepare our capacity? Actually, just like Wendell said, we have a disciplined and throughout system to plan the appropriate level of capacity and that to support our customers' need and also to maximize our shareholders value. That's what we always keep in our mind.

Brett Simpson - Arete Research - Analyst

Okay. My, my follow up, yeah, that's that's great. Thanks. I guess my follow up question, we've read a lot about Taiwan having energy challenges and this comes at a time when TSMC is preparing for a big node with 2 nanometer.

So my question is, are there any power challenges to overcome when you're building out your N2 fabs especially in Hsinchu and Kaohsiung. And does it make sense for TSMC to plan for nuclear power? I mean, we see a lot of hyperscalers are planning for nuclear power in the US to build out gigawatt facilities. How do you think about nuclear power in future for TSMC fabs? Thank you.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay, thank you, Brett. So Brett second question, he notes that Taiwan electricity and energy, there are a lot of challenges with this. So how do we plan for this, especially when we're bringing on new nodes. Are there, what are the power challenges to overcome, given the state of Taiwan's energy and then would we consider even nuclear power for ourselves to help support?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Okay, Brett. Yes, we are building many fabs in Taiwan and that require electricity, water and land. We continue to work with the government. Actually, we have a very close communication with government and to tell them that our requirement, our plan and we got assurance from the government say that they will support TSMC's growth and we, we believe that.

And so whether how they prepare for the electricity from the nuclear power plant or from just some kind of, you know, other sources like green energy something. We are not ready to share with you yet. But we got the assurance that we're going to get enough electricity support including the water and the land.

Brett Simpson - *Arete Research - Analyst*

Okay, thank you very much.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay. Thank you, Brett. Can we move on to the next participant, please?

Operator

Krish Sankar, TD Cowen.

Krish Sankar - *TD Cowen - Analyst*

Yeah. Hi. Thanks for taking my question. The first one I had was I'm kind of curious on the non-AI demand. How do you look at your wafer demand for PC and mobile into calendar '25? And have you seen any meaningful revision upwards or downwards on that? And then I had a follow up?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay. So Krish first question is really focus on PC and mobile demand. How do we see this demand going into 2025. Have we seen it improve or revision up or downwards, and how would we look at it going into next year?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Okay, Krish, the unit growth of PC and the smartphone is still in low single digit. But the more important is the content. The content now we put a more AI into their chips, and so the silicon area increases faster than the unit growth. So again, I would like to say that for this PC and the smartphone business not only is it gradually increase and we expect it to be healthy in the next few years because of AI related applications.

Krish Sankar - TD Cowen - Analyst

Got it, got it very helpful. And then my quick follow up is, I'm kind of curious, on your packaging side, advanced packaging today is part of the non-wafer revenues. Obviously, you're investing in CoWoS and other technologies. How to think about that advanced packaging revenue growth over the next few years? And do you think at some point in the next couple of years, advanced packaging can reach corporate level gross margins or would it always be below that? Thank you very much?

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, thank you Krish. So Krish's second question is on advanced packaging. So we have been putting a lot of effort. So his question is, what is the revenue growth outlook for advanced packaging in the next few years, and also when or do we think it can reach the corporate average gross margin as well? So maybe Wendell can address.

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

Yeah, Krish. Advanced packaging in the next several years, let's say five years, will be growing faster than the corporate average. This year, it accounts for about high single digit of our revenue. In terms of margins, yes, it is also improving, however, it's approaching corporate but not there yet.

Krish Sankar - TD Cowen - Analyst

Thank you very much.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, Krish. Operator in the interest of time, we'll take questions from the last two participants, please.

Operator

Laura Chen, Citi.

Laura Chen - Citi - Analyst

Hi. Thank you for taking my question, gentlemen and also congratulations on the strong performance. I'm just wondering that with the decent free cash flow increase in the recent quarter and I believe that next year will be a decent year for TSMC to grow. So, is there any opportunity for TSMC to consider increase the cash dividends in the near future?

And how do you view the balance of capital allocation between shareholder returns and also the continued investment in the advanced technology like 2 and 3 nanometer? That's my first question.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, thank you, Laura. So Laura's first question is related around - her question really is looking at our free cash flow generation noting that it is continues to increase and then with next year being a healthy, good year, it should continue to grow.

