Mercedes-Benz

Electric mobility: Mercedes-Benz flips the switch

Press Information

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Generation EQ – mobility revisited

Paris/Stuttgart. With "Generation EQ", Mercedes-Benz shows how electric cars can soon move into the fast lane: the concept vehicle, with the appearance of a sporty SUV coupé, gives a preview of a new generation of vehicles with battery-electric drives. The dynamic exterior design with its new electro-look underlines the focus on the powerful electric drive system: two electric motors, with a system output that can be increased to up to 300 kW thanks to scalable battery components, and permanent all-wheel drive deliver the guarantee of dynamic high-level performance. With a range of up to 500 kilometres and the typical Mercedes strengths of safety, comfort, functionality and connectivity, "Generation EQ" meets every demand in terms of contemporary, sustainable mobility. Also on the inside, the vehicle offers innovative solutions, including a completely new interior concept. Celebrating its world premiere at the Paris Motor Show, "Generation EQ" is the forerunner of Mercedes-Benz's new product brand for electric mobility, EQ. The name EQ stands for "Electric Intelligence" and is derived from the Mercedes-Benz brand values of "Emotion and Intelligence".

"The mobility of the future at Mercedes-Benz will stand on four pillars: **C**onnected, **A**utonomous, **S**hared und **E**lectric. 'Generation EQ' is the logical fusion of all four pillars," says Dr Dieter Zetsche, CEO of Daimler AG and Head of Mercedes-Benz Cars. "The emission-free automobile is the future. And our new EQ brand goes far beyond electric vehicles. EQ stands for a comprehensive electric ecosystem of services, technologies and innovations."

Electric-vehicle architecture for all models

The new generation of electric vehicles will be based on an architecture developed specifically for battery-electric models, which is scalable in every respect and usable across all models: the wheelbase and track width as well as all other system

components, especially the batteries, are variable thanks to the modular building-block system. The vehicle concept is thus optimised to meet every requirement of a future-oriented, battery-electric model family. The basic architecture is suitable for SUVs, saloons, coupés, cabriolets and other model series.

Similarly to the latest series-produced models from Mercedes-Benz, the vehicle architecture builds on an intelligent multi-material mix of steel, aluminium and carbon fibre. This ensures that the requirements in terms of lightweight design, strength and cost efficiency are ideally met.

Exterior design with new electro-look

"Generation EQ is hot and cool," says Gorden Wagener, Head of Design at Daimler AG. "Its fascination lies in a reinterpretation of our design philosophy of sensual purity, the aim being to create an avant-garde, contemporary and distinctive electro-look. At the same time, the design of the visionary show car, which has been reduced to the essentials, reveals an alluring progressivity."

The monolithic basic form of "Generation EQ" unites the genes of an SUV with the dynamic character of a coupé and a dash of shooting brake at the rear end. The squat, elongated greenhouse gives rise to muscular-purist proportions. The new electro-look is the result of a flowing transition from the gleaming black bonnet across the windscreen to the dark-tinted panoramic roof – an exciting contrast to the alubeam silver paintwork.

Scarcely visible body panel joins, concealed windscreen wipers, cameras instead of exterior mirrors and an absence of conventional door handles emphasise the stretched, dynamic silhouette, making the SUV crossover appear as a unified whole while reducing its air resistance. An intentionally reduced side view, broad shoulders and large 21-inch light-alloy wheels make for a dynamic presence even before the vehicle moves off.

Driver-oriented cockpit with new electro-look

The focus of the driver-oriented cockpit is on simple, touch-based controls with a new electro-look consistently reflecting the exterior styling. The asymmetrical design of the instrument panel with its large, floating wide-screen display is tailored to the driver. The innovative, digital user experience differentiates "Generation EQ" from the familiar control logic in today's vehicles, while giving a peek into the future of user interaction at Mercedes-Benz.

Interior with new, touch-based controls and no knobs

The interior of "Generation EQ" is characterised by contemporary luxury, this finding its main expression in an all-new user interface, which combines emotive appeal with intelligence and user-friendliness while dispensing with traditional switches and knobs, except for the electric seat adjustment typical of Mercedes. Two of the three narrow spokes on the steering wheel are provided with touch controls, which are integrated into OLED displays (OLED = organic light emitting diode). They indicate icons and symbols in the respective menus. The driver can swipe through the various menus and confirm their selection with a click.

The 24-inch (53 x 11 cm) TFT high-definition wide-screen display presents all the relevant information, such as speed, range, driving data or navigation and map details. The innovation is apparent from the differentiation between a highly reduced and a complex display, including intermediate stages. Whether there is a low information density with a very clean look to the display, or whether extra content is on view, is left to the driver's personal preference.

