



Corporate Communications

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“Consistently electric” – Audi’s mobility strategy

- **More than 30 electric drive models by 2025**
- **Four electric platforms with scalable modular assemblies cover all vehicle segments**
- **Highly sought-after plug-in hybrids will already expand the product portfolio in 2019**
- **Corporate units are supporting the transition toward electrification**

Ingolstadt, September 23, 2019 – Audi is electrifying its model range consistently and transforming into an electric car manufacturer with an extensive model portfolio. To this end, the company is relying on four production platforms in order to be able to offer electric cars for every vehicle segment. The range of plug-in hybrids on offer is also being further expanded with a product initiative in 2019. The company is promoting its electrification strategy in the areas of brand strategy, sales organization, production and personnel qualification resolutely and at high speed.

„The future is electric. The Audi e-tron* is for us and already for a lot of delighted customers an electrifying beginning. By 2025, we will have launched 30 electrified models, 20 of them all-electric. We are setting the pace for electric mobility suitable for everyday use“, says Bram Schot, Chairman of the Board of Management of AUDI AG.

In order to realize these ambitious projects, Audi is making use of group-wide synergies and building up the production of electric cars on four modular assemblies: The Audi e-tron* SUV as the first all-electric model is based on an adapted version of the modular longitudinal platform (MLB evo). As the second model, the Audi e-tron GT concept sports car will be built on the J1 performance platform in close cooperation with Porsche in 2020. In 2021, Audi will launch the Q4 e-tron concept via the modular electrification platform (MEB) as an introduction to the electric world of the four rings. Audi will launch various compact and medium-size class models on the MEB platform, which Volkswagen designed for the entire Group. For the electric full-size class and luxury models, Audi is using the PPE architecture (Premium Platform Electric) whose segment-specific technical layout allows numerous high-tech technologies to be realized.

In addition, Audi is further expanding its model portfolio of hybrid models with plug-in hybrid drive (PHEV, plug-in electric vehicle), in which a TFSI engine works together with an electric

* The fuel consumption values of all models named and available on the German market can be found in the list provided at the end of this MediaInfo.



motor and a lithium-ion battery. The PHEV models feature sophisticated drive management for distinct electric stretches in cities and residential areas. In 2019 alone, Audi is presenting four new plug-in hybrids in the A7 Sportback, A8, Q5 and Q7 product lines. Further PHEV models will round off the extensive PHEV offer in 2020.

To promote sustainable mobility and further fields of innovation, Audi will be investing around EUR 14 billion in electric mobility by the end of 2023. In addition to the development and production of the new electric models, the money will also go toward personnel qualification and sales.

The company has set itself the goal to gradually make the entire life cycle of its models CO₂-neutral: from raw material production, production and use all the way to the utilization and conversion to renewable energy. By 2025, the vehicle fleet's greenhouse gas footprint is to be 30 percent below the reference value from 2015. Audi intends to be carbon-neutral on balance at all locations worldwide by 2050 at the latest—working together to unleash the beauty of sustainable mobility.

– End –



Fuel consumption of the models listed

(Fuel consumption, electricity consumption and CO₂ emissions figures given in ranges depend on wheels/tires and the chosen equipment level)

Audi e-tron 55 quattro:

Electricity consumption combined in kWh/100 km: 26.2 – 22.6 (WLTP); 24.6 – 23.7 (NEDC)

CO₂ emissions combined in g/km: 0



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Road map E: Audi in the era of electric mobility

Ingolstadt, September 23, 2019 – Audi is transforming into a provider of electric mobility— a process that involves all areas of the company. After all, the brand with the four rings intends to put more than 30 electrified models on the market by 2025, which constitutes a 40 percent share in sales. In doing so, Audi is consistently pursuing the path of sustainable mobility. Accordingly, the areas of Procurement and Production are also aligning themselves more strongly with sustainability-related criteria. The skills and experiences from the development and production of the Audi e-tron* will be incorporated into the upcoming projects for the all-electric models. The activities are flanked by comprehensive training and development concepts.

Consistently electric

Audi is becoming a provider of integrated, carbon-neutral premium mobility with the goal of taking the leadership role in the competition. To this end, the manufacturer is accelerating its electrification road map and company-wide decarbonization. By 2025, the carbon footprint of the vehicle fleet across the entire life cycle is to be reduced by 30 percent as compared to 2015. In the future, the return on investment as the central financial control parameter will also show the CO₂ performance of the four rings, with sustainable management helping to increase it to more than 21 percent.

In the context of the Volkswagen Group's consistent focus on electric mobility, the four rings are taking a targeted approach to aligning their drive portfolio with the specific requirement profiles of premium customers. With a considerable portion of large vehicle segments, the corresponding power requirements and frequent use for long-distance journeys, Audi is relying on plug-in hybrid drives in addition to all-electric vehicles.

Consistently customer

Modern premium customers are increasingly placing their focus on sustainable mobility. It is therefore a consistent step to make electric mobility one of the central cornerstones of the new brand strategy. Audi will reserve 50 percent of its marketing budget for topics relating to electric mobility in the future. The company aims to provide its customers with a stronger emotional experience with the new drive type, dispel any reservations and spark enthusiasm. The company podcast "The Future Is Electric," which is now already on its second season and recently won the "World Media Award" in the "Automotive" category, is a successful example of this approach. Audi also started a new chapter for the market launch of the e-tron* at the

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beginning of 2019 with a walk-on meteorite at Munich Airport. Visitors had the opportunity to spontaneously experience the new model and the Audi brand on more than 20,000 test drives.

