



# “Bosch Limited Q2 FY-23 Post Result Conference Call”

**November 08, 2022**



**MANAGEMENT: MR. SOUMITRA BHATTACHARYA – MANAGING DIRECTOR, BOSCH LIMITED.  
MR. GURUPRASAD MUDLAPUR - JOINT MANAGING DIRECTOR AND CHIEF TECHNOLOGY OFFICER, BOSCH LIMITED.  
MS. KARIN GILGES - CHIEF FINANCIAL OFFICER, BOSCH LIMITED.**

**MODERATOR: MR. ANNAMALAI JAYARAJ – BATLIVALA & KARANI SECURITIES INDIA PRIVATE LIMITED**

**Annamalai Jayaraj:** Bosch Limited 2Q FY22-23 Post Result Conference Call hosted by B&K Securities. I also take this opportunity to welcome the senior management team of Bosch Limited. We have with us today Mr. Soumitra Bhattacharya - Managing Director; Mr. Guruprasad Mudlapur - Joint Managing Director and Chief Technology Officer and Ms. Karin Gilges - Chief Financial Officer. At this point, all participants line will be in the listen only mode and there will be an opportunity for you to ask questions after the management presentation and opening remarks. Also may I remind you of the Safe Harbor, the company may be making some forward-looking statements that have to be understood in conjunction with the uncertainty and the risks that the company faces. Over to you sir.

**Soumitra Bhattacharya:** Thank you very much, Mr. Annamalai Jayaraj. Good afternoon colleagues, and thank you for being part of this call. At the outset, I would like to thank all of you for the excellent in person interaction that we had in August at Mumbai for our annual investor meet. Today, I will start with a brief on the macro economy policy followed by an automotive market update, and then I would like to walk you through our financials. Finally, I will end with the highlights of the quarter affecting our business.

Next slide, please. The global economy is facing significant downside risk to growth with persistent high inflation. In relation to the Indian economy, the IMF released its latest forecast of the world economy this week in which India's FY23 real GDP growth was revised downward to 6.8% from the 7.4% projected to July 22. Having said that, the domestic demand continues to be quite robust in India.

Next slide. Overall automotive market production has increased by +28% on year-on-year with the current quarter, this excludes two wheelers. However, on a low base of the quarter two of fiscal year 22. The production volumes in quarter two fiscal 23 stood robust across the segments aided by the inventory getting filled for the festive season. The passenger car segment outperformed other segments growing at +35% year-on-year volume growth supported by the somewhat easing of chip supplies for semiconductors, and the pent up festive season demand. By the way colleagues you must know that October had the highest sales for pass cars due to the festive demand. Serving this already healthy order book and thereby mitigating longer waiting periods. The two wheeler segment also witnessed a healthy +8% year-on-year growth, largely supported by the festive season and premiumization trend. The LCV segment continues to witness growth, and which was (+30%) on year-on-year while the heavy commercial vehicles or HCD segments saw a (+37%) year-on-year on a low base. However, on the ground situation is steady as fleet utilization levels are healthy and have led by an increased economic and infrastructural activities.

The customer segment also de-grew marginally by around (-2%) year-on-year of course, very high base with the OEMs building up the dealer inventory in anticipation of the strong demand which was there for the festive season. The three-wheeler is on a recovery path with shared mobility is slowly picking up. Overall automotive market production has increased by +30% quarter-on-quarter in the current quarter, this of course excludes two wheelers.

Let's have a look at the automotive market outlook for 22. In this slide, each row represents a particular segment for instance, the first row represents the pass car, followed by PCV, LCV, tractor, two-wheeler, three-wheeler segments respectively. The first column represents the 2018 production volume which is considered as one of the best years in the Indian automotive industry which was at its peak. So, by the way, we have shown 2018 but you can also tangentially read it as 2018/19, but the numbers here indicated are the calibrate. Second column represents 2020 production volumes, and the third column represents 21 production volume and the fourth column gives you an outlook for the 2022 calendar year. Basis this numbers we are expecting a solid year for pass car, LCV segment and very likely they will reach the 2018 peak. You can see in pass cars we set 4.3 million for the current forecast of 22 as against the 4.07 million in the year 2018.

