TSLA Earnings Call – FY2023 Q4

Date: January 24, 2024

Martin Viecha

Good afternoon, everyone, and welcome to Tesla's Fourth Quarter 2023 Q&A Webcast. My name is Martin Viecha, VP of Investor Relations, and I'm joined today by Elon Musk, Vaibhav Taneja, and a number of other executives. Our Q4 results were announced at about 3.00 pm Central Time in the Update Deck we published at the same link as this webcast. During this call, we will discuss our business outlook and make forward-looking statements. These comments are based on our predictions and expectations as of today. Actual events or results could differ materially due to a number of risks and uncertainties, including those mentioned in our most recent filings with the SEC. During the question-and-answer portion of today's call, please limit yourself to one question and one follow-up. Please use the raise hand button to join the question queue. But before we jump into Q&A, Elon has some opening remarks. Elon?

Elon Musk

Thank you. So the Tesla team did an incredible job in 2023. We achieved record production and deliveries of over 1.8 million vehicles in line with our official guidance. And in Q4, we were producing vehicles at an annualized run rate of almost 2 million cars a year. This is really a phenomenal achievement. Looking at just the Fremont factory alone, we made 560,000 cars. This is a record. In fact, it's the highest output of automotive plants in North America. And people are often surprised that the highest output factory, car factory in North America is in the San Francisco Bay area. It's a little counterintuitive, perhaps. And it's really had an incredibly positive impact on that entire area. What would have been a rundown strip mall is the highest productivity car plant in the Americas. Think about that. It was derelict when we got it, and now it's the most productive plant in this entire part of the world. And it's enriched the community in so many different ways. It's really a gem. So I'm super proud of the people that work there. Model Y became the best-selling vehicle globally, as predicted. The best-selling vehicle of any kind, not just electric vehicles with over 1.2 million units delivered. The energy storage business delivered nearly 15 gigawatt hours of batteries in 2023, compared to 6.5 gigawatt hours the year before. So tremendous year-over-year growth, triple-digits. And yeah, I think we'll continue to see very strong growth in storage, as predicted. I said for many years that the storage business would grow much faster than the car business, and it is doing that. Free cash flow remains strong at $4.4 billion in 2023, in spite of record spending on future projects. So we had record CapEx expenses as well as record R&D. This brings us to 2024. There's a lot to look forward to in 2024. Tesla is currently between two major growth waves. We're focused on making sure that our next growth wave, driven by next-gen vehicle, energy storage, full self-driving, other projects, is executed as well as possible. For full self-driving, we've released Version 12, which is a complete architectural rewrite compared to prior versions. This is end-to-end artificial intelligence. So another bit nets basically photons in and controls out, and it really is quite a profound difference. This is currently just with employees and a few customers, but we will be rolling out to all customers in the U.S. who request full self-driving in the weeks to come. That's over 400,000 vehicles in North America. So this is the first-time AI is being used, not just for object perception, but for path planning and vehicle controls. We replaced 330,000 lines of C++ code with neural nets. It's really quite remarkable. Yeah, sort of, as a side note, I think Tesla is probably the most efficient company in the world for AI inference. Out of necessity, we've actually had to be extremely good at getting the most out of hardware, because Hardware 3 at this point is several years old. So I think we're quite far ahead of any other company in the world in terms of AI and inference efficiency, which is going to be a very important metric in the future in many arenas. So, the new Model 3 is now available globally. So we did an updated Model 3. While the car looks similar, a lot of work has gone into the vehicle to make it better in every way. It is significantly quieter, more refined, better equipped, has longer range and many other improvements, and I recommend taking it for a test drive. If you have not driven a Model 3 in a long time, you should really try the new one. So, steady improvements. And we're very far along on our next-generation low-cost vehicle. This is an earnings call, not a product announcement. So there'll no doubt be many questions that try to ask us about new product, new products coming. But we reserve product announcements for product announcements not earning calls. So -- but we're very excited about this, and this is really going to be profound, not just in its design of the vehicle itself, but in the design of the manufacturing system. This is a revolutionary manufacturing system significantly, far more advanced than any other automotive manufacturing system in the world, by a significant margin. Several years ago, I said, perhaps the most important competitive characteristic of Tesla in the future will be manufacturing technology and you will really see that come to bear with our next-gen vehicle. The first manufacturing location for this will be at our Gigafactory and headquarters in Austin, Texas, and then we'll follow that up with other locations around the world. Probably the factory we'll build in Mexico will be second, and then we'll be looking to identify a third location, perhaps by the end of this year or early next outside of North America. In conclusion, we had a great year with record production, record deliveries, and a strong free cash flow in spite of a very high interest rate environment. And we are focused on exciting new projects that will -- I think, ultimately if we execute on all these things, and it is very hard to do all these things, it's not a sure thing. But I do see a path where Tesla could one day be the most valuable company in the world. I do emphasize that is not an easy path and a very difficult one, but it is now in the set of possible outcomes and previously I would not have thought it is in the set of possible outcomes. And thank you, again to all of our investors, our employees, and our suppliers for a strong year, and looking forward to a great 2024 and years to come. Thank you.