The brand's trade partners all over the world are crucial ambassadors of the new technology. In order to get their businesses ready for the e-tron*, the dealers have already been installing the suitable charging infrastructure for many months. Audi has trained more than 9,500 international dealership employees for the market introduction of the Audi e-tron*. In order to ensure optimum service, the brand with the four rings is relying on innovative virtual reality (VR) technology: Service technicians in more than 40 markets are using a specially developed VR training course to familiarize themselves with the details of the high-voltage battery in the Audi e-tron*.

Aside from the product itself, experiencing the brand is becoming increasingly important for premium customers. This applies for electrified models in particular, as the ecosystem of the vehicle plays a decisive role here. The company is therefore offering its customers the Audi e-tron Charging Service. It provides access to around 80 percent of all charging stations in Europe—more than 110,000 public charging points in 20 EU countries that are operated by 220 providers. Whether AC or DC, 11 kW or 150 kW—a single card is all customers need to start the charging process. Billing is automatic via the user account. With the new Plug & Charge function that will be released shortly, the Audi e-tron* authorizes itself at the charging terminal via cryptographic processes automatically and activates it.

To charge their vehicles at home, Audi customers can supply their homes and garages with “Volkswagen Naturstrom”, which is generated from 100% renewable energy sources. If desired, the local Audi service partner will send an electrician to check the power supply in the customer's garage and install a charging connection.

The optional charging system connect, which can fully charge the battery of the Audi e-tron* in just over four hours, provides intelligent functions in connection with a home energy management system: The Audi e-tron* can be charged with the maximum power available while taking the needs of other consumers in the household into consideration to avoid overloading the power supply of the home. Customers can also define individual priorities, such as charging when electricity is less expensive. If the home is equipped with a photovoltaic system, the car can be charged primarily using the electricity generated by the system, and the charging management even considers forecast phases of sunshine.

Cross-brand goal: a comprehensive charging infrastructure

From the customer's garage and the cooperation with Ionity to the entire power grid: The Volkswagen Group founded the European direct current fast charging network Ionity together with Audi and Porsche, BMW, Daimler and Ford in 2017. By 2020, there are to be 400 high-power charging (HPC) stations no further than 120 kilometers (74.6 mi) apart in 25 countries. In addition to its involvement in the Ionity group, Audi is also carrying out initial model tests of development and partnerships for offerings with energy groups and public utility companies in

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order to offer BEV customers a reliable and comprehensive mobility offer with the supply of green energy. Charging management that supports the local network rather than overloading it is an important element in Audi's electric mobility ecosystem. Together with energy suppliers and energy service providers, the brand is investigating the potential of intelligent home networks and "smart grids" that will turn the e-tron* models into players on the field of the energy transition. An initial model test has already yielded promising results, including with a view to the customer's cost calculation.

Sustainability along the value chain

With its company-wide sustainability road map, Audi has set itself the goal to successively decarbonize the entire vehicle life cycle, from the supply chain and production to the use and utilization of the Audi models.

Furthermore, Audi has a clear mission to achieve company-wide carbon neutrality on balance by 2050.

The supply chain plays a crucial role in Audi's sustainability road map, especially when it comes to electric cars. The company is therefore intensifying its efforts to enter into a dialog with its partners with the aim of jointly reducing the CO₂ emissions along the entire value chain considerably. At the end of 2018, Audi launched the CO₂ program in Procurement and has since carried out more than 30 CO₂ workshops with suppliers. The first results show that the partners can reduce emissions in particular by closing materials cycles and using green electricity and a larger amount of secondary material and recyclates. Initially, the focus is on parts that involve particularly energy-intensive production. These include, for example, HV batteries and aluminum components. Audi is therefore already demanding that its battery cell suppliers use green electricity in cell production and has anchored this requirement in its specifications.

The premium carmaker is also campaigning for the sustainable treatment of aluminum. Audi was the first automotive manufacturer to be awarded the "Performance Standard" certificate by the Aluminium Stewardship Initiative, which has created a comprehensive sustainability standard, in October 2018. It certifies that the aluminum components of the battery housing in the Audi e-tron* are manufactured and installed in accordance with the ASI sustainability requirements. Audi also intends to enter into targeted cooperations with partners who are also certified by the ASI. For example, aluminum manufacturer Hydro has already been supplying sustainable, ASI-certified aluminum for the battery housing of the first fully electric Audi model since July 2019. As of the end of 2019, Hydro will supply only aluminum sheets that are certified by ASI for the Audi e-tron*.

In addition, Audi is reducing the CO₂ emissions when using aluminum by reusing the material in accordance with the circular economy principle. The company already introduced an "Aluminum Closed Loop" at the Neckarsulm location back in 2017. The aluminum sheet offcuts that are produced in the press shop are sent straight back to the supplier, who recycles

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them. Audi then reuses these reprocessed aluminum sheets in its production process. In doing so, Audi saved around 90,000 metric tons of CO₂ in 2018 alone—30 percent more than the previous year. As of 2020, Audi will gradually roll out the Aluminum Closed Loop in other plants.

