



Mercedes-Benz

Press Information

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The Mercedes-Benz SUSTANEER: An innovation driver for sustainable urban mobility

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Further information on the official fuel consumption and the official specific CO₂ emissions of new passenger cars can be found in the "Guide to Fuel Consumption, CO₂ Emissions and Electricity Consumption" for new passenger cars, which is available free of charge at all sales outlets and from Deutsche Automobil Treuhand GmbH at www.dat.de.

The Mercedes-Benz SUSTAINER: An innovation driver for sustainable urban mobility

- Technology demonstrator with innovative solutions to enhance quality of life and road safety in cities, protect the climate, conserve resources, and improve driver health and safety
- Fine particle filters on the front module and underbody reduce emissions by more than 50 percent
- Energy from the solar roof enables range to be extended by several thousand miles per year
- Innovative use of recycled materials demonstrates the potential of a circular economy
- Increased thermal efficiency through heating close to the body increases comfort and extends vehicle range
- As of the second half of 2022 Mercedes-Benz Vans will be successively rolling out a sustainable repair concept for high-voltage batteries in all van segments

Stuttgart. Last-mile vans that are climate neutral, produce their own green electricity and can actively improve the air quality in cities: with its technology demonstrator, the SUSTAINER (**SUSTAINABILITY PIONEER**), Mercedes-Benz Vans is providing us with a tangible impression of just how sustainability in urban delivery operations may look in the future. The fully electric van based on the Mercedes-Benz eSprinter combines a variety of innovative solutions designed to improve the quality of life in cities, to conserve resources and protect the climate, and to better the health and safety of the driver and other road users. These include a fine particle filter on the front module and underbody, a solar panel on the roof, component parts made of recycled materials as well as a heating system which is close to the body. The innovations and technical solutions that the SUSTAINER is fitted with have been designed with the possibility of series production in mind, so that their use in future Mercedes-Benz Vans vehicle generations is feasible.

Sustainable business strategy covering the full life cycle

Mercedes-Benz is convinced of the ecological and economic advantages of battery-electric vans and is preparing to go fully electric before the end of the decade – wherever market conditions allow. As part of the “Ambition 2039” business strategy, Mercedes-Benz Vans is pursuing the objective of making the fleet of private and commercial vans carbon neutral throughout their complete life cycle – from the development phase through to the supply network, from the company’s own manufacturing processes and the electrification of products through to the use of renewable energy for the operation of electric vehicles. As of 2022, production will be carbon neutral at all company-owned van factories worldwide from 2022 and only use electricity from renewable energy sources.

Locally emission-free in every segment, from “electric first” to “electric only”

Mercedes-Benz Vans has firmly anchored its leadership aspiration for electromobility in its strategy and is systematically electrifying all model series. Customers, fleet operators and vehicle body builders can already choose from four battery-electric models: the eVito panel van, the eSprinter, the eVito Tourer and the EQV. In the coming year, the portfolio of electric vehicles will be extended to include the small vans segment with the addition of the eCitan and the EQT. This will make Mercedes-Benz the only manufacturer in the world to offer a locally emission-free model in all van segments – and that is only the next step on the way to a fully electric future. From the middle of the decade on, all new vehicle architectures will be electric only. To this end, Mercedes-Benz Vans is developing a completely new electric only van architecture called VAN.EA.

In 2022: Mercedes-Benz Vans will roll out a sustainable repair concept for batteries

In the second half of 2022, Mercedes-Benz will successively roll out a sustainable repair concept in all van segments to prolong the life cycle of the high-voltage batteries installed in its vehicles. To the three Rs in the circular economy of “reduce”, “reuse”, “recycle”, a fourth can now be added: “repair”. In addition to this, Mercedes-Benz Vans is also pushing for batteries to be recycled to the greatest extent possible. By 2030, the aim is to reduce the use of primary resources used in drive systems and battery technology by 40 percent compared with today’s figure. To protect human rights, the automotive manufacturer will only procure battery cells containing lithium and cobalt from certified mines in the future. Furthermore, every stage of the battery cell providers’ supply chains will be inspected according to OECD guidelines.

