

<Minutes from Media Briefing on Battery EV Strategies on December 14, Question and Answer>

Q. Regarding the battery electric vehicles (BEV) sales volume of 3.5 million by 2030, which is a large upward revision from the 2 million target you had before, Toyota was seen to be conservative toward battery electric vehicles. What is the reason for this large upward revision?

Akio Toyoda:

Firstly, the 2 million units of zero emission vehicles is a significant amount. Most Chinese automobile companies have roughly the same. To that, we are adding another 1.5 million to make it 3.5 million, which is equivalent to the volume of Daimler, PSA, and Suzuki Motors. That is the scope in discussion now. I hope it is clear that what we are announcing today is a significant amount.

Regardless of the powertrain, whether it is a BEV or an FCEV, what matters in achieving carbon neutrality is the energy that the vehicle uses. Whether the vehicles are carbon-reducing vehicles or carbon-neutral vehicles will rely on the energy situation in each region.

At COP26 this year, various countries' policies became clear through the process. As that happened, we realized that we could achieve a higher level of carbon-neutral vehicles sales than anticipated. We came up with this revised figure after that discussion and plan review.

Masahiko Maeda:

As President Toyoda just described, the revision came as we have seen the rapid changes in the market, such as the recent executive order in the U. S. Against this backdrop, we discussed a possible volume that we believe we would be prepared to deliver, and are now making efforts to meet this guideline in development as well. As we said in our previous financial results announcements, this volume is a guideline and one which we will use for the necessary preparations for development, procurement, and other investments as needed. I hope this clarifies the background for this revised figure we are announcing today.

Koji Sato:

Let me add a little bit from the Lexus side. This time, we announced that Lexus will anticipate 1 million units of BEV sales by 2030. Back in March, Lexus announced its vehicle electrification initiatives called "Lexus Electrified", and committed to accelerating wide-spread sales of Lexus electrified vehicles by 2025.

As you heard in the presentation, as the world changes rapidly, customer expectations toward advanced technologies and BEVs have become higher and higher, especially in the luxury segment. While the energy mix varies in each region, we announced this goal in order to be able to flexibly meet changing customer preferences.

As Maeda explained, this is about setting a guideline. Once we set this guideline, we will be able to take action and examine the issues. By understanding those issues, we will be able to accelerate our efforts with a clear purpose. We would like you to understand that element of the background as well.

Q. What level of increased investment do you have in mind for achieving the 3.5 million BEV target?

Masahiko Maeda:

At the time of our previous briefing on batteries in September, we announced an investment of 1.5 trillion yen, and as President Toyoda mentioned in his presentation, we will be increasing this number to 2 trillion yen. With the investment required for vehicle development to achieve the 3.5 million BEV target, the total will be 4 trillion yen.

In addition, investment for all other electrified batteries, including hybrid electric vehicles, plug-in hybrid electric vehicles, and fuel cell electric vehicles, comes to another 4 trillion yen, so the total is 8 trillion yen, based on the guideline we have announced.

We are not saying that we will use all of that total. We will try to make each investment more efficient and effective by considering how much we can reduce the basic unit of each investment, and how much the lead time can be shortened. It is especially important to have lead times shortened as much as possible for us to be able to adapt to changes. That is an area that we are especially careful about.

Q. Going forward, are you going to focus more on battery EVs amid a variety of other electrified vehicles? Or has your strategy of BEVs being just one part of a full lineup of electrified vehicles not changed?

Akio Toyoda:

We have made utmost efforts toward achieving carbon neutrality, and we will continue to do so going forward. Toyota is a global company with a full lineup of products. We have seen changes in the energy situation in each country, and the way customers use vehicles is now more diversified. It is the customers, not us at Toyota, who choose which options to use. What we will do is have a wider range of available options, and to make steady efforts across that range.