In order to ensure sustainability in the supply chain with even greater efficiency, the brand with the four rings already introduced a sustainability rating in 2017. It is used to assess whether the supplier adheres to social and environmental standards. In addition to a self-disclosure, the rating can also perform an on-site check. Since July 2019, the sustainability rating (S rating) has also included a compliance check. The S rating has also been a mandatory contract award criterion since then. This means that suppliers will receive an order only if they verifiably meet specific social, environmental and compliance standards. The rating will be rolled out in the entire Volkswagen Group.

Audi is also involved in various initiatives, thereby campaigning for the preservation of human and environmental rights in the supply chain together with other partners. For example, Audi is a member of the Global Battery Alliance. It is concerned with the protection of human rights and social standards for the mining of raw materials for batteries and develops solutions for the reuse of lithium-ion batteries.

Carbon-neutral production

Audi also considers the carbon-neutral production of electric cars to be an important element of sustainable mobility. The Brussels plant plays a pioneering role here: It has already been carbon-neutral since the start of production of the Audi e-tron*. This was achieved by converting to green electricity, a step that the location already took in 2012, and by installing the largest photovoltaic system in the region. The Audi plant in Brussels meets its heating requirements with certificates for biogas. Overall, the plant saves up to 40,000 metric tons of CO₂ emissions per year by using renewable sources of energy. The measure package is rounded off by compensation projects for emissions that cannot yet be avoided. The company is now rolling out this strategy comprehensively: By 2025, all Audi plants are to be completely carbon-neutral.

Reuse and recycling of batteries

Audi and Volkswagen are already in the process of developing concepts for handling used high-voltage batteries. If a battery has lost a certain percentage of its charging capacity over the course of several years, it can still be used for a stationary application. Among the many available possibilities here, Audi is currently testing two as part of pilot projects: use in forklift trucks and tractor units at the main plant in Ingolstadt and use of the batteries as stationary energy storage on a campus in Berlin.

The first phase of a strategic research cooperation, as part of which Audi and Belgian recycling and materials technology specialist Umicore developed a closed circuit for the elements of HV

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batteries, has already been completed. The aim is to salvage valuable materials such as cobalt and nickel and use them in new HV batteries.

Maximum flexibility: the production of the electrified models

The brand with the four rings entered the electric era with the start of production of the Audi e-tron* in the Brussels plant. The tradition-steeped production site was first extensively modernized and is now one of the most modern production sites for electric models in Europe. The electric drives are supplied by Audi's own engine production plant in Győr, and the Brussels location has set up its own battery manufacturing facility. Many experiences from the production of the e-tron* in Brussels are now being incorporated in the new BEV projects and the establishment of further production sites for electric vehicles.

For the production of future electric models, Audi is relying on a high level of flexibility and valuable synergies within the Group: For example, the PPE platform (Premium Platform Electric) for the large electric cars was developed in cooperation with Porsche. The aim is to produce the PPE models at existing locations. The vehicle concept is based on the standardized plant structures and can be transferred to other factories quickly.

Audi is also relying on synergy effects for the smaller models on the basis of the MEB platform (modular electrification platform): The production model of Audi Q4 e-tron concept, an electric SUV in the A segment, will roll off the assembly line at the Volkswagen plant in Zwickau, together with models from the VW and SEAT brands. Bundling the platforms in production this way enables the future large-volume electric models to be produced in large quantities and with great efficiency. The most important parts of the MEB models are made in the Group's component plants, mainly in Kassel (drive modules), Salzgitter (electric motor parts) and Brunswick (batteries and suspension parts).

Preparations for the production model of Audi e-tron GT concept, which will roll off the assembly line in the Böllinger Höfe near Neckarsulm together with the Audi R8 as of the end of 2020, are also already underway. While the high-performance sports car with a combustion engine is still made predominantly by hand, the electric Gran Turismo is to be manufactured with a higher degree of automation in the body shop. Both models pass through the same assembly, which is currently being expanded by 20 cycles to 36 cycles, as well as an overhead conveyor. Specific electric elements of the vehicle, such as the battery system, the drive or the thermal management, are prepared in special pre-assemblies and installed on the assembly line as a finished module.

The plug-in hybrids are produced in the same locations as their respective product lines: the Audi A3 Sportback e-tron in Ingolstadt, the Audi Q5 TFSI e* in San José Chiapa (Mexico) and the Q7 TFSI e* in Bratislava (Slovakia); the Audi A7 TFSI e* and A8 TFSI e are produced in Neckarsulm, where the production of the A6 TFSI e will also start soon. Audi is currently making two electrified models in local production in China: the A6 L e-tron and the Q2 L e-tron; the Audi e-tron will follow as of 2020.

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With the flow: Bringing the employees along on the way to e-mobility

Audi is also making extensive investments in electric mobility in the Human Resources area. The company is bringing further experts on board while also expanding its internal expertise and getting the Audi employees ready for this field of the future. For example, the budget for further education was increased by just over one third, from EUR 60 million to 80 million per year.