Martin Viecha

Thank you. And our CFO, Vaibhav has some opening remarks as well.

Vaibhav Taneja

Thanks, Martin. Good afternoon, everyone. As Elon mentioned, we had a record year in terms of both production and deliveries for our auto business as well as record deployments in our energy business. This was achieved despite 2023 being a challenging year in terms of higher interest rates and higher inflation. Big thanks to our customer for being with us through this challenging period. I would also like to thank the whole Tesla team for their resolve and dedication throughout. In terms of 2023 financials, we ended the year with over $96 billion of revenue and generated $4.4 billion of free cash flow to end the year with over $29 billion of cash and investments on hand. Our 2023 GAAP net income was impacted by the recognition of one-time non-cash benefit of $5.9 billion from the release of valuation allowance on certain deferred tax assets. This was due to our recent history of sustained profitability and is similar to several other companies who have recently gone through a similar change in their account. Accordingly, starting with Q1, our book tax rate will now be more in line with other companies in the S&P 500. In our vehicle business, we continue to see improvements in our per unit cost despite us being in the early phase of Cybertruck ramp. As a result, our auto gross margin improved sequentially. That said, predicting auto gross margins is extremely challenging since there are many moving parts to this equation, some of which are out of our control like the change in tariffs or local incentives to name a few. While the teams are focused on cost reductions, we are approaching the limits within our current platforms. On the demand front, as promised, we made investments in digital campaigns in 2023. We fully appreciate the importance of customer education as we are still in a customer acquisition phase. Our data suggests that around 90% of our vehicle buyers in 2023 never owned

a Tesla before. We are being creative in figuring out ways to bring in new customers and educate them about the benefits of owning a Tesla versus gas-powered vehicles. The key among them being total cost of ownership. This concept is mostly overlooked for just the upfront cost. We will be rigorous in evaluating our campaigns, curating the content, and optimizing spend accordingly to support the overall demand. There are two additional things I would like to mention as it relates to the US market. First, for customers who qualify for the IRA buyer credit, we now offer that as a point-of-sale benefit for Model Y, which means an immediate reduction of $7,500 at the time of purchase to the end customer. Secondly, we continue to offer very attractive lease rates for Model 3 and Y using our Partner Leasing Program. Note that the sales under this program are recognized as upfront revenue and reported within automotive sales. Our energy storage business had another record year with deployments more than doubling and revenues increasing by more than 50%. This business is poised to again surpass our auto business in terms of growth rate in 2024. This has been in the works for quite some time with us laying the foundation a few years back by building our Megafactory in Lathrop. I would like to thank the whole Tesla Energy team for their efforts to make this a reality. Our services and others business also started contributing meaningfully to our results and our fleets -- as our fleet grows. As we expected the fleet-based revenues from supercharging, used cars, and services continue to increase. For 2024, our focus is to continue growing our output, continuing our cost reduction efforts, and increasing investments in our future growth initiatives. Accordingly, we are currently expecting our capital expenditure for 2024 to be in excess of $10 billion. We believe this would be critical in helping us lay the foundation for the next phase of growth. Once again, I would like to thank everybody at Tesla, our investors, and our suppliers for being with us in this journey. We can open it up to questions, Martin.

A - Martin Viecha

Thank you. Let's go through investor questions. Question number one is from Michael. Given that you moved the start of the next-generation compact vehicle production to Austin, has the timeline improved so that we might see next-generation platform vehicles in 2025?

Elon Musk

I mean, I would certainly say things with they should be taken with a grain of salt, since I am often optimistic. I don't want to blow your minds, but I'm often optimistic regarding time. But our current schedule shows that we will start production towards the end of 2025. So sometime in the second half. That's just what our current schedule says. But there's a lot of new technology like a tremendous amount of new revolutionary manufacturing technology here. The reason I wanted to put this new revolutionary manufacturing line at Giga Texas was because we really need the engineers to be living on the line. This is not sort of off the shelf, just works type of thing. And it's just a lot easier for Tesla engineering to live online if it's in Austin versus elsewhere. So -- but we are currently expecting to start production second half next year. That will be a challenging production ramp. Like, as I can emphasize we'll be sleeping on the line practically. In fact, not practically. We will be. But I am confident that once it is going, it will be head and shoulders above any other manufacturing technology that exists anywhere in the world. It's next level. So it's always difficult to predict what that S-curve of manufacturing looks like. So it always starts off real slow, and then it grows exponentially. So -- and predicting that intermediate S-curve is difficult, so I don't know. It's hard to say what the unit volume would be next year. We're not going to make any predictions on that front, but it does seem quite likely that we will start production next year.

Martin Viecha

Thank you. The next question is from Michael again. What has been the barrier to ramping 4680 cells into the multi-million cells per week rate and when do you expect to get there?

Elon Musk

Karn?

