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Technical Development

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- Check against delivery -

Ladies and gentlemen,

We live „Vorsprung durch Technik“. That’s my philosophy as an engineer and as the Board Member for Technical Development at AUDI AG. It is my responsibility to live up to this conviction and set an example to more than 10,000 employees in Audi’s global development network, and to inspire the team to strive for great accomplishments. The Supervisory Board of AUDI AG entrusted me with this task when it gave me responsibility for Technical Development at Audi last year.

In my additional responsibility for coordinating the development of the various brands at Volkswagen Group, I team up with the members of the boards of management for technical development of the other brands, so that we can leverage synergies and make more efficient use of the potential and capabilities of more than 40,000 development engineers. We cover all areas of competence, from design to engines and transmissions, materials, lightweight construction and motorsport. These synergies are a unique competitive advantage of the Audi Group.

We shape the future of mobility together. Because in the automotive industry today and in the coming years, it will not suffice to have technically leading and visually appealing cars and motorcycles. Our customers’ needs and demands are changing. We anticipate these changes with our product range.

At the Audi Group, we place just as much priority on efficiency and connectivity as on sportiness and design, quality and perfection. Each design from Italdesign Giugiaro, each superbike from Ducati, each super sports car from Lamborghini and each car with the Four Rings always provides a glimpse of the future as well.

*The collective fuel consumption of all models named above and available on the German market can be found in the list provided at the end of this document. (3/2014)



This future will offer our customers a driving experience that is dynamic and emotional as well as safe and comfortable. Audi customers also drive efficiently, sustainably and with a high degree of connectivity.

We take this future into series production. I stand by that goal personally, along with my entire team. I am delighted that since July 2013, I have been able to contribute my experience from three decades of development work in the automotive industry at Audi again. And I am pleased that I can work with such a highly motivated team of development engineers here. In the first phase of getting reacquainted, we synchronized our understanding of products and processes, and we are now pushing our current projects forward in the target corridor, with utmost energy and creativity. A strong culture of innovation is exactly what distinguishes us – and is what we need to achieve our goals.

With a view to the future of mobility, we focus on the trends of the present and the core values of our brand.

Sustainability: We are committed to qualitative growth and the sustainability of our products and processes. Our goal is to achieve mobility that is completely CO₂ neutral. Our drive systems are oriented towards global CO₂ targets, without compromising performance and emotiveness. Technologically, we are pushing forward with the pioneering concept of our turbo-charged engines with direct fuel injection. The same applies to electric and hybrid drives. We will also continue to push the limits of thermodynamic drive systems. We are working for example on engines with variable compression and electromechanically assisted charging systems.

We apply lightweight construction with the intensive use of aluminum material mixes. We also utilize carbon-fiber reinforced polymers wherever appropriate in our cars. We are further developing the integration of these materials with process-oriented bonding techniques. That is a core competence of Audi. “The right material at the right place” is the fundamental principle of our mixed-material construction.



Connectivity: People want to be connected with each other at all times and wherever they are, also in their cars. Our cooperation with the leading companies of the electronics industry such as Google and Apple turns the car into a mobile device. It is connected seamlessly and in real time. In terms of connectivity, we set the benchmark, starting with our top segment and the Audi TT*. We will then proceed to spread these functions across the entire product range. We are developing car2x connectivity such as exchanging data with other vehicles and infrastructures with an emphasis on traffic flow and traffic safety.

Simplicity: Technology is becoming increasingly complex, but should be increasingly self-explanatory and easy to operate for the user. In particular when driving a car, there should be no distractions! Our MMI concepts are easy to handle and adapt to the driver's information needs. Our future interface strategy will build on this principle.

Piloted driving: The next step towards more driving safety is piloted driving. We meet the challenge of the competition with concepts close to series maturity and see ourselves in a strong competitive position.

In development engineering, we apply four powerful levers:

Fascination: The Audi brand will continue to gain appeal along with the transformation of mobility. To those ends, we will progressively develop the Audi design language, through our brand's core values such as quattro sportiness, progressivity and refinement. With a premium interior for example, we are making our ambitions clear in terms of quality and value. We will connect product planning and vehicle concepts with each other even closer. In this way, we will renew our product portfolio and include new vehicle concepts, enabling us to meet our brand's growth targets. Increasingly complex automobile technologies have to be implemented with reasonable effort and expense. In this context, we have the advantage of our great competence and experience with modularization and modular matrix systems.