So her question is there room or how do we see the cash dividend as related to free cash flow? And also I think Laura really her question was also a balance sheet ramification. How do we balance the shareholder return interest set against what CC said, a capital intensive industry and CapEx. So two parts to it, first on the cash dividend and then sort of on the balance sheet management.

Wendell Huang - Taiwan Semiconductor Manufacturing Co Ltd - Senior Vice President and Chief Financial Officer

Right? Laura, certainly dividends. Our dividend policy as we said before is sustainable and steadily increasing. And steadily increasing when we are harvesting the investment that is made in the past and as the free cash flows increase, that means we are harvesting the investment in the past. So it's going to be steadily increasing, That's for the dividends.

Balance sheet, where are - the primary objective of ~~our~~ using our balance sheet or our cash resources is organic growth. So that will bring our shareholders biggest return. And then whatever the free cash flow is left, then we will return part of those to our shareholders, that's always our policy.

Laura Chen - Citi - Analyst

Okay. Yeah, that that's very consistent. But I think given our like a rich cash flow generating capabilities and also, yeah, I mean, we can probably be able to harvest. So I think the investor kind of expecting the dividends increase gradually. Yeah, and also my second question is about our Foundry 2.0 model that has been discussed since last time.

But could you share more details on how the Foundry 2.0 is being implemented. And from different spec like the traditional logic Foundry business and advanced packaging. And also maybe the IDM customers, can you give us kind of an idea what will be the like a growth outlook for a different kind of segmentation in that new definition?

C.C. Wei - Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer

Well, Laura, I think you know, again in this Foundry 2.0, among the content inside, the leading process nodes, advanced packaging, will have much stronger growth. And on those mature nodes and conventional packaging, that's is not so rosy as advanced packaging and leading process node. Did that answer your question?

Laura Chen - Citi - Analyst

Okay. Got it. Thank you.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay. Thank you. Laura operator can move on to the last participant, please.

Operator

Rick Hsu, Daiwa.

Rick Hsu - *Daiwa Securities Markets Hong Kong Ltd - Analyst*

Yeah, hi. Thank you for taking my questions. So my a very quick one from me. The first one, can you update your forecast for this year's global semiconductor revenue ex-memory? I remember you were talking about around 10% growth. So can you give us a new update and also share with us a preliminary outlook for next year.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Okay. So Rick's question is really can we, you know, provide an update to our forecast for whether it's semiconductor excluding memory industry growth or/and Foundry 2.0 for 2024 first?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Yeah. Well, our forecast stays the same, very similar to what we said the last time. Of course, TSMC of growth is a little bit better than the last time we estimate. But overall, the whole industry is almost the same as we said in last quarter.

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

And then the second part of the question, what about next year?

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Well, we continue to say that it's too early to make a comment on 2025 growth outlook. But we are going to share with you in the next quarter's earnings release. Okay.

Rick Hsu - *Daiwa Securities Markets Hong Kong Ltd - Analyst*

All right. Thank you so much. It's a little question as a follow up, the second one. Can you share with us your CoWoS capacity buildup for this year and this year. I know you guys seem to have revised up several times. So can you share us the latest one?

Jeff Su - *Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations*

Yeah. So Rick's second question then is to update on our CoWoS capacity plan for both 2024 and 2025 to the extent that we can share.

C.C. Wei - *Taiwan Semiconductor Manufacturing Co Ltd - Chairman and Chief Executive Officer*

Okay, Rick, in fact, we are putting a lot of effort to increase the capacity of the CoWoS. Roughly, let me share with you, today's situation is our customers' demand far exceeds our ability to supply. So even we work very hard and increase the capacity by about more than twice, more than two times as of this year compared with last year, and probably double again, but still not enough. And, but anyway, we are working very hard to meet the customer's requirement.

Rick Hsu - *Daiwa Securities Markets Hong Kong Ltd - Analyst*

All right. Thank you so much.

Jeff Su - Taiwan Semiconductor Manufacturing Co Ltd - Director of Investor Relations

Okay, thank you, Rick. Thank you, everyone. This concludes our Q&A session. Before we conclude today's conference, please be advised that the replay of the conference will be accessible within 30 minutes from now and the transcript will become available 24 hours from now, both of which you can find and are available through TSMC's website at www.tsmc.com.

So thank you everyone for joining us today. We hope everyone continues to be well, and we hope to see you again and you will join us again next quarter. Goodbye and have a good day.

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