Together with Technische Hochschule Ingolstadt (Technical University of Ingolstadt, THI), Audi has designed a training course in electric mobility for powertrain developers. Audi engineers are expanding their knowledge in the field of electric mobility in the THI auditorium. The aim is to enhance their strategic and technical skills. Specialists and education experts from the automotive manufacturer worked together with professors from THI and tailored the in-service qualification specifically to the company's requirements. On-site events and self-learning phases alternate over a period of three-and-a-half months. The timetable for the Audi powertrain developers includes modules such as "electric motors and performance electronics" or "concepts of electrified vehicles and energy storage." The first participants from powertrain development completed the training at the beginning of 2017.

Audi is also making a consistent move toward electric mobility in its youth talent programs. For example, the company is constantly adapting its training to technological progress and developing new job profiles when necessary. The job profile "Qualified electrician with a focus on system and high-voltage technology" was introduced in 2014. Since then, roughly 700 young men and women have started or completed this three-year apprenticeship at the locations in Ingolstadt and Neckarsulm. After completing the apprenticeship, they usually work in different areas of production, for example in data analysis, or they apply their skills in one of the Technical Development or Pre-Series Center workshops. The new qualification "Qualified electrician for battery technology" was introduced in 2018. Here, the focus is on the production and quality assurance of high-voltage batteries. No matter whether it is an apprenticeship or further training whose course is set for electric mobility: The international Audi locations are always on board, too, and the special training and development offers are adapted to country-specific features as necessary.

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Fuel consumption of the models listed

(Fuel consumption, electricity consumption and CO₂ emissions figures given in ranges depend on wheels/tires and the chosen equipment level)

Audi e-tron 55 quattro:

Electricity consumption combined in kWh/100 km: 26.2 – 22.6 (WLTP); 24.6 – 23.7 (NEDC)

CO₂ emissions combined in g/km: 0

Audi A7 55 TFSI e quattro:

Combined fuel consumption in l/100 km: 2.1-1.9 *(112.0-123.8 US mpg)*;

Combined electrical consumption in kWh/100 km: 18.1-17.5;

Combined CO₂ emissions in g/km: 48-44 *(77.2-70.8 g/mi)*

Audi Q5 55 TFSI e quattro:

Combined fuel consumption in l/100 km: 2.4-2.0 *(98-117.6 US mpg)*;

Combined electrical consumption in kWh/100 km: 19.1-17.5;

Combined CO₂ emissions in g/km: 53-46 *(85.3-74.0 g/mi)*



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Four platforms for all of Audi's electric models

Ingolstadt, September 23, 2019 – Audi is taking a consistent approach to aligning its product portfolio with electric mobility, from the compact segment all the way to the performance models. To this end, the company is making use of group-wide synergies and relying on four platforms in both Development and Production. This allows the brand to offer its customers customized solutions for every vehicle segment. With the e-tron*, Audi has built its first high-volume SUV on an adapted variant of the modular longitudinal platform (MLB evo for short). The four-door Gran Turismo e-tron GT concept is based on the Porsche platform with the designation J1. The more compact electric cars are based on the versatile modular electrification platform (MEB) from the Volkswagen Group, and the innovative, large electric models use the new Premium Platform Electric (PPE).

The first all-electric Audi on the basis of the MLB evo: the Audi e-tron*

The e-tron* marks Audi's start into the electric era. The SUV is the first vehicle to combine electric mobility with Audi quality: A sophisticated drive and recuperation system, all-wheel drive and maximum comfort. In short: Vorsprung durch Technik. The e-tron* is based on an extensively adapted variant of the modular longitudinal platform (MLB evo). Its foundation is a new body shape with numerous innovative structural elements in the lower area of the vehicle center and the roof.

With a wheelbase length of 2,928 millimeters (*115.3 in*), the e-tron* lies between the Q5 and Q7 SUVs. The high-voltage battery stores up to 95 kWh of energy and forms the basis for its range of more than 400 kilometers (*248.6 mi*) in the WLTP driving cycle. This is achieved primarily by the innovative recuperation system, which can recover up to 30 percent of the used energy during brake applications. The two asynchronous motors (ASM) of the full-size class SUV achieve a maximum joint output of 300 kW and ensure a sporty and stable performance on any terrain in cooperation with the electric all-wheel drive, which can be adjusted extremely quickly. The Audi e-tron* can charge using both alternating and direct current and is the first series-production vehicle with a charging capacity of up to 150 kW. It owes this to its highly efficient thermal management.

The J1 performance platform – the first e-tron GT concept

Audi presented the e-tron GT concept showcar at the 2018 Los Angeles Auto Show, offering a near-production-level outlook on the future high-performance Gran Turismo. The e-tron GT concept functions as a "signature car" for the brand with the four rings and demonstrates

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impressively how emotional electric mobility can be. It sparks customers' enthusiasm with its sporty and emotional design and provides a fascinating technological experience. Audi is using the J1 performance platform developed by Porsche as the technical basis.