User interface design with individualised content

The information density can be increased step-by-step from a digital display and built up into a single- or dual-tube instrument containing more detailed information and feedback on speed and range. These modular displays allow the content to be individualised. An attractive user interface design is ensured by, among other things, a world of colours in electric blue, white and rose gold – the colours of the instrument displays adapt, depending on driving mode or charging process, to allow fast and intuitive recognition.

Bordered in rose gold, the centre console appears to float in space: dispensing with mechanical controls, it is equipped with touch-sensitive elements. Similarly to the touch controls on the steering wheel, the driver can use a finger to operate the automatic climate control and the infotainment system. As "Generation EQ" is devoid of conventional exterior mirrors, cameras are used to project an image of the traffic behind onto integrated displays in the doors. Both the door openers and the electric window lifters are touch-controlled.

Avant-garde, functional interior

"Generation EQ" comes with four individual seats. The reduced volume, impression of floating in space and avant-garde seat upholstery layout make for a visual lightness. A tailored sound experience is provided by speakers integrated into the head restraints. The side bolsters are covered in light-white leather, while perforations with a pixel rain look reveal a view of particles in rose gold. Stitching with a PCB look on the deep-brown centre sections produces an exciting contrast. TFT monitors for rear-seat entertainment are integrated into the front backrests.

EQ: the new electric mobility brand from the inventor of the automobile

EQ offers a comprehensive electric mobility ecosystem with products, services, technologies and innovations. The spectrum ranges from electric vehicles to wallboxes and charging services to home energy storage units. Mercedes-Benz will market future battery-electric vehicles under the brand name EQ. The name stands for "Electric Intelligence" and is derived from the Mercedes-Benz brand values of "Emotion and Intelligence". The new brand encompasses all key aspects for customer-focused electric mobility and extends beyond the vehicle itself. Future models will embody the essentials of state-of-the-art electric mobility: the fusion of emotively appealing and intelligent design, exceptional driving pleasure, high everyday practicality and maximum safety, a hallmark of every vehicle from the inventor of the automobile.

The close-to-production concept vehicle "Generation EQ" marks the launch of an architecture for battery-electric vehicles across all models. Dieter Zetsche: "In 2007, the e-smart was a pioneer of electric motoring. We're now flipping the switch. We're ready for the launch of an electric product offensive that will cover all vehicle segments, from the compact to the luxury class."

Both inside and outside: new light signature for electric cars

With a new exterior and interior light signature, the inventor of the automobile presents the design trend for future electric vehicles with the star: the distinguishing mark of "Generation EQ" is the "Black Panel" front grille: the white-illuminated Mercedes star and all the light elements are integrated in this seamlessly glazed design element. The blue-illuminated surround gives a completely new interpretation of the typical Mercedes radiator grille. Illuminated LED optical fibres in electric blue produce a light show with exciting touches of colour.

The peripheral light strip of the "Black Panel" is equally typical of "Generation EQ". Embedded in it are the white, powerful LED headlamps. Viewed from the side, the flowing E-line and beltline form a frame around the base of the mirror camera. Touches of rose gold in the chrome-plated E-line moulding and the spokes of the 21-inch wheels serve as a special eye-catching transition from interior to exterior.

The rear lamps are of matching design, taking up the contour of the "Black Panel" and surrounded by an LED optical fibre in electric blue, which changes to red when the vehicle is moving and acts as a tail light. The central Mercedes star at the rear end is likewise illuminated in white. Similarly to the front end, the clasp-like light signature on the outside changes to orange as soon as the direction indicator is operated.

Lighting mood: from welcome scenario to electric blue

As the driver approaches the car, it automatically activates to welcome him or her with a specific colour mood in the interior. The welcome scenario is rounded off by digital light in the perforated interior door panels. Once the driver has taken their place, the lighting mood switches to electric blue, with the lights in the doors and on the seats dimming slowly. The wide-screen display gradually builds up to present the energy level. The navigation map shows all the destinations that can be reached on the current battery charge.

Adaptive ambience lighting for a feel-good atmosphere

A special feel-good atmosphere is produced by the adaptive ambience lighting on board "Generation EQ". There are lighting elements in the light strip underneath the windscreen, on the side and middle air vents, seats, door handles and interior door panels, on the centre console and around the Mercedes star in the steering wheel.