Some people say that Toyota is not interested in BEVs, but our initial baseline of 2 million BEVs by 2030 was a huge volume. However, since we have a total volume of about 10 million vehicle sales, the BEV ratio may not look as high. As an absolute number, however, 2 million is huge. Now, we are announcing 3.5 million as the new baseline. By setting this number as a guideline and by keeping all of our options available for our customers, we want to be prepared to meet customer and market expectations and

preferences more quickly, and more flexibly.

In this way, I believe that we will be able to enhance our competitiveness, and that approach will enable us to adapt to market changes in a timely manner. That is how we will be able to survive. Rather than making certain choices our priorities, we will put our continuous efforts in all of our options.

Just because I drive a hydrogen-powered vehicle, it does not mean that I am prioritizing it over others. All of our employees, suppliers, affiliated companies, and the 5.5 million people working in the automobile industry, have made serious efforts in Japan in achieving carbon neutrality. And for us Toyota, we do business and operate worldwide, and the full lineup of these products is key to our global operation. I hope you see that we are putting serious effort into this approach.

Simon Humphries:

I would like to just add a little bit to Akio's comment. I think the future is of course very difficult to understand for everyone. But within that future, one thing we can probably say for sure is that each region and all of society is becoming more diverse. So the next step for Toyota is to build on our strengths and understanding what customers really want and within that diversity we see customers more confident with their choices especially with regard to product and design.

What we need to do now with the biggest hurdle or challenge is to increase customer acceptability in carbon neutral base design. In principle, all people agree this kind of direction is a necessity, but whether or not they are willing to accept this in practice is the next big hurdle. For example, using reusable fabric, reusable materials, all these kinds of factors will have to change the way of customer thinking. Then we can start to talk about achieving the numbers we have talked about.

Koji Sato:

We are working on two areas to help maintain this full-lineup strategy. One is making the development process more efficient. Compared to previous models, our development efficiency has been improved by 30 to 40 percent. Our efforts over the last few years in creating a high quality modular basic vehicle platform through TNGA has contributed a lot there. Now, as we expand our BEV lineup, we have our solid basic capabilities.

One other area is branding. As we have announced today, the reason Lexus is going to be leading our BEV product range is because of luxury market characteristics, and also the role of Lexus. We will clarify that role within the company, which is to be a front runner in advanced technology areas.

As for GAZOO Racing, as President Toyoda discussed regarding the hydrogen engine, we will continue to take on the challenges of achieving carbon-neutral fuels through motorsports. Toyota's strength lies in

leveraging each brand's role and strength as we explore a wide range of technologies. This is how we want to continue our full lineup strategy.

Masahiko Maeda:

I'd like to make some additional comments from the customer's perspective. For example, in the U.S., the west- and east- coasts are more ready for environmentally-friendly cars in terms of power supply and usage, including on the infrastructure side. But when you go to the mid-west or into more of the central areas, the usage environment will be different and it will be quite tough for BEVs to be widely available. So even in one country, there are areas where BEVs are more or less convenient. That is why we need to have a wide variety of products available, so that we can meet customer expectations.

And in Brazil, bioethanol fuel is already available in the market. Toyota offers hybrid electric vehicles that run on bioethanol. Bioethanol is cheaper than gasoline, so it is more widely chosen by customers. In a market like that, BEVs may not be what customers want. Toyota has a global operation and we have been building trust in each of these regions through our products. To keep this relationship, we need to look at the local situation, customers' usage and preferences, and as a result, we need to have a full-lineup strategy.

Q. To achieve your ambitious BEV plans, procurement of batteries appears to be the key as you announced the increase of investment in batteries from 1.5 trillion yen to 2 trillion yen. Recently, there was also an announcement to build a battery plant in North Carolina plants. You have PEVE and PPES in your group, and you also have other partners. What is your approach in the battery procurement?