The tractors peaked, in case of heavy commercial vehicles, two wheelers and three wheelers recovery continue however and we can see, based on differentiated situations, they are still far away from the 2018 peak. Practice peak already last year and we are expecting a minor de-growth on a very high base. Let's look at how the company has performed in the July, September 2022 quarter as compared to the July, September 21. Amidst all these aforementioned factors. Our overall revenue from operations for July, September 2022 stood at 36,616 million or 3662 crores, which is an increase of 25.5% as compared to the July, September 21. Here the automotive sales have grown by approximately 31%, largely driven by the power grid solutions, while non-automotive sales have increased by 7.5% largely led by the energy and building technology division. Overall product sales have increased by 27% primarily on account of a low base in the July, September 2021 owing to the impact of COVID ranking. Income from services mainly comprised of R&D services provided to OEMs as also our parent Bosch in Germany. While billing for R&D services was at a healthy level for the quarter, income recognized in the books based on customer SAP dates was 648 million or 64.8 crores, balance income would get recognized in subsequent quarters based on project completion dates of customers. Other operating income mainly includes income from lease rentals, facilities income and export incentives. In July September quarter of the previous financial year, we have received an installment of claim for refund of taxes under the mega projects team of the government of Maharashtra pertaining to our Nashik plant. However, other operating income for the current quarter was comparatively slightly lower.

The **Material** cost as a percentage of total revenue from operations has increased from 62.8 in July, September 21 to 64.9% July, September 22. Increase is mainly due to two reasons; one change and product mix was credit goods over the same quarter of the previous year. And second, what is happening internationally which is raw material price increase it will be increases in the prices of electronic competence. Employee cost for July, September 2021 includes reversal of employee related provisions on a like-to-like basis without the reversal of provisions employed costs in July, September 22 would have remained the same as compared to the previous year. Other expenses stood at 5781 million or 578 crores, which is 15.8% of the total revenue in July, September 22 as compared to 4757 or 476 crores, 16.3% of total revenue in July, September 21 increase is in-line with the increase in sales and also higher

spending on new business areas and one time technical access fee paid for localization of new products. Our depreciation for the current quarter is at Rs.919 million, to 0.5% of the total revenue as compared to 829 million, 2.8% of total revenue in July, September 21. Increase in depreciation is on account of capitalization of our new Spark.NXT campus and the plant machinery for localization of our new products in the current quarter. With these operating profits stood at Rs.3392 million. In July, September 2022 as compared to Rs.2747 million in July, September 2021 which is an increase of 23.5%.

Other income primarily consists of interest on fixed deposits and changes in the market value for our mutual funds which are debt based. Other income has also increased from Rs.1243 million in July 2021 to Rs.1497 million in July, September 2022 mainly on account of increase in interest income on fixed deposits and dividend received from equity shares. For the quarter ended July, September 2022 your company has posted a profit before tax or PBT of Rs.4870 million as compared to Rs.3975 million in July, September 2021. As a percentage of total revenue from operations profit before tax stood at 13.3% of total revenue in the quarter. PAT or profit after tax for the quarter ended September 2022 stood at Rs.3724 million which is 10.2% of the total revenue from operations. Profit after tax in July, September 2021 was Rs.3720 million which included tax adjustments which is a credit amounting to Rs.765 million pertaining to previous years.

We in Bosch believe that by 2030 approximately one in three new vehicles across the globe is likely to be an EV. Bosch has already geared up for this change and hence offers comprehensive offers and solutions from PC to CV at hybrids to BEV as well as FCEV or battery electric vehicles and fuel cell electric vehicle. On hydrogen our powertrain solutions division in India located inside RBIN has deep engagement with key energy sector players and OEMs for hydrogen engine business. And you will be glad to know that we have also received our first hydrogen pilot project. This includes the conversion of ICE engine, BS4 to hydrogen ICE, and the details of this will be shared with you later at the time of SOP by our OEMs. The SustainAnalytics or global ESG ratings agency, ESG stands for Environmental, Social and Governance, has again rated Bosch Limited and our scores have improved from 13.2 in 2021 to 12.8 in 2022, the lower the score, is the better. Bosch Limited currently ranks at level out of 208 within the automotive components, industries, and on 734 out of 14,794 within the global universe. We would like to thank you for your contribution as well as for your patient listening throughout this call. We will now address your queries and thank you for your questions.