“Cleaner, quieter, safer and simpler”

“If you want to stay on the road to success long term, you have to live sustainability and anchor that in your business strategies. And that’s exactly what we do at Mercedes-Benz Vans, because we want to create sustainable value – economically, ecologically and socially”

“An important foundation of our strategy is sustainability. We are 100 percent convinced of the environmental and economic advantages of our electric vans. Following the path towards “electric only” is therefore the only logical and consistent approach for us.”

“For Mercedes-Benz Vans, the responsible use of resources is both an aspiration and an incentive. From 2022 on, we will therefore successively roll out a sustainable repair concept in all van segments in order to significantly prolong the life cycle of our drive batteries.”

“The SUSTAINEEER demonstrates the systematic implementation of our sustainable business strategy. It pools together a large number of innovations and solutions from Mercedes-Benz Vans and shows the contribution the commercial transport sector can make to climate neutrality, liveable cities and the conservation of resources.”

Marcus Breitschwerdt, Head of Mercedes-Benz Vans

“Our goal: Innovations and technical solutions must always make a contribution to sustainability and offer added value for drivers and other road users. Only then is a new technology good enough to be installed in a Mercedes-Benz van.”

“The SUSTAINEEER unites innovative solutions for three important objectives that are key to a sustainable, electric and digital future. First, they make life in our cities cleaner, quieter, safer and simpler. Secondly, they conserve resources and protect the environment, and third, they safeguard drivers and other road users. The innovations installed in the technology demonstrator have been developed with a view to their future series implementation at Mercedes-Benz Vans.”

“Delivery vans like the SUSTAINEEER are an important component of urban life. They should therefore make a contribution to sustainable mobility. Our SUSTAINEEER technology demonstrator shows how Mercedes-Benz Vans is pushing sustainable logistics in areas that go beyond electrification and climate-neutral production.”

Ulf Zillig, Head of Development and Product Development Mercedes-Benz Vans

50 percent less fine dust thanks to state-of-the-art filter technology

Front module and underbody filters improve air quality in the city

Air quality is a key factor in the quality of life in urban areas. Along with CO₂ emissions, road traffic also produces significant levels of particle pollution. The SUSTINEER has a series of new features designed to further minimize the production of particles caused by wear from tires, brakes and asphalt. These include two fine particulate filters developed in collaboration with filtration specialists MANN + HUMMEL, low-emission, low-wear brake discs, and tires which are optimized for rolling resistance and therefore have low levels of both noise and wear.

The underbody fine particulate filter is located in the area of the rear axle. This is exactly where one of the biggest concentrations of particulate matter in the vicinity of the vehicle can be found. The passive filter traps the particles stirred up by the moving van and other vehicles. An optimized air duct system ensures the best possible cleansing effect. The filter needs to be replaced once a year.

The second filter is integrated in the front module and works in combination with the existing extractor fan to filter fine particles from the air. This means that it not only purifies the air using the airflow around the vehicle when driving, but also filters particulates from the surrounding air when the vehicle is travelling at low speed or being charged while stationary. Additionally, the vehicle is fitted with a fine particle sensor. This can measure the concentration of fine particles in the air and control the filtration level accordingly in order to maintain a target state. This also allows the vehicle to be used as a mobile monitoring station. The filter elements can easily be removed and replaced during annual servicing.

The front module and underbody filters reduce fine particulate emissions in the direct vicinity of the vehicle up to a particle size of ten micrometres (PM10) by over 50 percent – 35 percent during charging and 15 percent while driving. The efficiency of the filtration system increases further when there is a higher level of particle pollution. This means that in urban areas with poorer air quality, far greater quantities of fine particles can be filtered out.

Low-emission, low-wear cast iron brake discs with ceramic coating

To reduce fine particle emissions from brake wear, the SUSTINEER also has innovative cast iron brake discs with a ceramic coating. By changing the materials in the friction pairing, it is possible to further reduce wear and the associated production of fine particles. This also increases the service life of the components. The combination of a regenerative braking strategy and the ceramic-coated cast iron discs makes the goal of the wear-free brake disc achievable.