We at Audi laid the foundation for the Volkswagen Group's module initiative with our longitudinal modular matrix in 2009. All manufacturers that want to be successful in the future will have to apply modularization in development and production. Modular construction offers enormous variety in automotive concepts.

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It also makes complexity increase manageable. The goal of the second-generation modular longitudinal matrix is to optimize the system in terms of variability and fulfillment of the CO₂ target. In general, we will individualize what the customer is aware of; what he is not aware of, will be standardized.

The core of the matrix is the uniform position of the engine and transmission in the car, as you can see it from the Audi A8* or the Q7*. The modular system allows us to use a large number of engines, from the 4-cylinder TFSI to the W12 engine in the Audi A8* and Q7*.

In addition, the modular system allows us to scale-up the degree of lightweight construction depending on requirements. In the second-generation modular longitudinal matrix, various degrees of electrification will be applied in each model family: from iHEV to HEV to plug-in hybrids. On the basis of the transversal and longitudinal matrix, we will expand our product range to 60 models and variants by 2020. This represents considerable growth. At present, we have 50 models in our portfolio. The youngest is the S3 Sedan*, which was launched in Germany in mid-February.

We take the future into series production. Technological progress is essential for Audi's future. With their wide spectrum of features, our automobiles embody pioneering technology and superior appeal. We never create technology for its own sake. The customer directly experiences its benefits in our products.

In 2014, we in Technical Development are preparing the big model initiative of the coming years. Already this year, we will launch 17 models and derivatives on the market. I would firstly like to draw your attention to our compact and subcompact models Audi S1*, Audi S1 Sportback* and Audi S3 Cabriolet*, which we presented in Geneva last week.

They include all of the key features that customers expect from a real Audi. With these models, we will significantly expand our high-volume range of compact cars. And we will continue the success story of our SUVs.



First of all with the new compact SUV, the Audi Q1. In the luxury product segment, we will launch the Audi Q7 on the basis of the second generation of our longitudinal modular matrix.

The absolute model highlight of the year 2014 is on stage here next to me. The third-generation Audi TT*. We presented our design-focused compact sports car for the first time in Geneva last week. I feel personally connected with the TT, ever since the first generation in the nineties. As a concept developer, I initiated the TT with our designers; we progressed from the idea to the first design in just four weeks. The first TT was launched in 1998, and trade journalists were soon calling it a design icon. With its successor model, I was able to continue the TT story together with Walter de Silva. And in the summer of 2013, I was able to add my thoughts in developing the third generation of the TT. I am sure that this model will become a success as well.

Because the new TT has everything that defines an Audi: impressive sportiness, high-quality design, pioneering efficiency. For example, the future TT ultra with a 2.0 TDI diesel engine will emit only 110 grams of CO₂ per kilometer. The interior of the new TT is also highly innovative. We have replaced the previous MMI monitor with the virtual cockpit. In this fully digital combination instrument, we bring together all of the information that is relevant to a sporty and safe driving experience in direct view of the driver. As a former concept developer, I always see a car under the aspect of “how can I combine its elements in a new way?” and “which derivatives of this model would be feasible and logical?”

In Detroit, we presented a possible future member of the TT family as a show car: the Audi TT allroad shooting brake. Your colleagues responded very positively to this study. And we are working on further ideas for TT derivatives, which we will soon unveil. We showed another derivative in Geneva: the Audi TT quattro sport concept, which focuses on the sporting genes of the TT. And we will systematically further develop its quattro technology. This showcar has been developed without any compromises for use on the racetrack, and would allow motorsport fans to experience directly what kind of performance an Audi TT can deliver. With its 4-cylinder 2.0 TFSI engine and output of an impressive 420 horsepower, it weighs just 1,344 kilograms thanks to lightweight construction and CFRP components.