**Annamalai Jayaraj:**

Thank you sir. We shall now begin with the question-answer session. The first question is from Mr. Dinesh Gandhi. Please unmute your line and ask your question.

**Dinesh Gandhi:**

My first question pertains to the CAPEX. So, first half CAPEX was close to about Rs.3.1 billion. Any indication of what kind of investments we expect in second half or for the full year FY23 and in which areas are we investing for future growth?

**Management:**

So, as I've said Dinesh that we are investing in the future both for our plant and machinery, as also we have invested for our smart campus which the Prime Minister inaugurated which is

called Spark.NXT campus. So, we have also based on this quarterly since we have capitalized it, this has also come into the books and therefore chosen the **(Inaudible) 15:37**. In relation to the CAPEX plan for 2022 they have approximately anywhere between 520 to 560 crores with that bandwidth as you know Bosch Limited over the last many, many years does between 400 to 600 crores and Bosch India does anywhere between 600 to 1800 Cr.

**Dinesh Gandhi:** Right and these 520 to 560 crores will also include investment towards PLI scheme related CAPEX right?

**Management:** Naturally, we have applied for Bosch Limited as also our other sister companies and we plan to of course apply and also go ahead for the PLI.

**Dinesh Gandhi:** Okay. And second question pertains to this hydrogen engine business award which we have got in India. So, as you indicated, this is conversion from ice to hydrogen, any indication of whether this is pilot or it's actually for commercial application and by when do we expect this to get commercialized?

**Soumitra Bhattacharya:** So, as I mentioned two things, then I'll request our CTO to talk about it, who is also handling this portfolio. We have got a pilot conversion project, the pilot conversion project will be done based on our having put up our lab, our hydrogen lab at our Adugodi campus and only on SOP by our OEMs which is our standard practice, we will give further details, but over to you Guru.

**Guruprasad Mudlapur:** Yes, thank you Soumitra. The project itself is a pilot right now. So, the first engine conversions have happened and there is proof both in terms of engine conversion, and those engines being fitted on the vehicle, that hydrogen conversion of current engines is possible. So, this is what has been done right now and based on that we have acquired a project. And we will now support the OEM to build additional vehicles before December and from then on the series project will start and the timeline is about one and a half years for series.

**Annamalai Jayaraj:** Thanks Dinesh. Next, will be from Pramod Amte, your line is unmuted you can go ahead with your question.

**Pramod Amte:** So, first is with regard to the currency movement. If I had to look at your annual report, almost 38% is your FOREX usage as proportion of net sales. Would you give a breakup in terms of what is the dollar exposure and euro exposure because both these currencies are moving in a different direction this time. So, hence, to understand the volatility impact of a currency and second, how these are passed on to the clients, do they come through easily or they are tough negotiations?

**Management:** Thank you Pramod for a very insightful and interesting question. You will be happy to know that our company over decades has a very robust #A treasury management system and #B, a very robust hedging system. And we have been doing it consistently. And of course, we follow the mark prints and then to it. So, in summary for Bosch Limited, we are pretty well secured against a huge currency fluctuation while the exchange rate changes have been, I won't say it

massive, but it has been there for example, the quarter July rate the changes were approximately 0.5% or compared to the sequential about 3% or YTD at 7%. We have both at USD and Euro thanks to our hedging policy at a pretty stable situation. And this is handled by our CFO who is also participating. The second point of yours was, how is our contractual obligations. So, we have systemic contracts with different OEMs in relation to different elements. So, these are both based on the past as well as the future. So, we do put in some of these clauses, but naturally, as you would understand they are not uniform across. So, in summary, I would say three sentences. One, India's exchange rate fluctuations have been thanks to our finance minister, not massive. Two, we have a very solid hedging policy which has allowed us not to have any major impacts, and three, are contracting with OEMs are pretty good and yes, they are slightly differentiated depending on different OEMs including the timing.