Karn Budhiraj

Yeah. First, I just want to allay any concerns regarding 4680 limiting the Cybertruck ramp, because I've seen some people commenting about that. To date, 4680 production is ahead of the ramp with actually weeks of finished cell inventory. And the goal is to keep it that way, not only for Cyber, but for our future vehicle programs. And as Elon said, it is an S-curve here too. It's hard to predict these things, but I'm just describing our goals.

Elon Musk

It's a hard problem.

Karn Budhiraj

Yeah.

Elon Musk

There are entire companies where all they do is make battery cells. That's, like, all they do.

Karn Budhiraj

Indeed, indeed.

Elon Musk

We do a lot of other things, and we got a lot of breakthrough technologies that take time to figure out with 46. It's not just that it's a 46 millimeter diameter by 80 millimeter [Indiscernible] cell. That's just the dimensions. There's tremendous amount of new technology in the cell itself.

Karn Budhiraj

And manufacturing technology.

Elon Musk

Yes, exactly.

Karn Budhiraj

And just regarding what the team was able to do in Q4, Texas successfully swapped line one from the Model Y design of the cell to the Cybertruck design of the cell, which was the 10% cell energy increase I've mentioned before. And as with any major new product introduction, the factory and engineering teams collaborated to ensure quality of the new design and the process changes as their first priority. And now our focus returns to cost and production ramp in Q1. And in terms of what we're doing, we're currently running one production line, one assembly line, using two assembly lines in addition for yield and rate improvement trials, and we have a fourth in commissioning, and four more will be installed starting in Q3 this year. So definitely this is a big year for ramping 4680.

Elon Musk

But we also do want to emphasize that we also expect to ramp orders from our suppliers.

Karn Budhiraj

Yeah.

Elon Musk

So this is not about replacing our suppliers, it's about supplementing our suppliers.

Karn Budhiraj

Yes.

Elon Musk

So we are very appreciative of our suppliers. Panasonic, obviously, is our longest supplier. They're an amazing company. We've got CATL, we've got LG and BYD.

Martin Viecha

Thank you. The next question is from Adam. Should retail shareholders be concerned that Elon has stated that he is uncomfortable expanding AI and robotics at Tesla if he doesn't have 25% of voting?

Elon Musk

Yeah, I guess. Let me explain what my concern is here, which is that I see a path to creating an artificial intelligence and robotics juggernaut of truly immense capability and power. And my concern would be, I don't want to control it. But if I have so little influence over the company at that stage that I could sort of be voted out by some sort of random shareholder advisory firm. We've had a lot of challenges with institutional shareholder services, ISS, I call them ISIS, and Glass Lewis, which -- and there's a lot of activists that basically infiltrate those organizations and have strange ideas about what should be done. So I want to have enough to be influential. Like, if we could do a dual-class stock, that would be ideal. I'm not looking for additional economics. I just want to be an effective steward of very powerful technology. And the reason I just sort of roughly picked approximately 25% was that's not so much that I can control the company, even if I go bonkers and if I'm, like, mad, they can throw me out. But it's enough that I have a strong influence. That's what I'm aiming for, is a strong influence, but not control. If there's some way to achieve that that would be great.

Martin Viecha

Thank you. The next question is, what is your expectation for automotive gross margin ex-regulatory credits for the full year?

Vaibhav Taneja

Like, I said in my opening remarks, we're focused on reducing the cost of our vehicles. This is very extensive and involved exercise whereby we look at not just the component cost, but down to the packaging used to get the materials to the production flow. Each element of the cost is scrutinized to optimize further. A few pennies saved at the subcomponent level, whether through engineering redesign or from many other things which I mentioned leads to cost reduction. This is a constant exercise and we just have to chase down every penny possible. We have a strong team which is hyper-focused on this. However, this is a very difficult thing to predict precisely because there are lots of...

Elon Musk

We don't know. We don't have a crystal ball, so it's difficult for us to predict this with precision. If the interest rates come down quickly, I think margins will be good. And if they don't come down quickly, they won't be that good. Yeah. It's always important to remember that the vast majority of people buying a car is about the monthly payment. It's not that people don't want. We have tons of -- we have lots of people who want to buy our car but simply cannot afford it. And as interest rates drop and that monthly payment drops, then they're able to afford it and they buy the car. It's pretty straightforward and there are no tricks around to get around this.

Martin Viecha

Okay. Thank you. The next question is, does the company anticipate a 50% volume CAGR to be realized in either of 2024 or 2025? If not, why not?

Vaibhav Taneja

As we have said in our prior guidance, there will be periods where we won't be growing at the same rate as before. We are between two major growth waves. The first one began with the global expansion of Model 3 and Y, and we believe the next one will be initiated with the next generation platform. In 2024, our volume growth will be lower, as we have said, because we are trying to focus the team on the launch of the next generation vehicle.

Martin Viecha

All right. Thank you very much. The next question is from Michael. When will Tesla start construction on the Giga Nevada expansion and Giga Mexico, and when can we expect each of these to produce their first products such as 4680 cell, Semi, and next-gen vehicles?