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The advanced gasoline engine of this concept study is a further development of the multiple award-winning EA 888 unit, the most widely used engine in the entire Volkswagen Group. A good example of Audi's engineering expertise.

Efficiency and sustainability are the guidelines of our innovation roadmap. This is underlined by the Volkswagen Group's target of 95 grams of CO₂ per kilometer by 2020. Already by 2016, we will have reduced the CO₂ emissions of the Audi new car fleet by a quarter compared with 2008. How will we do that?

We will fulfill 20% of the current CO₂ target corridor by taking measures for vehicle optimization: weight, roll resistance, air resistance are some of the levers we will utilize. We will achieve a further 30% with alternative drive systems such as plug-in hybrid, natural gas and battery electric vehicles. In the future, we also envision fuel cells drives. We will reduce most of the remaining CO₂ emissions by fully utilizing the potential of our high-performance combustion engines. We are in a good starting position to do so. Audi has a long history of powerful and efficient engines. For ten years, we have been setting the pace with our TFSI gasoline engines with direct fuel injection and turbo charging. They stand for high torque, strong output and high efficiency. And they can use new CO₂-neutral fuels such as Audi e-gas and e-ethanol. We will further enhance the efficiency and performance of these technologies, for example with variable compression and high-pressure turbo charging. For 25 years, we have been leaders with our TDI diesel engines, which also have direct fuel injection and turbo charging. Our TDI engines allow extremely long intervals between filling up, and make use of the world's most successful efficiency technology. And we will continue this tradition. The keywords are rightsizing, two-stage turbocharging, e-turbo and TDI e-tron.

The new Audi ultra models are already making an impression on the market. With an even more efficient Euro 6 engine, they are our CO₂ champions in each model series – in terms of engine, drive system and transmission. All 13 ultra models that you can order today and later this year, have fuel consumption significantly below 5 liters per 100 kilometers. As an example, that is obvious with the Audi A3 ultra*, which consumes just 3.2 liters per 100 km.

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For about four weeks now, another A3 efficiency champion has become available for order in Germany: the Audi A3 Sportback g-tron*. It is our first model that can be run alternatively on gasoline, natural gas or the climate-neutral Audi e-gas that we produce ourselves. It represents an attractive entry into the world of eco-efficient mobility. We are also carrying out a wide range of research and development work directed at the overall energy balance, in the area of synthetic fuels for example.

Electric mobility is a key focus of our development strategy. Our Audi A3 Sportback e-tron* embodies the state of the art in terms of future-oriented drive technologies. To be launched this summer, the A3 e-tron combines a powerful electric motor with an efficient 1.4 l TFSI combustion engine, and offers top performance with minimal fuel consumption and extremely low CO₂ emissions. It is at the top of our efficiency ranking with just 35 grams of CO₂ per kilometer. Our first plug-in hybrid has had a great response amongst automotive experts since it has been presented. And I am firmly convinced that it will be the same with our customers. The A3 e-tron is just the beginning.

We are systematically transferring its plug-in hybrid technology to our mid-sized and large model series. The Audi A6, Audi A8 and the next Audi Q7 will also be available as plug-in hybrids. My Board of Management colleagues and I appreciate that many of you are awaiting news on our fully battery electric vehicle, the Audi R8 e-tron.

In recent months, I have had a very close look at these electric high-performance sports cars with my team. The latest development work is very convincing. We have increased their range from 215 to approximately 450 kilometers, which is a decisive step towards everyday practicality. This significant step is the result of progress with battery technology and a revised package with a considerably higher power density. In brief: We combine power and stamina. We have made significant efficiency gains with mechanical as well as electrical and electronic components of the R8 e-tron. The drivetrain is more efficient and onboard electricity consumption has been considerably reduced due to optimizing the power electronics. I am very proud of these achievements of my team.

The Board of Management of AUDI AG has decided to offer the next-generation R8 e-tron as a manufactured sports car upon customer request. And we will make intensive use of the next generation of the R8 e-tron as an open technology carrier and working

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instrument for our engineers to test and further develop technologies for the future. Think for example of new drive technologies and regulating systems such as by-wire technologies or active suspension concepts.