**Pramod Amte:** Sure, thanks sir. And second one is with regard to the alternative technologies. Congrats on winning this pilot project on hydrogen. Considering that EVs have taken a big spike in the festivals in recent months, any update in terms of wins or what product offerings have been accepted by the OEMs in the recent times for now?

**Management:** Nothing compared to the past that we declared Pramod.

**Annamalai Jayaraj:** Thanks Pramod. Next question is from, next caller will be Abhishek. Abhishek your line is unmuted, you can go ahead.

**Abhishek:** In the beginning of your narration, you said that there was some one-off kind of localization expenses included in other expenses, so can you please quantify and explain the nature of the expenses?

**Management:** Which one are you referring to?

**Abhishek:** Sir, there was some, is there some one-off expenses included in other expenses in this quarter sir?

**Management:** Look, Abhishek we have which we have explained multiple times. We have technical access fee at arm's length based on when we take into technology from our parent. So, unlike royalty, which is a regular payment, again which is at our arm's length that **(Inaudible) 22:56** our one-time technical access fee was paid for a localization for a few new products. And that was one-time.....

**Abhishek:** Can you please quantify that?

**Management:** It's around about 35 crores.

**Abhishek:** Okay. And sir can you please elaborate something about your BS6 order book, which you said that last time it was the highest ever so have you seen further increase in that and your outlook on the MSME sector for next year if you can from 2022 onwards?

**Management:** Yes, so let me correct your statement a little bit for us. The BS6 acquisition was declared at the time of the Auto Expo before the COVID. And at that time, I had declared if I correctly recall around 23,000 crores on the lifetime of the acquisition of the BS6 this by the way the definition of lifetime is between five and six years. I also mentioned later after the COVID the same value based on the change demand for vehicles at the COVID had come to approximately 18,000. So, you can imagine, again that 18,000 will move up because the demand has moved up, though a couple of years have also gone by. So, in summary, for #A we had already shared the BS6 stage one, not stage two in the last Auto Expo which happened physically before the COVID, that was in 2020 sometime in January or February. Now coming to what I mentioned in the last quarter was something different. Having acquired the BS6 stage one you are aware that there have been several government announcements based on which OEMs have actually started investing, whether it is **(Inaudible) 25:11** other efficient law legislations for which in the powertrain systems we've had one of the highest acquisitions in the year 2022. And therefore, based on the current legislations which have been announced, and started to be acted upon by the OEMs we are having a good quarter. So, I hope I've clarified between BS6 Stage-I and the current one.

**Annamalai Jayaraj:** Thanks. Next question from Mr. Priyaranjan. I have unmuted your line.

**Priyaranjan:** Just on the commodity cost outlook given this quarter you have highlighted that the commodity cost has been on the higher side while we are seeing the commodity and the pure commodity like steel, aluminum, et cetera is coming down. So, what's your thought on going forward the commodity cost?

**Soumitra Bhattacharya:** So, I will request our CFO to briefly speak about it, having said a sentence or two. So, the first sentence Priyaranjan is that yes, there is a slight easing of commodity cost compared to the peak. Yes, there is a slight easing also as I mentioned, on the availability of semiconductor, but please remember that those same costs on materials are nowhere near the base of when it started. So, having said that, a little bit more from our CFO, Ms. Karin Gilges.

**Karin Gilges:** Thank you very much. Yes, as mentioned already by Soumitra that the RMI what we currently see is of course based on the past and on the past increases. So, we are expecting an ease in the RMIs, but nevertheless we will see also in the upcoming month that we will not come to the base we had beforehand. In addition, if we look at our material costs, we also see that in the traded goods we have an increase in the last quarter of the credit goods which is also an influencing of our material costs. So, both effects together you can see reflected in our material cost of the current quarter.