Karn Budhiraj

We have recently broken ground for the next phase of Giga Nevada expansion to incorporate Semi and other projects. But as said earlier, as regarding Mexico, we want to first demonstrate success with the next-generation platform in Austin before we start construction. Therefore, we have started the long lead work to get the basics ready and plan to follow our recipe from the 3/Y ramp with Shanghai, where we started with learnings from Fremont and ramp really quickly.

Elon Musk

Yeah, exactly. It's important to emphasize that I mean, Model 3 production was three years of hell, I've said it before, some of the really worst years of my life, frankly. I still have mental scar tissue from those three years, as do many. And then Model Y was somewhat of a variant on Model 3. So a much easier situation. And then we were able to actually do an improved -- slightly improved versions of, in some cases, significantly improved versions of the Model Y production line in Shanghai and Berlin. And that's the right, I think the sensible way to go about things is kind of figure out the core technology of the manufacturing line and then replicate it with improvements throughout the world.

Martin Viecha

Thank you. The next question from Michael is, has there been any progress made with an FSD licensing agreement with another company?

Elon Musk

I really think lots of car companies should be asking for FSD licenses. And we've had some tentative conversations, but I think they don't believe it's real quite yet. I think that will become obvious probably this year. And I do want to emphasize that if I were CEO of another car company, I would definitely be calling Tesla and asking to license Tesla full self-driving technology. It's definitely the smart move.

Martin Viecha

Thank you. The next question from Siddharth. What is the timeline for Optimus first production off volume production line and what are the barriers to getting there?

Elon Musk

Optimus, obviously, is a very new product, an extremely revolutionary product, and something that I think has the potential to potential to far exceed the value of everything else that Tesla combined. When you think of an economy, economy is productivity per capita times capita. But what if there's no limit to capita? There's no limit to the economy. And the technologies that we've -- AI technologies that we've developed for the car translate quite well to a humanoid robot because the car is just a robot on four wheels. Tesla is arguably already the biggest robot maker in the world. It's just a four-wheeled robot. So Optimus is a humanoid robot with arms and legs. It's by far the most sophisticated humanoid robot that's being developed anywhere in the world. I think we've got a good chance of shipping some number of Optimus units next year. But like I said, this is a brand new product. A lot of uncertainty -- when you have -- when there's a lot of uncertainty in your uncharted territory, it's obviously impossible to make a precise prediction. But we will be updating the public with progress on Optimus every few months, and you can see that it's advancing very quickly. I was just in the Optimus lab, actually, until late last night, like red night or something, finally left the Optimus lab. The team's doing amazing work. That's obviously a case where we want to make sure that Optimus is safe, especially at scale, and that there's no -- it should be impossible for any centralized control to upload malware to a humanoid robot. So we're going to want to pull then localized shut off that cannot be updated from a central server. That's the case where we really have to give extreme thought to safety. But like I said, I do think it has the potential to be the most valuable product of any kind ever, by far.

Karn Budhiraj

Just to comment on the barrier, I think the barrier, and we've talked about this, is like getting it to actually do something useful. Like, we can get it to walk around, we can get it do things, but it's like that utility part.

Elon Musk

We can already do some useful things.

Karn Budhiraj

But like, to making millions of these things, it's like utility. Got to get the utility of it.

Elon Musk

Yeah. A smart robot that can do -- that's capable of doing generalized tasks is what it will be in terms of doing moderately specialized tasks. Well, it can already do that. It'll just get better through the course of the year. As we improve the technology in the car, we improve the technology in Optimus at the same time. It runs the same AI inference computer that's on the car. Same training technology. I mean, we're really building the future. I mean, the Optimus lab looks like the

set of Westworld. Admittedly, that was not a super utopian situation.

Karn Budhiraj

Yeah. Not the best reference.

Elon Musk

Yeah. The creators of Westworld, Jonathan Nolan, Lisa Joy Nolan, friends, old friends of mine, actually. And I invited them to come see the lab. I think they'll come see it, hopefully soon. It's pretty wild, especially the sort of subsystem test stands where you've just got like one leg on a test stand, just doing repetitive exercises and one arm on a test stand. Pretty wild. Yeah.

Karn Budhiraj

We're not entering Westworld anytime soon.

Elon Musk

Right. You take safety very, very seriously.

Martin Viecha

Thank you. The next question from Nermin is, how many Cybertruck orders are in the queue and when do you anticipate you will be able to fulfill existing orders?

Karn Budhiraj

First of all, I want to thank all the Cybertruck reservation holders for their patience. The reservation to order conversion rates so far has been very, very encouraging. If the trend continues as it very likely to be, we will soon sold out all the builds in 2024. And also, we have new orders come in after the launch. The auto numbers keep growing. So we're now all hands on deck, focused on ramping so we can fulfill all the demands in a reduced wait time.