Masahiko Maeda:

Basically, we would like to promote local production and local consumption, based on logistics fees and so forth, but regarding how to procure batteries at what level of volumes, we have yet to see the clear picture. Basically, we have to reduce each single manufacturing line's basic unit cost to maintain competitiveness. Based on that, we will investigate the optimum procurement plan, such as when we need to start local production, together with our partners depending on the region and situation. We will closely monitor the situation of regulations and taxes, as they may change moving forward.

As for securing materials, Toyota Tsusho has had a long history of securing natural resources, and we estimate that we have sufficient materials to last until 2030 thanks to their long-term effort. We can choose whether to produce batteries in-house or procure them from partners, and our stance is to make the optimal choice for each region to achieve local production and local consumption, while securing the necessary materials.

Q. Your previous plan was to have 200 GWh of battery production capacity by 2030. What is the capacity required for the revised 3.5 million BEV sales?

Masahiko Maeda:

We anticipate it will be around 280 GWh based on the new guideline.

Q. I was quite surprised with today's announcement, but what I want to know more is about President Toyota's true feelings about BEVs. I think you have a lot of aspirations for hydrogen and hybrids, and your true thoughts have been made public on many occasions, but for battery EVs, I think it's more like "here, we're doing it" - kind of a business-like presentation. I want to clarify this. Personally, President Toyota, do you like BEVs or not? If it's difficult to respond as the president of the company, you can respond as driver Morizo.

Akio Toyota:

This is a great question. If I had to make an answer, I was not interested in Toyota's past BEVs, but I am getting interested in the BEVs that we are now developing for the future.

The first EV that I drove was a RAV4 EV. But at that time, my driving skills were not so good, so the impression I had at the time is probably not worth sharing here. After improving my driving skills, though, I don't remember what year, but I test-drove a battery electric Toyota 86 for the first time here at MEGA WEB. The comment that I gave after my test drive was that "it's an electric vehicle."

We have the Lexus brand and the Toyota brand, and we are an OEM pursuing distinctiveness in each brand. But when it comes to BEVs, a car becomes more like a commodity. So that was the past. Like you said, of course I supported BEVs in terms of business, but the question was whether I was supporting them as driver Morizo.

I'm a master driver, and in the training I had gone through back in the days, I always drove an FR vehicle. But recently, I now participate in rally races and the Super Taikyu races. In these motorsports, I now drive a four-wheel drive vehicle as well. My sensibility as a master driver has changed with these vehicles. I now think that electric motors have higher efficiency than gasoline-only-powered vehicles. If we have a good four-wheel drive platform, it can become an FF car or an FR vehicle through control technology. So, with that kind of control technology, I think Morizo will be able to drive fast and safe on any circuit.

Nori-san (rally driver Norihiko Katsuta) has won the All-Japan Rally Championships in the past. The drivers of ROOKIE Racing are very active in motorsports at various circuits. We also have professional drivers, and those driving skills reflected in our vehicles to make them safer and more fun-to-drive. I have that expectations. And at the same time, this platform has enabled us to make vehicles that allow amateur

drivers like me to enjoy driving on various roads, however rough, whether it's a mountainous road or snowy road or whatever. This is a big change in our company.

Control technology plays a key role there, but it alone can't push major improvements. If we try to create driving flavor only through control technology, it's like adding crispy tempura to overcooked noodles. But over the past several years, starting with our TNGA initiatives, we have made steady improvements in the vehicles' basic frame, chassis and body rigidity, under the banner of "let's make ever-better cars." We also opened the Shimoyama proving ground and we are now testing and developing cars under these tough conditions.

With this environment, I think we are now at a point where we can develop safer and faster vehicles with more fun-to-drive aspects. I look forward to developing such BEVs as well moving forward. That's why it's not just a business matter anymore. Even as driver Morizo, I have strong expectations and it will be very interesting. Even when autonomous driving vehicles become more widely available, we will continue to make serious efforts in BEVs and other powertrains such as FCEVs, HEVs, and gasoline-only vehicles. I'm still quite serious about them as Morizo too. We're working with our colleagues and partners very seriously in all of these fields. We want to provide customers with vehicles that can make them happy, and that's why we have a full-lineup strategy.