**Soumitra Bhattacharya:** Having said that, of course Priyaranjan you must also realize that in a very systematic way we are approaching our customers for these increases which are unusual and as we know that OEMs have also on several locations this year had to increase the prices of their end product and therefore, we from our side are also systematically approaching.

**Priyaranjan:** Understood. And in your press release you have mentioned about the injector, the common rail injector being localized so, in this quarter have we seen some kind of supply from that, or we are expecting localization of that to benefit in the subsequent quarters or years?

**Karin Gilges:** Yes, I suppose you are hinting to localization of the injector and the commercial vehicle injector. It has touched the SOP of this, so we are step by step now going into the production, but it is not a onetime approach so the overall localization needs a little bit longer so we have started the production, the assembly line is already capitalized and step-by-step we are ramping up now the production at that to your questions in the current quarter. We do not see this influence the expected now in the upcoming months.

**Management:** So, if I can add a sentence, the key point Priyaranjan to notice, that we have actually got the line up and running in India. This also coincided with the Nashik plants 50 years of being in India. So, #A we are committed to the localization, it will happen step-by-step. The line is up and running as our CFO mentioned already in our plan. And **(Inaudible) 29:59** what we did is the past decades now that the line is committed in India, it's not being imported, that components will have a step-by-step.

**Priyaranjan:** Understood. And one thing on the consumer products good. So, I guess in your annual report you have also mentioned from the related party transaction, there is a lot of credit goods in that segment. And the margin for that segment has been lower compared to the automotive product segments. So, I think the first phase of localization was started from that product line, so when can we expect the benefit coming from that line?

**Management:** Which line are you referring too?

**Priyaranjan:** The power tools, the consumer goods segment, because that was the first project which in last couple of years where we have undertaken more localization, because we were doing out of traded goods.

**Management:** I got it. So, Priyaranjan there are two, three points on the power tools that you must know. The power tools production line which was at a very nascent stage was shifted about four and a half years from Bangalore, four and half to five years around from Bangalore to Chennai to the other part of area. This power tools plant for three times have been selected as the best power tools plant overall rating out of 18 power tools plant in the world, from a very low base we are nearly at 40% localization of our power tools and we are committed to increase the localization where we are now shifted to our own premise and a larger premise. In power tools we are the market leader in a very fragmented market and our commitment towards further localization is there. And our commitment also is to have a very clear commitment on "Cordless matlab Bosch" which means cordless, is Bosch and along with this, we will share in the future further and deeper commitments on power tools.

**Priyaranjan:** Understood sir. And just last question is on the electrification and your way of participating in the electrification. So, are you looking two-wheeler, three wheeler electrification also as a key

driver for Bosch or you are more inclined towards commercial vehicle and the passenger vehicle side in future, what's your thought on that?

**Management:** So, already in the two wheeler, three wheeler Bosch has clearly participated, respect to what we discussed earlier on OEMs when they announced example TVS, example Bajaj, we had already mentioned it and as we speak our two wheeler division which is located inside RBI, but caters with Bosch Limited for integrated with Bosch Limited, but also works with Bosch Limited as well as other divisions is having various electrification projects at system and component level with various two wheelers directly and also three wheelers, as you know three wheelers in India today pre COVID and post COVID is a different scenario.

**Management:** Now just to add to that in terms of your question, Bosch has a complete portfolio right from e-bikes. So, these are cycles which are electric bikes all the way up to trucks and the commercial vehicles in terms of our electrification. And we are discussing with various Indian OEMs on the complete portfolio to offer in Indian. Two wheelers as Soumitra already explained we have acquisitions and we are fighting for more projects here. Passenger cars we are discussing with key Indian OEMs and then over the coming months also we have the focus there. On commercial vehicles there is not much action on electrification, which means battery electric vehicles, but hydrogen has taken off and you have already about our pilot acquisition.

**Annamalai Jayaraj:** Thanks Priyaranjan. Next I will read a question from the question box. Are we expecting a shift in manufacturing from Europe to India in coming years in our automotive segment and what are the benefits that we can reap out of it?