The Audi e-tron GT concept showcar is equipped with two permanently excited synchronous machines (PSM) that output a system performance of 590 metric hp (434 kW) and 830 Nm (*612.2 lb-ft*) of torque. The four-door GT is propelled from zero to 100 km/h (*62.1 mph*) in 3.5 seconds and reaches 200 km/h (*124.3 mph*) in just over 12 seconds, before propulsion ends at 240 km/h (*149.1 mph*). If necessary, the Audi e-tron GT concept can be charged in a short space of time. The high-voltage system is designed for a voltage of 800 volts and allows the battery to be charged to 80 percent in about 20 minutes at a DC terminal with an output of 350 kW. In accordance with the WLTP standard, the Audi e-tron GT concept achieves a range of more than 400 kilometers (*248.5 mi*) on one battery charge.

The battery, which has an energy content of more than 90 kWh, is located in the underbody, between the axles. The battery package is designed with recesses in the rear footwell. This provides a high level of seating comfort for all occupants. This special layout allows the drive battery to be integrated in the vehicle floor despite the low body position that is typical for sports cars, thereby creating a very low vehicle center of gravity. At the same time, this creates comfortable seating ergonomics.

Its lightweight design body and the roof made of carbon fiber-reinforced polymer (CFRP) are built according to the principle of multi-material construction. At 4.96 meters (*16.3 ft*) long, 1.96 meters (*6.4 ft*) wide and 1.38 meters (*4.5 ft*) tall, the near-production-level Audi e-tron GT concept has the proportions of a typical Gran Turismo.

In combination with the low center of gravity, the quattro drive, which is equipped with an electric motor at the front and rear axles, offers ideal conditions for a sports car.

The drive management distributes the torques of the electric motors between the axles as needed and also regulates the wheels separately. The technology layout allows for numerous suspension and performance features, for example all-wheel steering or a sport differential, providing excellent traction and a high level of vehicle dynamics.

Electric motors with different outputs and battery modules with different capacities will be used in series production.

Entering into the world of electric power with Audi: the Audi Q4 e-tron concept on the basis of the MEB

What the modular transversal toolkit (MQB) is for the model range with combustion engines, the modular electrification toolkit (MEB) will be for the all-electric Audi models: The MEB provides the technical basis for the future compact and medium-size class models from Audi. This platform thus provides the entry point into the electric model portfolio of the brand with the four rings.

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By using the group-wide MEB platform, Audi can offer its customers affordable yet technically sophisticated electric models with the unmistakable Audi DNA. Fascinating design, high-quality interior workmanship and a top-of-the-line operating system. The use of maximum platform synergies in the Group makes electric mobility attractive to many new customers in the compact segment. The modular electric drive platform of the Volkswagen Group is designed to be highly versatile and scalable to a high degree. Its matrix extends from SUVs and crossover models all the way to sedans.

As it is designed exclusively for electric drives, the MEB allows customers to experience all the advantages that compact electric motors and lithium-ion batteries in different sizes and capacities offer. The battery systems, electric motors and axle designs form a stringent technology toolkit. In contrast to the current models with combustion engines, the front section is considerably shorter—the front axle and firewall move forward, making the wheelbase and thus the usable interior space considerably larger.

In March 2019, Audi announced the Q4 e-tron concept with a near-production-level showcar at the Geneva Motor Show. It will be the first Audi based on the MEB platform to roll off the line: A compact SUV that fits into the same segment as the conventionally motorized Q3. Its exterior length of 4.59 meters (*15.1 ft*) places it in the upper third of the compact class; thanks to its wheelbase of 2.76 meters (*9.1 ft*), however, its interior is at least at the level of the medium-size class. In terms of interior length, each MEB model thus corresponds to a current vehicle from the next higher category. While the exterior dimensions of the Q4 e-tron concept are comparable to those of the Q3, it offers the interior dimensions of a Q5. The architecture of the dashboard also offers new design opportunities.

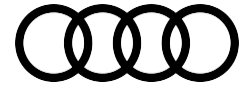
Of course the MEB platform also offers different performance levels and drive layouts. In addition to the typical quattro all-wheel drive with an electric motor at the front and rear axles, there will also be a drive variant with a rear-mounted engine and rear-wheel drive for the entry-level variants.

The new basis for luxury: the Premium Platform Electric (PPE)

For its full-size class and luxury models, Audi is relying on a fourth platform: The Premium Platform Electric (PPE) has been designed and developed in cooperation with Porsche from the start. With its special architecture, it provides the conditions needed for ultra-modern technology that satisfies the demanding customer requests in the full-size and luxury class segments.

PPE will take on the role in the world of electric vehicles that the modular longitudinal platform holds in vehicles powered by combustion engines. It is characterized by a high-tech and highly scalable architecture that allows both low- and high-floor vehicles to be realized. Audi is developing various model series on the basis of PPE that will cover the segments from the upper medium-size class to the luxury class as SUVs, Sportbacks, Avants and Crossovers

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with various different vehicle types. In doing so, the brand is also expanding its current model portfolio in the full-size class and luxury segments by adding numerous electric variants.

The technology package on the PPE is generally similar to that of the MEB; in addition, it offers great potential in terms of output and performance. As standard, the vehicles are fitted with one electric motor in the rear; the top-of-the-range models are equipped with a second electric motor at the front axle (PSM or ASM) that allows them to activate all-wheel drive automatically when needed. It will of course also be possible to realize different performance levels and battery capacities on the PPE platform. Like in the Audi e-tron GT concept, the state of charge is 800 volts; in combination with high-efficiency thermal management, it enables a high charging capacity of 350 kW.

