

**Bosch Automotive Technology: Well prepared for the shift in  
global markets**

Dr. Bernd Bohr,  
Chairman of the Bosch Automotive Group,  
at the Tokyo Motor Show  
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Ladies and Gentlemen,

This year's Tokyo Motor Show is taking place in a period of transition. As the global economy begins to recover, a shift in automotive markets that began long before the recession has made one thing clear. To secure long-term success, the automotive industry must balance its focus between mature markets and the growth regions of the future. Today, all evidence suggests that Asia's emerging markets will drive future growth. By 2035, the world's passenger car fleet is set to double. And the majority of new cars will hit the roads in India and China.

What does this mean for the future of the automotive industry? This shift to emerging markets will be accompanied by several structural changes that will require automakers and suppliers to rethink their strategies. A greater demand for smaller, more affordable cars is one of them. Another is the increasing significance of fuel efficiency as governments around the world introduce stricter emissions limits. What is more, limited oil reserves and rising fuel prices will drive automakers to step up their development activities for the electrification of the car. And as the number of vehicles on the world's roads increases, passenger safety will become more important than ever.

Responding to all of these developments is certainly no easy task. But Bosch is well prepared to meet the challenges ahead, both in mature and emerging markets. There is no question that the economic downturn has hit the automotive industry hard, and made 2009 one of the most difficult years in our company's history. Despite this, we have remained focused on the

essential task of building the future. This means that we have continued, as always, to develop innovative technologies in line with our corporate slogan "Invented for Life."

### **Confident about the future despite current challenges**

Before I discuss exactly what this means, I would first like to take a brief look at our current situation. By the end of 2009, the Bosch Group will have 270,000 associates worldwide, 160,000 of whom work in our Automotive Technology business sector. In Japan, we will have a workforce of 7,500, with about 6,300 associates working in our automotive businesses.

The recession has left a clear mark on our result. For 2009, we expect sales of the Bosch Group to fall by 15 percent, to some 38 billion euros. As a consequence, operating result will be negative. In our automotive businesses, the decline in sales may be as much as 20 percent. This situation has also been reflected in Japan, where our year-on-year automotive sales have dropped dramatically, by some 28 percent.

Fortunately, there are signs that the situation has stabilized. We expect Bosch Automotive Group sales for the fourth quarter of 2009 to be up compared with the same period in 2008 – but they will still be about 20 percent below the 2007 figures. Even so, this improvement will lay the foundation for our growth in the coming year. There have been several encouraging signs over the last few months: orders have begun to improve and we have acquired major new projects. On the whole, however, it could take us until 2012 to return to the pre-recession levels of 2007.

Above all, to ensure our company's long-term success, we must secure profits and liquidity. We have to reduce spending and at the same time secure our future. Long-term orientation, entrepreneurial independence, financial stability: these are the principles that have enabled Bosch to keep a strong position compared with its competitors. And they will continue to allow our company to distinguish itself in the future.

### **Bosch - Well prepared to meet the challenges ahead**

These principles also enable us to develop innovative technologies that make driving safer, easier, more eco-friendly, and more economical. Despite the current recession, we have kept up R&D expenditure in Automotive Technology. In 2009, investment has remained high at some 3 billion euros. It has gone into a broad range of forward-looking projects, including technologies that improve fuel efficiency and reduce CO<sub>2</sub> as well as other pollutant emissions.

### **Making driving more economical and eco-friendly**

We are making driving more economical and eco-friendly in several ways, while at the same time serving the varying needs of our customers in both mature and emerging markets.

First, we are further improving conventional powertrain technologies. This is because we believe that the internal combustion engine will remain the technology of choice for the next two decades, in the period of transition to the electric car. With improved direct injection systems, downsizing, turbochargers, start-stop systems, and ultra-efficient alternators, the fuel consumption of gasoline and diesel engines can be reduced by another 30 percent. Especially because of its

availability and affordability, the diesel engine is set to see strong growth in Asia's emerging markets, and will be particularly successful in India.

We are also intensifying our activities in the area of hybrid technologies, which can reduce fuel consumption even further. What is more, hybrid drives are particularly well suited to traffic situations such as Japan's, which is characterized mainly by inner city driving over short distances in stop-and-go traffic. Our hybrid systems are set to go into series production in 2010 with new hybrid versions of the Porsche Cayenne and VW Touareg. We also recently entered into a strategic partnership with PSA to develop, manufacture, and supply electric motors and power electronics for the automaker's diesel hybrid all-wheel-drive powertrain.