**Management:** Who has asked those question?

**Annamalai Jayaraj:** Tejas Shah

**Management:** Thank you Tejas. Tejas it's a very generic question. So, I can give you a generic answer. We have mainly a strategy called local-for-local, which we have shared with you, because India is a huge domestic market. However, our export percentage of our total sales is hovering between 7% and 8% as you're aware from our annual report. This in a strategic way over the next years, we want to increase into double digit and then a healthy double digit. So, this is a part in somebody Bosch Limited will always remain focused towards our big Indian market which gives huge opportunities while seizing opportunities for export based on our products, components or systems which are available, which can be given through designated markets with a focus on increasing the current value and percentage to a healthy double digit in the midterm future.

**Annamalai Jayaraj:** Thanks sir. Next question is from Mr. Sonal Gupta. I have unmuted your line.

**Sonal Gupta:** What I really wanted to understand was we have the OBD2 norms for the BS6 coming in. So, what sort of an implication do you see of that, do we see any major shifts like we've already seen a significant shift away from diesel now there is a lot of speculation on the passenger vehicle side that this could further raise significantly the cost of diesel engines. So, just wanted to

understand that, is the technology still valid or everybody needs to move to SCR for OBD2, if you could just shed some light on that and also, for your other key categories like medium and heavy commercial vehicles do we see a major change in content for you?

**Management:**

So, first of all Sonal, if I come with your second question, and then come back to the legislation. On the heavy commercial vehicle, as I mentioned before, both on heavy commercial and like commercial Bosch has a lot of content, especially after the BS6 stage one and also as and when stage two takes on and also on the various other emission, emission related legislations for which we have also acquired projects including **(Inaudible) 30.51**. So, in summary, we see that the healthy, I had also mentioned to you that the light commercial vehicles at 6,70,000, which was a peak has already reached in the year 2022. In heavy commercial vehicles, the peak in 2018 was around 4,80,000 and it will take a little time to reach up to that, but even at 3,60,000 we are sitting pretty on our high maintain per vehicle. Now, coming to the OBD, we had already mentioned last time that the slight delay in OBD which has happened this is industry wide phenomenon, but we are prepared to deliver even after the revised OBD2 case. That should be answering your question.

**Sonal Gupta:**

Sorry, do we see a significant change in cost for the OEM as a result of this transition to OBD2 from OBD1?

**Management:**

Look Sonal, let's take the matter of cost of material including cost of upgrading based on emission, every emission change including BS4 to BS6 including prep four, to prep five including OBD has certain cost changes. However, unlike what was discussed the 2019 and 2020 that would the numbers take off, the numbers have taken off. In the year 2022 we see no change or on pass car sales and if I look at the data, the value per car, the price per car has increased significantly where the demand has not come down. So, in summary to your question, we do not see a change in the demand based on the improvement which is legislated either at the component level or at the overall vehicle.

**Guruprasad Mudlapur:**

Just to add another perspective for the OEMs, when either emission norms or safety norms, which have also greatly improved in the Indian context, keep growing continuously to the next levels for the OEMs this also opens up an opportunity to take the vehicles globally, which has not been the case earlier, and we lag behind on regulations and standards. And so, our vehicles would not really fit many markets other than maybe Africa or some places like that. So, this also is a significant opportunity for OEMs to have a level playing field towards having global markets which are opening up and this should also be seen as a steppingstone towards electric vehicles when many of these things simply disappear, there are no emission norms. So, everything becomes open and an electric vehicle in India is also equally capable of operating in any other region provided it meets all other norms. So, there are different advantages one, the cost may go up a little bit time premiumization continuously happens in terms of features or addition of technology into the vehicles, this also opens up a much bigger opportunity for Indian OEMs. And also for us as tier one to export to other regions.