The low rolling resistance of the SUSTINEER's tires also helps improve urban air quality. The lower the rolling resistance, the lower the rubber wear and therefore the particle emissions.

Greater range thanks to solar energy from the vehicle roof

Solar panels can supply energy for several thousand additional miles a year

The use of energy from renewable resources is an important factor in the life cycle of an electric vehicle in terms of preventing CO₂ emissions. This is because around 50 percent of the carbon footprint of a battery-electric vehicle comes from the current EU electricity mix during the period of use – in other words, due to the level of CO₂ associated with the charging process. Mercedes-Benz Vans is therefore committing itself to Green Charging in the future, and the SUSTAINER demonstrates the feasibility of a vehicle generating its own green electricity from a solar panel on the roof.

The extremely flat solar panels fit seamlessly to the contour of the SUSTAINER's roof and produce a maximum peak power of 850 Watts (Wp) on a surface of 51.7 square feet. The photovoltaic system is permanently active and continues to produce energy when the ignition is switched off. The annual yield depends on the amount of shade, the intensity of the sun and the geographical location. Instead of using the sustainably generated electricity for extending the vehicle's range, it can also be used for the pre-entry climate control or to operate energy-intensive systems such as the air-conditioning and load compartment cooling systems, or for charging battery-powered tools, smartphones and laptops.

Greater range, lower operating costs: various benefits of the solar roof

The solar panel on the roof brings a number of benefits: drivers and vehicle owners benefit from greater range and lower operating costs. For end customers in the courier, express and parcel services (CEP) sector, it means the carbon footprint of their delivery is reduced, and the environment benefits from the significant increase in the proportion of renewable energy in the vehicle's electricity supply.

As a further measure to protect the climate, commercial customers will be able to charge their vans using clean electricity in the future – similar to Green Charging for passenger cars via Mercedes me Charge. Using high-quality certificates of origin, Mercedes-Benz Vans will guarantee that the energy used to charge electric vans will be matched by an equivalent amount of electricity being fed into the grid from renewable energy sources. The quantities of energy used for charging will therefore be offset by clean electricity after the actual charging process. This will give the customer a period of carbon-neutral use.

Heating close to the body increases thermal efficiency

Innovative climate control concept helps to provide higher range

Because of the high energy requirement due to the large cab and the constant opening and closing of the doors for delivery stops, conventional interior air heating systems have a discernible impact on the range of electric vans. The SUSTAINEEER delivers warmth exactly where it's needed – including the driver's body. On top of that, there are other efficient thermal management measures that could further extend the range of a battery-electric van like the eSprinter – a major benefit for the CEP sector.

Not only the steering wheel but also the seat belt in the SUSTAINEEER can be heated. The seat belt has extremely fine heating filaments with an electrical output of 70 watts woven into it. It provides a pleasant degree of warmth to the upper body, where a particularly large number of temperature receptors are found. The seat belt also has a more rapid warming effect than a heated seat. The temperature is regulated via a separate control unit with three temperature levels.

Thanks to the proximity of the heating function to the body, there is no need to keep a heavy coat on. This reduces the risk of seat belt slack, where the seat belt does not sit closely enough against the body to provide maximum protection. The heated seat belt in the SUSTAINEEER is a refinement of the systems presented in the ESF 2019 experimental safety vehicle – an example of the transfer of expertise and technology within Mercedes-Benz AG. Synergies between the passenger car and van divisions make for a rapid pace of development, and customers benefit from the high level of development of the components used.

The heating close to the body could for example be supplemented by a zonal climate-control system. It only heats or cools the area around the driver, not the entire vehicle interior, especially when it first starts up. This reduces energy use accordingly. Added to this is the intelligent operating strategy of the air-conditioning system, which works on the same principle as a heat pump. As a long-term project, Mercedes-Benz Vans is working on the idea of using waste heat from the electric drivetrain for the heating system. Taken together, all these thermal management measures could contribute to a significant increase in range.