Making the electric car a common sight on the world's roads is another area in which we are hard at work. By the end of 2009, up to 500 engineers will be working in the special business unit that we recently set up to advance electric drive technology. In addition, with our joint venture SB LiMotive, we are collaborating with Samsung SDI to further develop lithium-ion battery technology for use in the automobile. Here, some 400 associates are working to develop batteries for hybrid and electric vehicles. These batteries must be able to function perfectly under all imaginable driving conditions, and to store enough power to increase the range of electric vehicles to an acceptable level. Above all, the cost of EV battery systems must be reduced significantly.

This is a major challenge, but one that automakers believe SB LiMotive is capable of mastering. Set to go into series production in 2011, our lithium-battery cells will be featured in BMW's "Megacity Vehicle." And we are currently in very promising discussions with several other OEMs. By producing large volumes of battery cells and packs, SB LiMotive will not only be able to cater to growing demand in years to come, but will also benefit from economies of scale. By the end of 2012, we expect to be producing lithium-ion cells to a capacity of more than 600,000 kilowatt hours for hybrid and electric vehicles.

### **Making driving safer**

While developing more eco-friendly drive technologies is essential in light of growing personal mobility, we must also make sure that driving is safe. This is particularly true as worldwide demand for small cars grows - the majority of these vehicles are still not equipped with advanced safety systems.

One of these systems is ESC, the electronic stability control. A number of independent studies have already shown that ESC can prevent up to 80 percent of skidding accidents. And in 2009, the findings of a new Japanese/German study have provided further convincing evidence that ESC saves lives. It found that if all of Japan's cars were equipped with ESC, six out of every hundred fatal accidents could be prevented each year.

Today, ESC installation rates in Japan are on a par with worldwide levels, at some 34 percent. This is about half the current levels in North America and Europe, which amount to 68 percent and 57 percent, respectively. However, thanks to

measures and policies being introduced as a result of Japan's Intelligent Transport Systems and Advance Safety Vehicle initiatives, ESC installation rates in Japan are expected to rise to 67 percent by 2014. Today, Bosch is already well-represented in Japan's market for ESC and ABS anti-lock braking systems, with a market share of 24 percent.

As we move forward, we continue to add to our range of safety-enhancing technologies. In 2010, we are teaming up with Audi to begin series production of PEBS, our predictive emergency braking system. A combination of the predictive brake assist and predictive collision warning functions, PEBS can detect obstacles, estimate accident risk, and trigger automatic emergency braking when the driver has not responded to warnings. This system can prevent three out of four rear-end collisions.

In the area of passenger safety, we continue to see Japan as an important partner for research and development. Today, Japan is already the Bosch center of competence for motorcycle ABS, which experts consider to be the most effective safety system available for motorcycles. And since we expect demand for ESC to rise strongly both in Japan and international markets, we are expanding our engineering base in Yokohama and our winter test track in Memanbetsu, Hokkaido. With a total investment of 7.8 billion yen, the expansion projects will make Japan the largest Bosch engineering base for braking systems outside Germany.

### **Developing products in the region, for the region**

This investment reflects our belief that individual markets can best be served when innovations are developed in the region, for the region. And in fact, we have gone to great lengths to establish firm roots in all of the countries in which we do business. Not only have we built lasting partnerships with our customers in all of the world's regions, we have also focused on localizing our R&D and manufacturing activities.

As a result, some 30 percent of the Bosch Automotive Group's engineers work in Asia, with almost 1,300 located in Japan. This has proven to be a very successful strategy which has made us a trusted partner among OEMs in both mature and emerging markets. The full range of systems and components developed for India's Tata Nano ultra-low-price vehicle is just one example of what our international teams of engineers have accomplished.

### **Changing markets – Opportunities for Japanese automakers**

Indeed, our achievements in the world's major markets have shown that the structural changes I have discussed today should not be considered as a threat, but instead as an opportunity for future growth. With technologies "Invented for life" and a strong local and regional presence, Bosch is in an excellent position to contribute its know-how and expertise as we move into a new era of innovation.

Thank you for your attention.