The dimensions and overhangs of the low-floor Audi models on the PPE platform will be slightly shorter than those of the current combustion engine models on MLB basis but will offer greater interior length. As is typical for electric models, there are no transmission or center tunnels. As traditional premium vehicles, the PPE models can be equipped with numerous high-end technologies: In the drive area, torque control takes place via torque vectoring, while the typical Audi features of air suspension or all-wheel steering are provided in the suspension area.

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Fuel consumption of the models listed

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Audi e-tron 55 quattro:

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CO₂ emissions combined in g/km: 0



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Clever combination: the Audi plug-in hybrids

Ingolstadt, September 23, 2019 – In all-electric operation, they are locally emissions-free, efficient and sporty all at once: The new plug-in hybrid models for the medium-size to luxury class constitute an important element of Audi’s electrification strategy. They combine a gasoline engine with a powerful electric motor and a lithium-ion battery. This combination of sportiness and efficiency is unique in the competitive environment: Thanks to their high overall system performance, the plug-in hybrids convince customers with their sporty driving performance. At the same time, the predictive operating strategy adjusts the electric and conventional drive types such that customers benefit from a great electric range and low gasoline consumption.

Audi’s plug-in hybrid initiative: models and equipment variants

Audi is expanding the portfolio of the A7, A8, Q5 and Q7 model series consistently: with plug-in hybrids ranging from the medium-size class to the luxury class. A novelty in the premium segment: Audi is offering two model variants of the PHEV models Q5, A7 Sportback and Q7: a comfort model and a performance version with a greater system performance and sporty equipment options. With the A8, customers can choose between a PHEV variant with a long wheelbase, the A8 L 60 TFSI e Quattro, and a version with a normal wheelbase that will be introduced later on. The A8 and Q7 are fitted with a 3.0 V6 TFSI engine, while the A7 Sportback* and the Q5* have a 2.0 TFSI under the hood. Given that the four-cylinder variants have a system output of up to 367 metric hp and the six-cylinder variants have an output of up to 456 metric hp, the Audi plug-in hybrids are among the most powerful vehicles in the competitive field.

The new PHEV models from Audi fascinate customers with their versatile character. On curvy roads, they impress with sporty and dynamic driving performance, enabled by the combination of quattro drive, a torquey electric motor and a powerful gasoline engine. They enable locally emissions-free mobility in the city and extensive stretches with a long range and reduced consumption on long-distance journeys. This makes them ideal for commuters and company car drivers in particular. The electric-only range accounts for more than 40 kilometers (24.9 mi) in the WLTP cycle for every model. With the E license plate under the German Electric Mobility Act, owners also enjoy tax advantages and municipal road privileges.

The equipment, data and prices stated here refer to the model range offered for sale in Germany. Subject to change without notice; errors and omissions excepted.

* The fuel consumption values of all models named and available on the German market can be found in the list provided at the end of this MediaInfo.

**Fuel consumption and CO₂ emission figures given in ranges depend on the tires/wheels used as well as the selected equipment



Powertrain and battery

In line with the vehicle segment and vehicle type, Audi is relying on custom-made powertrains for its plug-in hybrids. Given that the aim was to generate the optimum system output for each model, the focus during development was on the harmonious interaction of the different drive components.

The two top models—the Q7 60 TFSI e quattro and the A8 L 60 TFSI e quattro are fitted with the 3.0 TFSI. The turbocharged V6 has an output of 250 kW (340 metric hp) and 500 Nm (*368.8 lb-ft*) of torque. The system output of the A8 is 330 kW (449 metric hp), and that of the Q7 is 335 kW (456 metric hp); the system torque is 700 Nm (*516.3 lb-ft*). The electric motor is a permanently excited synchronous machine (PSM) with 350 Nm (*258.1 lb-ft*).

The PHEV models of the Q5 55 TFSI e quattro (combined fuel consumption in l/100 km^{**}: 2.4–2.0 (*98.0–117.6 US mpg*); combined CO₂ emissions in g/km^{**}: 53–46 (*85.3–74.0 g/mi*)) and A7 Sportback 55 TFSI e quattro (combined fuel consumption in l/100 km^{**}: 2.1–1.9 (*112.0–123.8 US mpg*); combined CO₂ emissions in g/km^{**}: 48–44 (*77.2–70.8 g/mi*)) are 5.6 seconds and 250 km/h (*155.3 mph*) product lines are fitted with a 2.0 TFSI that outputs 185 kW (252 metric hp) and 370 Nm (*272.9 lb-ft*) of torque. The system torque already reaches its maximum of 500 Nm (*368.8 lb-ft*) at 1,250 rpm. The PHEV models with a four-cylinder combustion engine also deliver a sporty performance paired with low consumption. The Q5 55 TFSI e quattro (combined fuel consumption in l/100 km^{**}: 2.4–2.0 (*98.0–117.6 US mpg*); combined CO₂ emissions in g/km^{**}: 53–46 (*85.3–74.0 g/mi*)) accelerates from zero to 100 km/h (*62.1 mph*) in 5.3 seconds and reaches a top speed of up to 239 km/h (*148.5 mph*). The values for the A7 Sportback 55 TFSI e quattro (combined fuel consumption in l/100 km^{**}: 2.1–1.9 (*112.0–123.8 US mpg*); combined CO₂ emissions in g/km^{**}: 48–44 (*77.2–70.8 g/mi*)) are 5.6 seconds and 250 km/h (*155.3 mph*).