Q. The bZ4X will be launched in Japan next year. Do you have plans to introduce fast chargers at your dealers across Japan?

Masahiko Maeda:

We do have a plan, but it may take longer. The year 2025 would be the target when all of our dealers in Japan will have fast chargers. I believe charging infrastructure is important to our customers. But on the other hand, in Japan, unfortunately we're seeing the declining number of chargers installed. I don't know whether that is because we are in the transition period, but we'll certainly make sure to provide our customers with convenient environment in driving our BEVs. We will make serious efforts in this area too.

Akio Toyoda:

Regarding charging equipment, this is an area where different parties must collaborate and cooperate. For BEVs and FCEVs, some of the OEMs may establish infrastructure on their own, but that infrastructure should be accessible to all other customers who drive vehicles of other OEMs. Toyota would like to urge related parties to realize that. When it comes to infrastructure, there's a limit to what each OEM can do to realize the sufficient convenience for customers.

Of course, we will try to do what we can do. Regarding the regions where Lexus aims to achieve 100% BEV sales, in North America, there are 1,800 dealers, 2,900 in Europe, 1,700 in China, and 5,000 in Japan.

I believe it is important to utilize these locations, and make such infrastructure open and available to non-Toyota owners.

Q. I was wondering if you could help me and the rest of my colleagues understand what exactly is the message you're trying to send today? On the one hand you say you are going to sell as many EVs as you can of 3.5 million. But, on the other hand you want to make sure that we know that you're serious about zero emissions. As the largest carmaker in the world, why are you only targeting 35% of your current volume? Why not go for 100% or 50% as many of your competitors have done now? Why is 3.5 million sufficient in your mind?

Akio Toyoda

We are going to reduce carbon emissions as much as possible with our carbon-neutral vehicles. With a baseline toward 2030, we want to increase our carbon-neutral vehicles. This is our message. The energy situations in each country have had a big impact on the path to carbon neutrality. That is the reality. I hope you understand that it is something Toyota cannot control. If there is no sufficient energy and charging infrastructure, expanding our BEVs to such market will result in bringing inconvenience to customers. We want to avoid that.

When we look at the global market, it is a diversified market that we are dealing with. Also, the best solution for the average person will not necessarily be the best solution for everyone. Therefore, as we are in an uncharted era with lots of uncertainty about the future, we want to take a diversified approach. That is why we have worked hard to maintain our full lineup. We want to and will take on this challenge together with our suppliers, affiliated companies, and partners.

Koji Sato:

If I may add some comments regarding carbon neutrality, it's very closely tied with the energy security issue. The energy situation of each region and the way the cars are used by the customers and their needs must all be taken into consideration to strike the best balance. Take, for example energy, you have to produce it, transport it, and use it, so we have to think from a life-cycle perspective. The car usage environment is greatly different depending on the regions. In the U.S. or Europe, people drive for long distances whereas in Japan, the average driving range is not that long.

That difference will have a different impact on the using side of the life cycle. With these points in mind, we have to look at the overall perspective and find the best mix. If there is a sign that we have to change more, then we have been building up our capabilities to deal with the changes in an agile, flexible way. While monitoring the situation, we continue to have a strong and strategic will as well as passion for the future.

Masahiko Maeda:

I think we need to take a look at which market is most advanced with BEV introduction. For example, in Norway, 60 to 70% of their passenger car market is already BEVs. This is because BEVs enjoy preferable treatments such as in taxation, free parking, and free tolling. As President Toyoda said, BEVs are convenient to users there. However, these taxation and rules are not something we can control, so I think we need to take a careful look at the reasons why BEVs are widely available and chosen by customers in certain market.