Elon Musk

Yeah. It's important to emphasize that this is very much a production-constrained situation, not a demand-constrained situation. And obviously, we could dramatically raise the price, but that doesn't feel right to us to sort of gouge people for early delivery. So -- but really, the demand is off the hook. As long as the price is affordable, I mean, I see us ultimately delivering on the order of 0.25 million, something like 0.25 million Cybertrucks a year in North America, maybe more. But give or take roughly on that time frame, and it sure is a head-turner.

Vaibhav Taneja

Definitely is. Anywhere you go, people look at you, they give you thumbs up.

Elon Musk

Yeah. It's like finally, the future. Looks like the future. It's just -- for the other trucks on the road there, which -- there's some very good trucks on the road, but if you were to switch out the brand name, you wouldn't hardly know which company made them, but you definitely would know the Cybertruck. That's our best product ever.

Martin Viecha

All right. Thank you. The next question is, can we get Tesla Energy volumes reported in the production and delivery release?

Karn Budhiraj

Yeah. We will strive to do so starting from this quarter. And just a brief update from the business perspective. Megapack continues to see strong demand signals globally, driving consistent growth trajectory through '24 and '25. We want to thank all of our partners who've put their trust in the Megapack team to execute on critical infrastructure around the world. And I would like to personally thank the Megapack engineering and production teams for their strong 2023 execution. Lathrop continues to ramp through 2024 with the operation of a second final assembly line to double capacity from 20 gigawatt to 40 gigawatt hours by the end of the year.

Martin Viecha

Thank you. And the last investor question is from Siddharth, what are the preliminary results and return on investment of your ads and education campaign? Given that many people still lack awareness that Tesla average price is less than the average non-luxury car price of $45,000, will you expand educational ads?

Unidentified Company Representative

As Elon mentioned, the ultimate solution to increase EV adoption is really address the affordability issue. But at the same time, we do aware there's awareness issue as well. So in Q4, we ran a series of digital campaigns, very targeted digital campaigns across different geos and different channel. The target of these tests is really just to drive awareness and ultimately measure the return of investment on those digital channels. The messaging we're driving has really focused on our product and also try to address some of the misconception of the EV, such as safety, affordability. And one particular awareness campaign we run in Texas will reach the audience, about 10 million unique viewers, and generated close to 0.5 million visits to our website. A large number of these viewers are first-time visitors to our website. The traffic through these digital channels actually behaved very similar to those organic traffic come to our website. So going forward, we're just going to keep exploring different channels and doing our trials to get a better understanding of this effectiveness of these digital campaigns.

Vaibhav Taneja

But I would also like to caution that we'll be very careful that we don't want to overspend on this side. We want to make sure people are aware. But that's where we'll keep tweaking our methodology about how and where we spend the money. Because we understand the importance of increasing awareness, but at the same token, we don't want to spend a lot of money on just creating awareness.

Elon Musk

Yeah. I mean, there are some geographies where our market share is remarkably low. Like Japan, for example. Now, we also need to make sure that we have superchargers in the right locations and the service centers are there, and the product works well in Japan. But Japan is the third largest car market in the world of any country, and we should at least have a market share proportionate to, say, other non-Japanese car makers like Mercedes or BMW, which we do not currently have. So I think that's a case -- when I talk to friends of mine in Japan, they're like -- there is quite a lack of awareness of Tesla. So that's a case where we definitely need to increase awareness in countries and regions where there is, yeah, not that much awareness.

Martin Viecha

Thank you. Let's go to analyst questions. The first question comes from Pierre Ferragu from New Street Research. Pierre, go ahead, please. Feel free to unmute. Pierre, can you hear us?

Pierre Ferragu

Okay. Wow. It's really tough to find the unmute button on Team's guide. I'm sorry for being late. So, yes, my question would on the cost reduction, you've talked about it already a lot. And if I look at it, over the last like, five, six quarters, on average, the COGS per car has been coming down, like, more than 2% sequentially, on average. So that means you are, like, on a trajectory of COGS per car going down 10% a year. So that's probably, like, unheard of in the auto industry. I don't think any car manufacturer ever achieved that. But that's very mundane, and it's a good performance, but it's a very normal performance in a lot of other manufacturing industry, like microelectronics or consumer electronics. And so I'd love to hear your thoughts about whether you consider yourself closer to the latter to, like, a microeconomics business where you have this ability to actually always improve costs. You have more control on how things are pulled together into your cars, and you see yourself sustainably taking costs down with that kind of pace or do you think your ability to take down cost is actually going to become more like in line with the rest in the industry over time?

Vaibhav Taneja

Yeah. I think I covered this in a pretty lengthy detail, even in my opening remarks and in a previous question. But to just further clarify, we are constantly looking for what we can do to reduce cost. Like I said, it's a game of pennies. We've talked about it before as well. And the team is constantly going and checking, where can we reduce the cost further. And do I believe that we will have the same pace which you've seen over the past few years? Probably not, because remember, we were coming out with a period wherein commodity prices were rising, so then we did see benefits coming from that. So those are more or less taken care of. But there is more which we're still chasing. And I would say a big kudos goes to the team out here at Tesla, both the engineering team as well as the supply chain team, because every time we give them a challenge, they go gangbusters to try and figure out whatever they can to take out further cost. But yes, I would -- like I said, I would want to caution that do not project the previous cost reduction at the same pace completely in the future, because with our current platform, we are getting to a place wherein there are limitations.