Further potential for efficiency through extensive insulation of the interior

Looking ahead, there is additional potential for Mercedes-Benz Vans to save valuable resources by extensively insulating the vehicle interior. To avoid intensively heating or cooling the cockpit and steering wheel, it is possible to coat the windscreen and side windows with an infrared reflective foil, for example.

Pioneering use of recycled materials

The SUSTAINER demonstrates the potential of the circular economy

Apart from the electric drivetrain, the SUSTAINER offers a look ahead at the potential to conserve natural resources through the increased use of recycled materials. The aim of Mercedes-Benz Vans is to reduce its overall use of resources and promote a circular economy in which existing materials are reused, refurbished and recycled for as long as possible. Good examples of this in the technology demonstrator are the underbody panelling made from recycled polypropylene and used tires, and the UBQ filler material made from recycled household waste. During its STARTUP AUTOBAHN innovation platform, Mercedes-Benz became the first automotive manufacturer to become aware of the Israeli company UBQ.

UBQ's synthetic material is manufactured from all sorts of household rubbish, from food and garden scraps to nappies, paper, cardboard and mixed plastics. The start-up found a way of converting this mixture into a homogeneous material in which the organic waste is broken down into its natural components. The plastic material formed can replace the conventional plastics used in the manufacture of automotive parts. What's more, the UBQ process is highly efficient: it takes place at low temperatures, does not need water and does not generate any by-products or emissions during the conversion process.

The acoustic absorption mat in the underbody panelling was manufactured from textile fibres reclaimed from used tires. Tires are made of rubber, steel and textile fibers, which are separated during the recycling process.

Load compartment with sustainable materials

For the partition between the load compartment and the cab, Mercedes-Benz Vans uses natural straw panels. They are recyclable, biodegradable and formaldehyde-free and can be given a waterproof coating. They are also hardly flammable, despite the fact that the starting material is pure straw. Straw is also an annually regenerating raw material that, as an agricultural by-product, does not compete with food production. The shelf uprights in the load compartment are finished with a water-based paint with a significantly lower proportion of organic solvents. All the wooden parts are FSC-certified – this means that they come from responsibly managed forests. Then there is the steering wheel, which has a cover made from vegan leather.

Quietly through the city

Low-noise travel with electric drive, tires with low rolling resistance and the Speed Delivery Door

Traffic is the main source of noise in many cities. Noise from road traffic is the major component of this, so there is all the more need for deliveries of parcels and goods to be quiet. The SUSTAINEEER confronts this problem with a range of innovations. Along with the low-noise electric drivetrain, it includes tires with low rolling resistance and the Speed Delivery Door developed by Mercedes-Benz Vans. This not only provides benefits in terms of ergonomics and efficiency, it also opens and closes much more quietly than conventional sliding doors.

To save energy and extend range, the SUSTAINEEER is fitted with tires that have low rolling resistance. They have another important advantage as far as quality of life in the city is concerned: their lower level of noise emission. This is all the more important as the main source of noise from vehicles is tire noise at speeds over 21 mph.

Low-noise, safe, convenient and time saving: the Speed Delivery Door

The sensor-controlled Speed Delivery Door also represents an improvement to quality of life in the city. Mercedes-Benz Vans already offers the system for the Sprinter. This is an automatic, sensor-controlled double swivelling door on the front passenger seat side, which replaces the side sliding door to the load compartment on request. A light barrier detects the driver as soon as he or she leaves the seat and enters the load compartment. The Speed Delivery Door unlocks itself and opens automatically and quietly, a bonus for residents in the city compared with the noise of a sliding door – especially if dirt has collected in the door track over time.

From the inside, the Speed Delivery Door is transparent. The driver therefore has a view of the pavement and cycle path before climbing out. Additionally, there is a monitor on the door that displays the image from the electronic Mirror Cam which replaces the conventional exterior mirrors. In this way, the system makes a major contribution to safety – both for the driver and other road users. The risk of collision with passers-by, in particular cyclists, is significantly reduced.