**Soumitra Bhattacharya:** Guru thank you for that. And if I could add to what Guru you mentioned, today the inventory for pass cars which is around 4,60,000 by the end of October is the normalized inventory and only area of this inventory which is lower is on the high end cars and definition of high end cars if I may indicate is around +12 lakhs for 14 year, so slightly higher income. So, #A, the sales in October, retail sales have been 3,80,000 this festive season as compared to the last four years, where the festive season we have sold between 3,20,000 and 3,30,000. So, significant increased number. Number two, our annual sales will be at 4.3 or 4.4 million against 4.07 or 4.1 million. And number three, the sales for lower and mid-end cars for India are having good enough inventory, but not so for the high-end cars where the demand is a bit high. So, you can actually make out from this Sonal what the trend is.

**Annamalai Jayaraj:** Yes, next I will read out a question from the question box, it is from Mr. Satish Motwani. What's your exposure to USD and Euro and how does the moment impact us with our clients is FOREX impact the pass through?

**Karin Gilges:** So, as mentioned before regarding the FOREX we have a very good hedging strategy in place, as Soumitra Bhattacharya already explained, and therefore you see a change in the US dollar on the negative side on the euro on the positive way. We are importing for those of the markets, of course maintained on the Euro base, but based on our hedging policy, which we have in place for a very long time. We do not see an influence which is significant based on our stable policy.

**Management:** Thanks, Karin. Satish is indirectly trying to ask us that are we buying in US and selling in Europe. The answer is no Satish. #A as our CFO said for years, we have had a strong hedging policy. And we do this for both USD as well as for Europe number one, number two, we are not one of those companies who are the slightly unfortunate situation of having that on **(Inaudible)** **45:17** USD and then selling it. Does that answer your question Satish.

**Annamalai Jayaraj:** I think it's clear sir. Next question will be from Mr. Pramod Kumar, you can unmute and ask your question.

**Pramod Kumar:** Sir, my first question comes for two-wheeler segment because that is something which is still being debated whether it will come through or not and given the demand in this category is already pretty weak. So, any thoughts on that on as to what do you see the cost implication there whether you expect it to be a minor one or a meaningful one and as a meaningful around like 4% to 5% kind of a cost inflation for the category?

**Management:** Can you repeat that last sentence please, what will be the?

**Pramod Kumar:** What will be the cost implication for the categories, because this is in context of the kind of demand hit what this category has seen as well as transition to BS6 and to the new safety norms so just wanted the OBD norm impact on the two-wheeler cost curve.

**Management:** So, again I repeat Pramod, you must understand in 2018, 19, for the calendar year 2018, which the two-wheeler peaked at 25 million, I showed you that graph where the calendar year of 22 we

would be at 19.5 to 20 million. So, first of all the Indian industry is not reaching up to the 25 million number one. Number two, in the 18-19 we are talking of apples and oranges between 18-19 and 2018 and 22. Why, because at that time there was a **(Inaudible) 47:11** today we have a fuel injection system. Number three, the OBD2 will come number. Number four very important the base models during that period, because we have heard between 65,000 to Rs.80,000. Today, the base models are between 1 lakh and 1,20,000. So, when you take a standard 100 cc vehicle or 125, and so on so forth. So, we are actually comparing apples with oranges. Having said that, I would say at 19-20 million vehicles, it is not a bad size in India. And of course, we hope that it will further pick up and go towards the peak. But we are confident that India has seen a very clear growth curve or value added by making vehicles both at four wheelers or two-wheeler, three-wheeler safer by bringing in technology, the cost naturally will go up both from inflation as well as value added products being brought into contemporary and still are relatively affordable it gives context. So, I've already shared larger details of OBD2. So, I won't repeat that again.

**Pramod Kumar:** And just a follow up to that, given the increased compliance will electronic carburetors still be relevant, or would you expect the two-wheeler market to injection with the OBD2 norms?

**Management:** So, OBD2 norms have been made very clear by the government, on matter e-car, we at Bosch have very clearly said that we are believing in the technology, which is there not only in the West, but also declared by the government. And I would not like to comment on the income because different people do it and I would not like to indicate that.