Karn Budhiraj

Yeah. The increased scale also sort of helps us there. As we introduce new products, we have the opportunity to go renegotiate existing suppliers for better pricing. We're looking at every penny, like Vaibhav and Elon mentioned. Just to give you an example, our inbound logistics cost has come down by 22% year-over-year. And this is because of optimization on using returnable packaging as opposed to cardboard, which is even better for the environment, optimizing trucking routes, negotiating better pricing with shipping companies, with trucking companies, going with full truckloads and just doing that, sort of. The bigger we become, the more we put thought into these things and the more efficient we become as a result of it. So those work streams are going to continue.

Unidentified Company Representative

And we are also getting into the tiers of supply chain to see if there are opportunities, getting into the tier 2, tier 3, tier 4 levels, and then negotiate those pricing as well to get more efficiency out of the system.

Karn Budhiraj

And then on the design side, we're not static, right, like, especially in areas where the technology is still improving rapidly. Power electronics is a great example. We continue to bring improvements there that are like fundamentals, sort of driven from the device up, that result in cost reductions, generation over generation. And they don't only go into the new vehicles, they come to the old vehicles as well. So that's closer to what you were talking about with the microelectronic space. Some of that exists in the vehicle.

Lars Moravy

Yeah. Certainly our car is more computer than car in many ways and has a lot of new tech over the last 100 years of automotive production that everyone's trying to scrape pennies from.

Elon Musk

We have a crazy amount of compute in our cars compared to anyone else. It's like orders of magnitude.

Karn Budhiraj

And we get to ride that down, right?

Elon Musk

1,000 times more. Some nutty number.

Karn Budhiraj

I mean, if I just look at the main microcontroller that makes the motor truck go, for example, when I think about what it costs when we stuck it in a roadster in 2006, it costs now. There's no comparison. So we've definitely been riding that electronics cost wave.

Elon Musk

Yeah.

Lars Moravy

And then even on the like non -- what you call traditional vehicle side, we do things that no other automakers do to bring cost down through breaking down the way structures are built and the way we put our cars together. And I think that mindset that we have is very much closer to the microprocessor or power electronics industry than the automotive industry.

Martin Viecha

Thank you. Pierre, do you have a follow-up?

Pierre Ferragu

Great. Yes, a quick one. You mentioned this phase in which you are between two big growth periods. I'd love to hear you about what you consider the size of your addressable market. With the portfolio you have today, like the three, the Y, the X, and the S, what's your estimate of your addressable market? You're shipping like, probably about like a 2 million unit run rate today and given the price points of these cars, what kind of market share of what you address with these cars do you think you've already achieved today?

Elon Musk

I don't know, if anybody -- I actually don't think we have a firm idea of this. That's hard to say exactly.

Vaibhav Taneja

Yeah. This -- I won't say there's -- I mean, one way to think about it is look at the automotive industry as well. EVs still contribute a very small market share. So, yes, our goal is to try and take as much market share out of that pie. But do I have a specific number to give you? I don't think we can say that with certainty.

Andrew Baglino

And it's a growing pie as well.

Vaibhav Taneja

Exactly

Andrew Baglino

It's like its 9% today, but it could be 20% in a couple of years or in the future.

Elon Musk

Yeah.

Andrew Baglino

Certainly, like the way we've looked at it, and we've always said this, it's not about how many EVs we sell. It's how many great cars you can sell, how many vehicles you can sell. And that market is 100 million a year, and we're barely 2% of that. I still think there's 98% more to get.

Elon Musk

I mean, it's worth noting that if you look at, say, the average selling price of the other top-selling vehicles in the world, they are much lower priced than a Model Y.

Andrew Baglino

Yeah.

Elon Musk

So like Toyota RAV4.

Andrew Baglino

Corolla.

Elon Musk

Corolla, Honda Civic, that kind of thing. They're much lower priced than ours. So people are really stretching their wallets to be able to afford a Tesla. It's quite a difficult thing for them to do, and remarkable that it's the best-selling car in unit volume, despite being much more expensive than other high-volume cars.

Martin Viecha

Thank you. Let's go to the next analyst. The next question comes from Adam Jonas from Morgan Stanley.

Adam Jonas

Hey, everybody. So I can't wait to see the Optimus lab. I'm sure everybody on this call feels the same way. Your last AI Day, Elon, was September 2022. Can we expect a Tesla AI Day this year? It seems like a lot has changed in that realm. And is this year the time?

Elon Musk

Yeah, it's a good question. We have found that when we do these AI Days, some of our competitors literally look at what we do on a frame-by-frame basis.

Adam Jonas

They do.

Elon Musk

And then we find these things being copied.

Karn Budhiraj

Same thing with Battery Day.