We have made our commitment in BEVs clearer, and going forward, we need to closely watch the situations that customers are in and the energy situations. I think we move forward step by step while doing so. Therefore, we need to deal with the changes that we will face flexibly in an agile way. It's very important for us now to prepare for the changes, by shortening the lead time as much as possible.

Q. As President Toyoda has said many times, carbon neutrality is related to an employment issue. 3.5 million is a new standard that you have for 2030. The suppliers are certainly watching your announcements very closely. There are things Toyota can do, and there are other things Toyota cannot do to support them. I would like you to revisit your thoughts about employment.

Akio Toyoda:

First of all, it is the market and customers who decide which carbon-neutral options to choose. This is the premise here. The numbers related to carbon neutrality that we have heard so far are goals in 2040 or 2050. We don't want to be a company that appeals a target but doesn't care to achieve it when the announcement is done.

What we are showing and announcing today is a bit more in the near term. For example, the cars that you are looking at right now, many of them will be launched into the market very soon. Running up to 2030, these things we present today will be a good tool to start discussions and take action with various stakeholders while being able to imagine more what the next 8 years will be like.

Like we have posted guidelines (of sales forecast) in every financial quarter under the COVID-19 pandemic, by presenting a guideline in the product planning area, we will be able to examine potential impact to our suppliers or our production plants.

As the chairman of JAMA (Japan Automobile Manufacturers Association), I have warned that 1 million jobs out of 5.5 million people in the automotive industry would be lost if all new car sales become 100% BEVs in Japan.

At that time, different companies came out with some vague target numbers and not any specific figures

and road maps to achieve them. That's why I warned that it would lead to an employment issue, but now recently, we have seen more concrete plans of the near-term future from different OEMs. Now as Toyota, we're also coming up with very concrete plans including the models to be launched. We'll have a renewed discussion based on this.

The automotive industry comprises of 75% of the components procured from suppliers and there are tier one, tier two and tier three suppliers supporting the industry. If we all lean toward BEVs just because it is the trend, even if we emphasize the importance of keeping many options available, that change becomes a critical issue for suppliers who have produced engine-related parts only.

We shouldn't just say that it changed because the market chose it. I would like to make the automobile industry such that the people and companies who have been doing certain business for a long time, no matter what kind of work they do or the size of the company, will not be disappointed about their lives. I would like to make it possible for us to discuss in a more concrete way in the near future what we can do if what we have done so far is meaningful and if the market chooses that direction.

As I said in my presentation, the future is not determined by the goals presented by leaders, but by purposeful passion and action. Toward the goal for carbon neutrality in 2050, the view of the future in 2050 will change depending on how we act in the next few years, five years, and ten years.

We also want to be a company that works together to do something meaningful for the lives of those who have come before us. I hope you will understand this. The future will not suddenly jump from the present to the future, but the future will be created by the accumulation of the present and the past. We hope that you will allow us to leave many options open in this process. It is not true that we are not fully committed because it's not 100%, I want you to take a look at the volume. We hope you will understand that we would very much like to continue our work in this industry.

Q. I'd like to ask about the cost, so comparing with the same size gasoline vehicle, how close will the selling price be, or when is the timing that it will be lower than the current vehicles? I think the cost of EVs will be a big bottleneck, so what is the cost plan for Toyota? In the past, you said the battery cost for EVs will be halved by 2030, but for the total vehicle price, how are you going to reduce that?

Mashiko Maeda:

Cost reduction I think is really something that we have to steadily work on step by step. That's the reality, and power consumption efficiency needs to be increased, then we can reduce the usage of power and that will reduce the battery cost.

For example, the approach that we have acquired through our hybrid experience is that the car that is in driving - maybe the brake is being dragged - and also considering how to strike a balance with the feeling of the driver. There is no way that we have one solution to make a big improvement. We may use the same perspective and come up with different ideas and build it up one by one. An accumulation of these efforts will be ending up in the reduction of prices maybe 5-10 years in the future.