Powerful electric drive: 300 kW total output with a range of up to 500 kilometres

With two electric motors on the front and rear axles and a battery in the vehicle floor, "Generation EQ" embodies a powerful vehicle concept. The basis for dynamic high-level performance and safety comes courtesy of the electric all-wheel drive with axle-variable torque distribution and a battery installed deep in the vehicle floor between the axles. With a total output of up to 300 kW in the most powerful variant and a maximum torque of up to 700 Newton metres, "Generation EQ" accelerates to 100 km/h in under five seconds. In combination with the intelligent

operating strategy from Mercedes-Benz, "Generation EQ" has a range of up to 500 kilometres.

In the transfer to series production, Mercedes-Benz benefits not only from its in-house development and production expertise, but also from the Group's cross-model-series modular strategy for alternative drive systems and direct access to key components for electric mobility. The high-efficiency lithium-ion battery originates from the Daimler subsidiary Deutsche ACCUMOTIVE. Thanks to their modular design, the innovative battery systems have a model-specific total capacity of over 70 kWh.

Convenient charging at home and on the road

"Generation EQ" brings together the latest-generation charging technologies. The vehicle is ready both for charging at home by induction or wallbox and for fast charging. Mercedes-Benz energy storage units of the future could form an ideal symbiosis with the cordless charging system via induction or wallbox. Households that have their own photovoltaic system and which store their surplus solar power in a Mercedes-Benz energy storage unit can thus benefit from a "green" source of power that is extensively independent of the energy market.

Significantly reduced charging times will come with the introduction of fast charging by the Combined Charging System (CCS). This European charging standard allows for fast charging with a far greater capacity than at present. Currently, charging capacities from 50 up to sometimes 150 kW are possible. In the medium to long term, a charging capacity of even up to 300 kW is planned. This would enable sufficient power for 100 locally emission-free kilometres to be recharged within five minutes.

Driver assistance systems for maximum safety

It goes without saying that "Generation EQ" also features the latest driver assistance systems from Mercedes-Benz. Using highly accurate maps from our partner HERE, the systems know such things as the precise curve radii as well as the position and size of a roundabout. The vehicle can then automatically adjust the speed and driving dynamics to give the driver even greater comfort and relaxation. EQ thus takes a further step on the road to autonomous driving, always under the premise of safety and in compliance with the statutory regulations. There is a special focus on the optimised interplay between the individual features, so-called "sensor fusion", i.e. the intelligent combination of data from different

sensors. In the opinion of experts at Mercedes-Benz, this is one of the key requirements on the way to automated driving.

Extended communication by Car-to-X technology

But the engineers have gone one step further: for example, "Generation EQ" is equipped with Car-to-X technology and can exchange information with the infrastructure and other vehicles – an ideal basis for a series of new driver assistance features that build on existing systems and thus take a further step in the direction of accident prevention. It is also helpful for the driver to be informed about nearby recharging opportunities. As soon as "Generation EQ" realises that the destination cannot be reached on the available battery charge, it advises the driver of appropriate options on the navigation map.

3D real-time map display from HERE

Yet the digital interface can do considerably more: another highlight is the high-detail 3D city view with its trendsetting design. Technically, it is based on the map platform from HERE. This makes it possible, for example when searching for points of interest, for restaurants, shopping opportunities and tourist attractions to be especially highlighted. Other buildings recede elegantly into the background. A further focus in the design of the new HERE maps lies in reduced visual complexity while the vehicle is in motion. This means that the driver can see only those buildings and information that are relevant for navigation. There is an exceptional interplay between cockpit and map, with the buildings on the map reflecting details of the instrument lighting. At the same time, the map display also gives a preview of new features, especially for electric vehicles: the driver is provided with information on charging stations as well as opportunities for inductive charging along the route. The high-detail display also includes an indication of the current energy consumption along the route.

Intelligent driver assistance

The focus of the user interface is on optimal driver assistance, such as when the main concern is to make best possible use of the available energy in the batteries in order to achieve the best possible range. The innovative consumption display provides the driver with feedback on their driving style while drawing attention to energy-saving possibilities.

Additional driver incentives are conceivable: the wide-screen display can be used to tell the driver that the current range is not just sufficient to reach the desired destination, but would also allow a detour for a spur-of-the-moment visit to friends. In addition, the driver can collect bonus kilometres as a reward for especially efficient use of the traction battery – a functionality similar to the one already familiar from current models. The trick is that the collected bonus kilometres make the occupants aware of the attractions or interesting places they can reach from the current location thanks to their driving style.

Contacts:

Koert Groeneveld, tel. no.: +49 (0)711 17-92311, koert.groeneveld@daimler.com
Christoph Sedlmayr, tel. no.: +49 (0)711 17-91404, christoph.sedlmayr@daimler.com

More information about Mercedes-Benz is available online at:
www.media.daimler.com and www.mercedes-benz.com