Elon Musk

Same thing with Battery Day. So we have to be a little cautious about revealing the exact recipe of the secret sauce. But I think some kind of update would be good to do. I'll talk it over with the team, and yeah, I think we might do something later this year. Our main goal with these AI Day things is recruiting and to sort of change the perception of Tesla as people thinking of Tesla as a car company when they should be thinking of Tesla as an AI robotics company.

Adam Jonas

Maybe as a follow-up. Elon, I'd love your thoughts on the topic of China-based OEMs expanding into Western markets. As the China market kind of gets saturated and there's a tremendous growth in the supply, how much success should Tesla investors allow for this competition to achieve in Western markets? And can you envision a scenario where Tesla could partner with a Chinese OEM to help accelerate sustainable transport in markets like Europe and the United States? Thanks.

Elon Musk

Well, our observation is generally that the Chinese car companies are the most competitive car companies in the world. So I think they will have significant success outside of China depending on what kind of tariffs or trade barriers are established. Frankly, I think if there are not trade barriers established, they will pretty much demolish most other car companies in the world. So they're extremely good. We don't see an obvious opportunity to partner. Certainly, we're happy to, except on the supercharger front. We're obviously happy to give any electric car company access to our supercharger network. We're also happy to license full self-driving, perhaps license other technologies, and anything that could be helpful in advancing the sustainable energy revolution.

Martin Viecha

Thank you. And the next question comes from Dan Levy from Barclays.

Dan Levy

Hi. Good evening. Thank you for taking the questions. First, I'm wondering if you can just walk through some of the gating factors required to unlock your next-gen platform. You talked about a number of cost initiatives back at the Investor Day a year ago, things in manufacturing and powertrain. Maybe you can just give us a sense of where these initiatives stand. And do you believe -- we know that there's a number of new features and technologies in Cybertruck, things like 48 volts architecture, really employing your 4680 batteries. To what extent do you think Cybertruck is really a proving ground for the next-gen platform and is really going to be a gating factor to unlocking the cost reductions needed for the next-gen platform?

Lars Moravy

Yeah, I don't think that anything on Cybertruck should be considered gating for the next-gen platform. We're obviously doing a lot of manufacturing innovation, as Elon said, for a next-generation vehicle. When you do something at that scale, you have to prove it out. You don't just throw it on the line and just build it. So we're going through those validation phases for all those new manufacturing technologies now. Sure, 48 volts was definitely something we wanted to carry forward, and it's something we hope the industry adopts as well. We're also open to partnering.

Elon Musk

Yeah. 48 volts.

Lars Moravy

On that if everyone wants to do that.

Elon Musk

Certainly. Man, the people that really know that this is like the inside baseball thing. But man, 48, it's so high time that the water industry moved from the 12 -- the random number of 12 volts to 48 volts.

Lars Moravy

Random number of 48 volts.

Elon Musk

Yeah. Well, it's much less random.

Lars Moravy

Slightly less random based on human injury, but...

Elon Musk

I mean dramatically reduces the amount of copper you need in the vehicle and also moving to sort of higher bandwidth communications, sort of ethernet level communications versus CAN Bus, which is pretty...

Lars Moravy

Pretty slow.

Elon Musk

Pretty slow. So it's really just bringing cars to...

Lars Moravy

The 21st century.

Elon Musk

Yeah, pretty much.

Lars Moravy

So, certainly like...

Elon Musk

It's not exact -- it's like normal for a laptop. Yeah.

Lars Moravy

Certainly bringing that like is an evolution in our architectures of vehicles, but it's not gating by any means. The gating work is just to finish the design and manufacturing of the car, test them out and get them going.

Karn Budhiraj

Yeah, programs and execution mode, right?

Lars Moravy

Yeah.

Karn Budhiraj

So it's talking about like, tooling lead time, manufacturing equipment lead time, factory lead time, and executing those programs.

Elon Musk

There's a lot of specialized machines that make the machine for a next-gen vehicle. So these are not machines you can just order from anyone. You have to design a machine that has never existed to build a car in a way that has never existed.

Karn Budhiraj

Yeah. So you don't just have like a design validation phase, but you have an equipment design validation phase as well.

Elon Musk

It does make it very hard to copy us because you have to copy the machine that makes the machine that makes the machine.

Lars Moravy

Talk about tiers.

Elon Musk

Yeah, exactly. Manufacturing exception. So I do think it's quite a powerful sustainable advantage because there just is no place to go to order the machines that make our next-gen car that don't exist.

Dan Levy

Great. Thank you. As a follow-up, your release does not mention Dojo. So if you could just provide us an update on where Dojo stands and at what point you expect Dojo to be a resource in improving FSD or do you think that you now have sufficient supply of Nvidia GPUs needed for the training of the system?