But honestly speaking, regarding when it becomes lower than the gasoline engine vehicles, it's not easy to achieve that kind of a price level, but we are not going to give up. The OEM's responsibility to provide a reasonable and affordable vehicle that is good in quality will not change and that will be our approach.

Q. Recently, some environmental organizations have ranked Toyota at the very low end of the climate action ranking. They believe you are not fully into BEVs. For Toyota, what is the positioning of BEVs, and in addition, up until now you have been working full fledged on ICEs, and what will happen to ICEs, and their further development?

Akio Toyoda:

Each three of us should respond to the question because I'm looking forward to listening to their responses myself.

Masahiko Maeda:

In terms of ICE development, hydrogen engine has now become a reality. Now, you burn something and get energy. As an industrial manufacturer of goods, this is a technology which can be dubbed as artistic because this has enabled many consumers comfortable in high quality of life and it's a very important tool that achieved that.

As President Toyoda says, carbon is our enemy. When you burn something, if you don't get any carbon emissions, then you can still use ICEs. ICE without carbon emissions, if that becomes possible at some point in the future, we don't want to give up providing customers with convenience by offering ICEs.

Now in the Brazil market, carbon neutral bio ethanol is cheaper than gasoline. And then our hybrid electric vehicles can now run on the biofuel and make the energy use more efficient. There are such markets that exist, and we don't hear any complaints from the consumers from that market. And we are selling a sizable number of vehicles there. That is why, although the number may decrease, we want ICEs to be part of our full lineup options for carbon neutrality.

Koji Sato:

Not only BEVs, but we are selling cars with wonderful experience to our consumers. There are some

excitement from ICEs. BEVs, on the other hand, may have a different form of excitement. BEVs use electricity and motors with wonderful responsiveness with smooth acceleration and deceleration, and quietness. This is something lacking in ICEs. Customers are looking for acceleration. Motors can offer such excitement. We have been refining Lexus under such exercises, and as you have seen in the video, it took 10 years for us to come up with a BEV which can make Akio Toyoda smile a little, finally.

So, exploring new opportunities are still abound in BEVs, especially when it comes to performance. Controllability of the performance really leaves you with interesting maneuverability, and electrification technologies are very effective in doing so. So, we may be able to build cars which are more exciting, and that's the reason why we are shifting at Lexus.

Simon Humphries:

I'll keep it really short, but basically from a design perspective and from a product perspective, an EV, you know, era is really an opportunity for new experiences for the customer, and to be able to do something that's proactively fun, exciting, and at the same time, has some value toward future carbon neutrality, and this is an incredibly exciting time, that's what I think.

So, what I want to say more than anything is, sometimes it's easy to look at the rational side first, but actually the chance or the opportunities are going to come on the emotional side as well, and maybe you know, we've heard for the last 10 years or so that people have lost interest in cars and vehicles, but I think it's exactly the opposite now. I think there's an incredible potential to open up not only with the electric powertrain, but also connection through digital data, create incredible new experiences for people. That's my take on it.

Akio Toyoda:

You mentioned about the ranking by an environmental organization where they ranked Toyota at the lowest in climate action. Well, it is their take, but are we really backward looking in terms of BEVs? We are announcing 3.5 million BEVs now, with 30 models to come. Will we still be judged as backward looking in terms of BEVs? What should we do then, if that's the case?

Do we look at numbers by percentage, or the absolute numbers? Vehicles are for individual customers. One vehicle, for one customer. It's not the percentage business, it's the number of absolute numbers that we want them to use when evaluating.

Whatever the powertrain, whatever the vehicle type would be, Toyota and Lexus vehicles should continue to offer the value of fun to drive, and that's what we are determined to continue to do.

So many people have shown their interest today, and I'm extremely grateful for that. As for carbon neutrality,

we will continue to take proactive action. In a world where there is no right answer, I hope you understand our intention to approach solutions with a wide variety of options, and that we are working really hard on every option.

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