The power for the electric motor is generated by a liquid-cooled lithium-ion battery located beneath the luggage compartment floor. It stores 14.1 kWh (Q7: 17.3 kWh) of energy at a voltage of 385 V.

The plug-in hybrids are equipped with quattro drive as standard

Maximum traction, even with poor road surface and weather conditions, and high agility, even with a sporty driving style: As is typical for Audi, quattro drive is a must in the plug-in hybrids. The power is transmitted via all four wheels as standard in all new plug-in hybrid models, in the six-cylinder models with permanent quattro and in the four-cylinder models with quattro ultra. With quattro ultra, the vehicle is generally powered via the front axle, with the rear axle being activated via the clutch predictively and depending on the situation. This is particularly efficient in calm driving situations and also safe and dynamic when necessary. The other PHEV models are equipped with a quattro center differential with purely mechanical regulation that

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distributes the torque between the front and rear axles at a ratio of 40:60 in normal driving operation. When required, it transfers the majority of the drive torque to the axle with the better traction.

In all new plug-in hybrid models from Audi, the electric motor of the hybrid powertrain is integrated in the transmission and positioned between the combustion engine and the transmission. The hybrid module consists of the electric motor and a separator clutch that connects the TFSI engine with the powertrain. The separator clutch is located directly upstream of the transmission: The Q5 and A7 are fitted with the seven-speed S tronic, while the other models feature the eight-speed tiptronic.

Battery management: recuperation, gliding and boost

The powertrain strategy is tuned so as to provide the driver with the most versatile driving experience possible. It is maximally efficient with a large amount of electric driving while the boost and torque electric motor also make it very sporty when necessary.

The electric motor performs most of the decelerations in everyday driving. Starting from medium-heavy brake operations in the area above 0.3 *g*, the electric motor and the hydraulic wheel brakes work together. Sophisticated vehicle tuning ensures that the transition between the alternator and wheel brakes (“blending”) is barely perceptible and that the power in the brake pedal is easy to modulate. The control of the powertrain allows a recuperation power of up to 80 kW during brake operation.

The electric motor assists the combustion engine through the boost function, whose characteristic depends on the drive program selected. Depending on the model and engine configuration, it now reaches 500 Nm (*368.8 lb-ft*) (Q5, A7) and 700 Nm (*516.3 lb-ft*) (Q7, A8), respectively—200 Nm (*147.5 lb-ft*) more than the TFSI can achieve alone.

When the driver takes their foot off the accelerator, drive management selects the best of the three possibilities for the situation: In the speed range up to 180 km/h (*111.8 mph*), the new PHEV models can glide with the TFSI engine deactivated. The combustion engine responds quickly and is started up almost imperceptibly by the electric motor alone.

In transmission stage “S”, which is preselected in the “dynamic” drive select profile, the electric motor always remains active in overrun mode and recuperates energy. In the other settings that involve cooperation with the predictive efficiency assist, recuperation takes place whenever it is more sensible from an energy perspective than gliding operation. Recuperation ranges up to around 0.1 *g* of deceleration and a charging capacity of 25 kW.

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The predictive efficiency assist (PEA) and predictive operating strategy (PBS)

The predictive operating strategy is the technological centerpiece of the PHEV models. It enables the vehicle to achieve a long electric range and excellent recuperation power. The customer can clearly feel the ride comfort and ease of operation.

The PEA regulates the drive and recuperation behavior depending on the situation on the basis of immediate and nearby parameters of the predictive route data. These include upcoming town signs, intersections, roundabouts, the topography, which includes corners, uphill and downhill gradients, known speed limits, but also vehicles driving in front that are detected by the radar sensor. It informs the driver by means of corresponding displays and provides a haptic impulse via the accelerator pedal to remind them to take their foot off the gas.

The PBS regulates the drive and recuperation behavior throughout long-term route planning. It takes sections on the route that are driven on highways, on country roads and in cities into account when calculating the most efficient powertrain strategy, as well as the current traffic situation along the route, known speed limits and topological data. The PBS is activated automatically with the route guidance of the navigation system. The PBS constantly evaluates the route data, taking real-time events like traffic jams or dense city traffic into account, and adapts its calculations to the driver's style. Based on this data, the PBS creates a plan for the entire route with the aim of driving with maximum efficiency, using electric power in the city and reaching the destination with an almost empty battery. After all, the aim is to use as much electric energy as possible.

The driver can choose from three driving modes:

Besides Hybrid mode, which runs as standard when route guidance is active, the driver can also choose between the EV and Battery Hold modes. In EV mode, the car is driven exclusively electrically as long as the driver does not depress the accelerator past a variable, perceptible pressure point. EV mode is the base setting each time the vehicle is started. In Battery Hold mode, battery capacity is held at the current level. Nevertheless, there are also purely electric sections in this mode, too.