Taking a glance at the future of mobility, we assume that the development of automotive technology will become even more dynamic in the coming years. I am convinced: We are ideally prepared for the future with our strategic roadmap, a well-filled development pipeline, and a highly motivated engineering team. Our modular strategy, in addition, is a strong competitive advantage.

At the beginning, I said we “live” “Vorsprung durch Technik”. I was referring to technology that truly excites our customers – in every respect. That’s how we approach the competition.

Thank you for your attention.

– End –

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Fuel consumption of the models named above:

Audi A1/S1:

Combined fuel consumption in l/100 km: 7.2 - 3.8;
Combined CO₂-emissions in g/km: 166 - 99

Audi A1/S1 Sportback:

Combined fuel consumption in l/100 km: 7.3 - 3.8;
Combined CO₂-emissions in g/km: 168 - 99

Audi A3/S3:

Combined fuel consumption in l/100 km: 7.0 - 3.2;
Combined CO₂-emissions in g/km: 162 - 85

Audi A3/S3 Sportback:

Combined fuel consumption in l/100 km: 7.0 - 3.3;
Combined CO₂-emissions in g/km: 162 - 88

Audi A3/S6 Limousine:

Combined fuel consumption in l/100 km: 7.0 - 3.8;
Combined CO₂-emissions in g/km: 162 - 99

Audi A3/S3 Cabriolet:

Combined fuel consumption in l/100 km: 7.1 - 4.2;
Combined CO₂-emissions in g/km: 165 - 110

Audi A3 Sportback e-tron:

Combined fuel consumption in l/100 km: 1.5;
Combined CO₂-emissions in g/km: 35

Audi A3 Sportback g-tron:

Combined fuel consumption: CNG 3.3 - 3.2 kg/100 km, petrol 5.2 - 5.0 l/100 km
Combined CO₂-emissions : CNG 92 - 88 g/km, petrol 120 - 115 g/km

A4/S4

Combined fuel consumption in l/100 km: 8.1 - 4.0;
Combined CO₂-emissions in g/km: 190 - 104

A4/S4/RS46 Avant

Combined fuel consumption in l/100 km: 10.7 - 4.2;
Combined CO₂-emissions in g/km: 249 - 109

A4 allroad quattro

Combined fuel consumption in l/100 km: 7.1 - 5.8;
Combined CO₂-emissions in g/km: 164 - 153

A6/S6

Combined fuel consumption in l/100 km: 9.6 - 4.4;
Combined CO₂-emissions in g/km: 225 - 114



A6/S6/RS6 Avant

Combined fuel consumption in l/100 km: 9.8 - 4.6;
Combined CO₂-emissions in g/km: 229 - 119

A6 allroad quattro

Combined fuel consumption in l/100 km: 8.9 - 6.1;
Combined CO₂-emissions in g/km: 206 - 159

A8/S8

Combined fuel consumption in l/100 km: 11.3 - 5.9;
Combined CO₂-emissions in g/km: 264 - 155

Audi Q3/RS Q3

Combined fuel consumption in l/100 km: 8.8 - 3.2;
Combined CO₂-emissions in g/km: 206 - 137

Audi Q5/SQ5

Combined fuel consumption in l/100 km: 8.5 - 5.3;
Combined CO₂-emissions in g/km: 199 - 139

Audi Q7

Combined fuel consumption in l/100 km: 10.7 - 7.2;
Combined CO₂-emissions in g/km: 249 - 189

Audi TT/TTS:

This car is not yet on sale. It has not yet been homologated and is therefore not subject to the 1999/94/EG guideline.

Provisional data:

Combined fuel consumption in l/100 km: 7.1 - 4.2;
Combined CO₂-emissions in g/km: 164 - 110

Lamborghini Huracán LP 610-4:

Combined fuel consumption in l/100 km: 12.5;
Combined CO₂-emissions in g/km: 290

Ducati Diavel:

Combined fuel consumption in l/100 km: 7.1;
Combined CO₂-emissions in g/km: 169

Ducati Monster 1200:

Combined fuel consumption in l/100 km: 6.4;
Combined CO₂-emissions in g/km: 150