The Speed Delivery Door is also a response to the boom in ecommerce. It represents a significant bonus for the delivery driver in terms of ergonomics. The sensor-controlled automatic unlocking and opening function saves time and is a tangible aid for the driver, who can pick up the parcels in the load compartment and leave the vehicle without needing to use a door handle. The door closes automatically once the driver is out. There is no longer any need to put parcels down and pick them up again as would be the case with a conventional sliding door. On a delivery round with 150 stops the time saved can add up to 25 minutes. As a further advantage, passers-by cannot see into the vehicle from the outside.

Saving energy with efficient route planning

Intelligent software and communications solutions for sustainable delivery transport

Fleet managers in the CEP sector often have special logistic and navigation software needs. Mercedes-Benz is working on the development of the new STAGE platform to get their individual software solutions into their vehicles. It will allow any desired Android applications to be used safely in the vehicle without distracting the driver. In the SUSTAINEEER, Mercedes-Benz Vans is testing the use of such apps in the MBUX infotainment system for the first time. Efficient route planning that takes the real-time traffic conditions into account will contribute to lower energy consumption in delivery transportation and reduce fine particle emissions.

STAGE consists of a plug-and-play hardware device and a web service called the Control Center. The aim is to use Android apps directly in the MBUX infotainment system. The advantage: additional devices such as smartphones or tablets will no longer be required. Use cases will range from passenger transport to emergency vehicles and parcel and courier services. The Control Center will enable fleet managers to specify which vehicles should have access to which apps. In addition, the system will be regularly supplied with new software via over-the-air updates.

Mercedes-Benz Vans is currently testing the STAGE platform with a series of app providers. For example, the NUNAV app from Graphmasters is installed in the SUSTAINEEER as it is already used by various customers. It enables parcel and courier services to carry out efficient route planning. Ultimately this results in a significant reduction in miles driven and therefore lower CO₂ emissions.

Identifying danger areas in advance

The SUSTAINER uses a camera to monitor road condition

Sustainable delivery transport depends on a traffic infrastructure that is in good condition. Road surfaces with large potholes, for instance, are a safety hazard. If car drivers fail to spot them in time they cannot evade them or slow down. Damage can be sustained to tires and suspension systems. At worst, there is the risk of an accident. The Mercedes-Benz Urban Mobility Solutions Team produces intelligent solutions based on data to improve life in towns and cities. One of these solutions can be found in the SUSTAINER: the technology demonstrator uses a camera to monitor the condition of the road. This enables the state of the infrastructure to be checked and evaluated using high-quality data from future Mercedes-Benz vans. With the aid of artificial intelligence, the data is automatically analyzed in the Mercedes-Benz Cloud, and could be supplied to towns and cities or traffic news broadcasters to increase traffic safety.

At present, the condition of roads and other traffic structures is largely still checked in the conventional way, visually and manually. This is associated with high costs and information which is soon out of date. Damage is often only spotted and repaired when it directly causes a problem. The ability to capture changes in the state of the road with a camera and share the information with other vehicles, evaluate it and upload it to the Mercedes-Benz Cloud will enable all future Mercedes-Benz vans to warn of potential danger areas before an accident occurs. Continually comparing the camera images in the Cloud will allow changes to be identified in real time. The monitoring will focus on surface damage of all sizes, bumps and faulty road markings and traffic signs. Tests by Mercedes-Benz Vans have produced a high level of success.

All-round visibility for greater safety and comfort, light and filter solutions for enhanced wellbeing

Digital mirror system, interior filter and Daylight+ for improved driver health and safety

For Mercedes-Benz Vans, important aspects of sustainability include the safety and health of the driver. Only a relaxed and healthy driver is a safe driver. The SUSTAINER has a lot of clever individual measures to make the driver's cab into a healthier and more attractive workplace – from the digital mirror system to the invigorating Daylight+ lighting module.