Elon Musk

I mean, the AI hardware question is, that is a deep one. So we're obviously hedging our bets here with significant orders of Nvidia GPUs. Or GPU is the wrong word. There really needs to be -- there's no -- it doesn't -- you can't produce graphics, so that's what. It's not a graphics processing unit. Neural net processing unit or something like that. Yeah. GPU is a funny word, like Vestigial. A lot of our progress in self-driving is training limited, something that's important with training, it's much like a human. The more effort you put into training, the less effort you need in inference. So just like a person, if you train in a subject, sort of classic 10,000 hours, the less mental effort it takes to do something. If you remember when you first started to drive, how much of your mental capacity it took to drive. It was -- you had to be focused completely on driving. Then after you've been driving for many years, it only takes a little bit of your mind to drive and you can think about other things and still drive safely. So the more training you do, the more efficient it is at the inference level. So we do need a lot of training. And we're pursuing the dual path of Nvidia and Dojo. But I would think of Dojo as a long shot. It's a long shot worth taking because the payoff is potentially very high. But it's not something that is a high probability. It's not like a sure thing at all. It's a high-risk, high-payoff program. Dojo is working, and it is doing training jobs, and we are scaling it up, and we have plans for Dojo 1.5, Dojo 2, Dojo 3, and whatnot. So I think it's got potential, but I can't emphasize enough. High risk, high payoff. So I think it still makes sense given the -- even if it's a low probability of success -- I'm laboring the subject. It's a very interesting program. It has the potential for something special. There's also our inference hardware in the car. So we're now on what's called Hardware 4, but it's actually Version 2 of the Tesla-designed AI inference chip. And we're about to complete design of -- the terminology is a bit confusing. We're about to complete design of Hardware 5, which is actually Version 3 of the Tesla-designed chip. Because the Version 1 was Mobileye, Version 2 was Nvidia, and then Version 3 was Tesla. And we're making gigantic improvements from Hardware 3 to Hardware 4 to Hardware 5. I mean, there's a potentially interesting play where when cars are not in use in the future that the in-car computer can do generalized AI tasks, can run a sort of GPT-4 or GPT-3 or something like that. If you've got tens of millions of vehicles out there, even in a robotaxi scenario where they're in heavy use, maybe they're used 50 out of 168 hours, that still leaves well over 100 hours of time available -- of compute hours. It's possible with the right architectural decisions that Tesla may in the future have more compute than everyone else combined.

Martin Viecha

Thank you. The next question comes from Colin Langan from Wells Fargo.

Colin Langan

Great. Thanks for taking my questions. As we're thinking about going into 2024, the press release talks about hitting 36,000 or slightly above in Q4. And the comments in the release talk about approaching the natural limits. And it sounds like you're continuing to try to whittle that away, but that sort of implies there's not much left. In addition, you have the hourly wage increase. I guess we'll add to that into next year. And I thought you said raw material costs are kind or -- that benefit is sort of almost played out. So is there an opportunity to continue to go below the 36,000, or should we kind of be modeling that it kind of stays at this level into '24?

Vaibhav Taneja

We are definitely aware of the cost increases which are coming through because of the wage increases. But like I said, we keep looking at other cost opportunities and try and figure out where else can we cut down. So there is definitely more opportunity to bring down costs further. I won't specifically guide to a number which we will try and get to, but there's definitely more opportunity there.

Andrew Baglino

Yeah. We're chasing lots of cost opportunities on the design side still for 2024, north of eight figures is what we're just in my organization, and Lars has got a bunch. And then from a commodities perspective, it's such a long cycle time through the whole material supply chain that even with what we've already seen to this point...

Vaibhav Taneja

There's more to come.

Andrew Baglino

There's more to come on commodities reductions.

Lars Moravy

And there's still some tailwind left on the commodities.

Andrew Baglino

That's what I mean.

Lars Moravy

Aluminum and steel.

Andrew Baglino

Yeah and battery material.

Elon Musk

It boggles my mind to think that if we make a 1% improvement in costs, that's $1 billion. So it's like, on average, if we reduce the cost by one penny, $1 billion.

Andrew Baglino

What?

Elon Musk

And we started off that long ago that we were only making like 10 cars a week. And yeah, so where does it lead ultimately? With good execution, like I said, it's not a slam dunk, but if we execute very well, I think Tesla could be the most valuable company in the world.

Martin Viecha

Thank you, Colin. Do you have a follow-up question?

Colin Langan

Yeah. Just a quick follow-up. In the commentary, you mentioned the taxes would go to the S&P 500 level. I think you've been trending slightly below 10%. S&P, I think, is typically 25%-ish. Is that going to -- should we expect that to jump right up next year when we're modeling next year or would it be like a gradual change over the next few years and any cash impact from that tax change as well that we should be considering?

Vaibhav Taneja

Yeah. So there's no impact on cash taxes from the release of the valuation amounts, which I spoke about. What it does is, it's how you account for taxes on your books? So it's basically an accounting change wherein there are certain jurisdictions because we had enough NOLs, etc., wherein we didn't have to accrue book taxes. Now that the valuation allowance has been released and we have recognized deferred tax assets on the books, that means your tax rate immediately goes up.

Martin Viecha

Okay. I think that's all the time we have for today. Thank you so much for all of your questions, and we'll speak to you again in three months. Thank you. Bye-bye.

Elon Musk

Thank you.