**Pramod Kumar:** I understand, appreciate that sir. Final question on the, AIS 150 how do you see this kind of impacting the current battery procurement in India which is heavily dependent on lot of Chinese imports, including the **(Inaudible) 49:28**, does Bosch has large EV player see a big opportunity there where you expect incrementally a lot of these smaller electric vehicles and OEMs approaching you because the government is clearly up the ante there in terms of the kind of safety standards they need and the kind of, even the kind of support and processes of the battery assembly. So, do you see this as a big opportunity for Bosch to ramp up its EV wallet share?

**Management:** So, I will take this question, thank you. The tighter regulation was going to happen anyway. So, the government, initially let this a little bit free for market to get established and then use the opportunity of battery fires and other things to send a message to all the OEMs and all the players in the market. So, that's what has happened, this is a very good move in our view, this tightens the technological preparedness in this area in terms of safety and significantly to make the batteries safer, the vehicle safer. This is something that we are always believing in. So, all our batteries which we design and offer to the market have very high levels of safety and standards compliance including diesel level compliance built in. So, we are able to offer this already now into the market and we have also worked closely with the government to help them refine these standards over the past year or so. So, overall, this is a very good move, and we certainly hope to benefit from this in the coming years.

**Pramod Kumar:** And sir, any cost implication which you can share, because we are getting closer to the deadline for the first stage, because entail a cost inflation for the battery for the electric vehicles in general?

**Management:** Cost implications due to the AIS norms being introduced?

**Pramod Kumar:** Yes, sir.

**Management:** I think it's going to be very difficult to quantify this because there is no baseline we are comparing against. See, there are a lot of batteries today in the market without even basic battery management systems. So, they just wired up to deliver 48 volts or 12 volts or whatever is the voltaic system, without any basic requirements in terms of voltage, our battery management system to manage the batteries, both for thermal performance and our cell level **(Inaudible) 52:20** or protection. So, it's very, very hard to compare. Any western system or systems offered in the West which are compliant SL standards always have had these things built in. So, in that sense, this will come from a good well designed battery a lot of these protection mechanisms in the BMS are already there so that the new norm should not act any further.....

**Annamalai Jayaraj:** Thanks Pramod. Next question is from Naveen Mahata.

**Naveen Mahata:** I just wanted to check on the gross margins if you had commented in this quarter we've seen some further pressure. So, just wanted to understand is it largely commodity or is it also a product mix effect out there?

**Karin Gilges:** Yes, it is. But, we see the product mix effort mainly out of between the manufactured goods and the credit goods, which has implication and if you look at the P&L, you can see that the material cost especially increased and this is based on the product mix on the one side, but also and disparately based on the increase of the raw material and on the electronic components. And as Soumitra Bhattacharya already mentioned, we are in discussion with our customers regarding the recovery of especially this raw material increases. But overall, if you look from one quarter last year to this quarter, then you'll see an aeration in the margin especially to the raw material increases and the product mix.

**Naveen Mahata:** Understood. And just on this common rail localization that we've spoken about, just wanted to get a sense as to once this is fully productionized where will it take our localizations level up to?

**Karin Gilges:** The plans we have for further CRIN localization will improve RBIN localization levels by approx. 2% in the next 2 years and the strategic objective of the localization of this injector on the commercial vehicle is much more important, because if you look on the midterm of the long term, this was a very strategic step to localize this line here in India for the Indian market. So, I would not go rather for the pure percentage but at least look from the strategic point of view this is a very important step for Bosch Limited India.

**Naveen Mahata:** Got it, thank you for this. And just one last one, if I can try. I just wanted to get a sense if we could share any thoughts on where our EV order book stands at currently, just to understand our progress in this space.

**Management:** We do not, we are working actively, we do not make statements as you know, Naveen until the SOPs which happened from our customers. So, while we are working as we mentioned and – **56:06** mentioned, further statements would come only when the SOPs happen, which is consistent to our practice of declaration also.

**Annamalai Jayaraj:** We thank all the participants. We thank Bosch management for taking time out for the call and also providing us the opportunity to host the call. Have a good day.

**Management:** Thank you.

**Management:** Thank you.

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