With the digital mirror system, the driver always has the surroundings of the van and load compartment in view. Instead of conventional large format exterior mirrors, the SUSTAINER has two digital Mirror Cams. They increase the field of vision and therefore the safety of the driver and other road users such as pedestrians and cyclists. At the same time, the compact design of the camera attachment on the cab reduces drag and energy consumption. In the interior, the driver can see two displays showing the precise views of the cameras. The screens are integrated directly in the windscreen. They can easily be removed and reattached, for example if the windscreen needs replacing due to stone chip damage.

Another digital mirror replaces the traditional interior rear-view mirror. The camera system shows the traffic conditions behind the vehicle even when it is not possible to see directly to the rear – for example with windowless rear doors or a fully loaded cargo area. The digital rear-view mirror is already available for the Mercedes-Benz Vito and the Mercedes-Benz V-Class. In the SUSTAINER it also serves as a monitor for the Cargo Cam that provides a clear view into the load compartment. The partition window can therefore be dispensed with. The SUSTAINER also has an additional exterior mirror monitor on the Speed Delivery Door to enable the driver to exit safely.

Interior filter eliminates odours

Another key factor in health and wellbeing is air quality. A highly effective interior filter provides protection from fine particles and pollen, and it also has a unique odor filtration system based on a special molecule sieve. In this way, almost all gases that can arise during real driving operations are neutralized. Even odors from tar fumes, ammonia and sulphur gases remain below the perceptible threshold.

Biologically active light increases attentiveness

Light is also an important factor in safety and wellbeing. Studies have shown that only around 5 to 20 percent of daylight reaches the eyes of passengers in a vehicle. Mercedes-Benz has therefore developed the innovative Daylight+ light module, which is integrated in the sun visor. It brightens the cab with light that is similar to daylight, so the driver stays fitter and more alert. The adaptive daylight makes use of a sensor to continually adjust the brightness level to the exterior conditions. This allows the daily light dosage to be raised several times over without dazzling the driver, and the body retains its natural biological rhythm. Mercedes-Benz has already tested the invigorating Daylight+ system extensively. The result: with the invigorating interior lighting, drivers tended to be more alert and made fewer errors in their reactions than when they were subjected to conditions of monotony.

Extensive safety and driver assistance package

For greater safety and more relaxed driving, the SUSTAINER has, like the eSprinter, has a whole series of safety and driver assistance systems. These include Active Brake Assist, Lane Keeping Assist, ATTENTION ASSIST and Crosswind Assist. The 360-degree camera and Highbeam Assist also play a significant role in supporting the driver. Light and rain sensors can automatically activate headlamps and windscreen wipers to ensure good visibility in the dark and in poor weather conditions.

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Mercedes-Benz AG at a glance

Mercedes-Benz AG is responsible for the global business of Mercedes-Benz Cars and Mercedes-Benz Vans, with over 170,000 employees worldwide. Ola Källenius is Chairman of the Board of Management of Mercedes-Benz AG. The company focuses on the development, production and sales of passenger cars, vans and vehicle-related services. Furthermore, the company aspires to be the leader in the fields of electric mobility and vehicle software. The product portfolio comprises the Mercedes-Benz brand with the brands of Mercedes-AMG, Mercedes-Maybach, Mercedes-EQ, G-Class and the smart brand. The Mercedes me brand offers access to the digital services from Mercedes-Benz. Mercedes-Benz AG is one of the world's largest manufacturers of luxury passenger cars. In 2020 it sold around 2.1 million passenger cars and nearly 375,000 vans. In its two business segments, Mercedes-Benz AG is continually expanding its worldwide production network with around 35 production sites on four continents, while gearing itself to meet the requirements of electric mobility. At the same time, the company is constructing and extending its global battery production network on three continents. As sustainability is the guiding principle of the Mercedes-Benz strategy and for the company itself, this means creating lasting value for all stakeholders: for customers, employees, investors, business partners and society as a whole. The basis for this is Daimler's sustainable business strategy. The company thus takes responsibility for the economic, ecological and social effects of its business activities and looks at the entire value chain.