Comfortable climate: thermal management and the heat pump

The new plug-in hybrid models are equipped with sophisticated thermal management that enables a long electric range and speedy interior temperature control. The TFSI engine, its ancillary equipment and the transmission are cooled by a high-temperature circuit. The battery, the charger, the electric motor and the performance electronics are cooled via a low-temperature circuit.

A heat pump that can generate a heat output of up to 3 kW with 1 kW of electric energy is integrated in the thermal management of the A7 and Q5. It is coupled with the refrigerant

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circuit of the air conditioning system and uses the waste heat of the high-voltage components to heat the interior.

Convenient charging

The standard equipment includes the charging system compact with a cable for domestic and industrial power sockets, as well as a control panel. Upon request, Audi also provides a lockable wall mount. When using a connection with an output of 7.4 kW, it takes around two-and-a-half hours to fully charge the 14.1 kWh battery, and it takes around six-and-a-half hours to charge it using a 230 V domestic power socket.

A mode 3 cable with a type 2 plug, which is also standard equipment, is used for charging the battery at public charging terminals. A charging service owned by Audi, the e-tron Charging Service, grants access to a large number of public charging stations in 19 European countries on request. Customers can use a single card to charge at terminals from numerous different providers.

The myAudi app allows customers to use the services from the Audi connect portfolio on their smartphones. This includes: Checking the battery and range status, starting charging procedures, programming the charge timer and getting an overview of the charging and consumption statistics.

Another function of the myAudi app is pre-entry climate control prior to departure. This is possible because the air conditioning system compressor and the auxiliary heater in the car are powered electrically. Customers can specify the exact temperature to which the interior is to be heated or cooled. Depending on the model and equipment, heating of the steering wheel, seats, mirror, windshield and rear window as well as the seat ventilation can be activated via the pre-entry climate control.

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Fuel consumption of the models listed

(Fuel consumption, electricity consumption and CO₂ emissions figures given in ranges depend on wheels/tires and the chosen equipment level)

Audi A7 55 TFSI e quattro:

Combined fuel consumption in l/100 km: 2.1-1.9 *(112.0-123.8 US mpg)*;

Combined electrical consumption in kWh/100 km: 18.1-17.5;

Combined CO₂ emissions in g/km: 48-44 *(77.2-70.8 g/mi)*

Audi Q5 55 TFSI e quattro:

Combined fuel consumption in l/100 km: 2.4-2.0 *(98-117.6 US mpg)*;

Combined electrical consumption in kWh/100 km: 19.1-17.5;

Combined CO₂ emissions in g/km: 53-46 *(85.3-74.0 g/mi)*



The specified fuel consumption and emission data have been determined according to the measurement procedures prescribed by law. Since 1st September 2017, certain new vehicles are already being type-approved according to the Worldwide Harmonized Light Vehicles Test Procedure (WLTP), a more realistic test procedure for measuring fuel consumption and CO₂ emissions. Starting on September 1st 2018, the New European Driving Cycle (NEDC) will be replaced by the WLTP in stages. Owing to the more realistic test conditions, the fuel consumption and CO₂ emissions measured according to the WLTP will, in many cases, be higher than those measured according to the NEDC. For further information on the differences between the WLTP and NEDC, please visit www.audi.de/wltp.

We are currently still required by law to state the NEDC figures. In the case of new vehicles which have been type-approved according to the WLTP, the NEDC figures are derived from the WLTP data. It is possible to specify the WLTP figures voluntarily in addition until such time as this is required by law. In cases where the NEDC figures are specified as value ranges, these do not refer to a particular individual vehicle and do not constitute part of the sales offering. They are intended exclusively as a means of comparison between different vehicle types. Additional equipment and accessories (e.g. add-on parts, different tyre formats, etc.) may change the relevant vehicle parameters, such as weight, rolling resistance and aerodynamics, and, in conjunction with weather and traffic conditions and individual driving style, may affect fuel consumption, electrical power consumption, CO₂ emissions and the performance figures for the vehicle.

Further information on official fuel consumption figures and the official specific CO₂ emissions of new passenger cars can be found in the “Guide on the fuel economy, CO₂ emissions and power consumption of new passenger car models”, which is available free of charge at all sales dealerships and from DAT Deutsche Automobil Treuhand GmbH, Hellmuth-Hirth-Str. 1, D-73760 Ostfildern, Germany and at www.dat.de.

The Audi Group, with its brands Audi, Ducati and Lamborghini, is one of the most successful manufacturers of automobiles and motorcycles in the premium segment. It is present in more than 100 markets worldwide and produces at 18 locations in 13 countries. 100 percent subsidiaries of AUDI AG include Audi Sport GmbH (Neckarsulm), Automobili Lamborghini S.p.A. (Sant’Agata Bolognese, Italy) and Ducati Motor Holding S.p.A. (Bologna, Italy).

In 2018, the Audi Group delivered to customers about 1.812 million automobiles of the Audi brand, 5,750 sports cars of the Lamborghini brand and 53,004 motorcycles of the Ducati brand. In the 2018 fiscal year, AUDI AG achieved total revenue of €59.2 billion and an operating profit before special items of €4.7 billion. At present, approximately 90,000 people work for the company all over the world, more than 60,000 of them in Germany. Audi focuses on sustainable products and technologies for the future of mobility.
