

DAIMLER

focus

Sustainability 2017



Intelligent World Drive

En route to autonomous driving, Daimler sent a test vehicle on a trip around the world in order to gather experience in real-life daily traffic.

Priceless resources

Resource-efficient technologies and innovations help to conserve raw materials. This applies especially to the area of electric mobility.

Human rights around the world

Through its Human Rights Respect System, Daimler addresses human rights issues within the Group and in its supply chain.

2017: Sustainability in Figures

↗ 125 g

CO₂/km* cars Europe

2016: 123 g CO₂/km

↘ 843 kg

CO₂ emissions per produced
Mercedes-Benz Cars vehicle

2016: 858 kg

↗ 289,321

Number of employees worldwide

2016: 282,488

↗ 18.5%

Proportion of women worldwide

2016: 17.7%

↗ 32.952 t

of return parts and materials collected
for recycling (MeRSy Europe)

2016: 30,970 t

1,019

ProCent projects since 2011

* Average value determined by multiplying the in-house sales figures by the CO₂ values of the individual vehicles. This average is externally audited.

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Sustainability is the guideline for our corporate operations.

DR. DIETER ZETSCHKE

Chairman of the Board of Management of Daimler AG,
Head of Mercedes-Benz Cars

“

For us, sustainability is more than a buzzword. It is the guideline for our corporate operations. One example of this is our vision of emission-free mobility. We are forging ahead with the electrification of all of our vehicles: cars, trucks, buses, and vans. Through our efforts we are addressing not only the products but also the entire value creation process. That's why we are also promoting issues such as the sustainability of supply chains, environmental protection at our plants, and the responsible handling of data. All of these activities show that we define sustainable operation as holistic thinking.”

Talking with **RENATA JUNGO BRÜNGGER** and **OLA KÄLLENIUS**

ON THE ROAD TO SOLUTIONS FOR THE MOBILE FUTURE



Daimler has realigned its sustainability strategy. How were you involved in this process?

RENATA JUNGO BRÜNGGER: In order to make sure that sustainability-related activities have a substantial effect, they have to be regularly monitored and adapted to suit current developments. For example, we are conducting an ongoing dialog with our stakeholders. Through personal contact in particular, we receive open feedback and valuable suggestions concerning our sustainability-related activities. Our on-going voluntary obligations, as well as the implementation of the UN Sustainable Development Goals (SDGs), are crucial to our continuing development. We have focused on the SDGs that are influenced by our business model and our value chain — areas where we can actually bring about change. The result of this 360° perspective is our Sustainability Strategy 2030.

Would you say that this is a new and more precise focus rather than a thoroughly new approach?

OLA KÄLLENIUS: That's right. Our involvement is in line with the principles and values that have guided us for a long time now. One of the basic guidelines for our business operations is provided by the ten principles of the UN Global Compact, with which we have a special affiliation as a founding participant and part of its LEAD Group. As an international frame of reference, it is an important foundation for our internal principles and guidelines.

OLA KÄLLENIUS

Member of the Board of Management of Daimler AG,
Group Research & Mercedes-Benz Cars Development

Does that also include the respect of human rights?

RENATA JUNGO BRÜNGGER: Yes, respecting and upholding human rights is an important basic principle at Daimler. That's why the five sustainable development goals we focus on include "Decent Work." We have developed an approach for the respect of human rights that includes systematic monitoring: our Human Rights Respect System. Through this approach, we monitor our own companies and our supply chains to detect any risks to human rights. In this way we create transparency beyond our direct suppliers and introduce appropriate measures wherever they are needed.

As a result of the public debate concerning diesel, criticism has also been leveled against Daimler. What's your response to that?

RENATA JUNGO BRÜNGGER: It's true that confidence in the automotive industry has declined in the public's perception. That's one reason why we ourselves have an interest in creating transparency and clarity. And that's why we are cooperating fully with the authorities. At the same time, we are playing a significant role in the improvement of air quality in cities. In this way we want to show that we're also part of the solution. We are setting our sights on technological innovation, which we think is more effective than driving bans.

Will that be enough to regain the public's trust?

OLA KÄLLENIUS: We have prepared a whole package of measures to quickly and effectively reduce the emissions generated by road traffic. Most importantly, this includes voluntary software updates. To create these updates, we can draw on our extensive experience in the field and the development process of our new engine generation. We will significantly reduce the NO_x emissions of the vast majority of our diesel engines in real-life operation.

Wouldn't it also make sense to make changes inside the vehicle?

OLA KÄLLENIUS: That wouldn't create any improvements in the short term. You have to remember that we have several hundred vehicle configurations, and in very many cases not enough installation space is available. Besides, the development and validation processes would require between three and five years. Under these conditions, changing the hardware would not achieve quick and extensive improvements, especially because we're talking about vehicles that are already owned by customers.

Is electric mobility the way to solve this dilemma? After all, Daimler is making massive investments in emission-free drive systems.

OLA KÄLLENIUS: There's no doubt that we're moving toward emission-free mobility in the long term. We've already flipped the power switch, so to speak, and we're investing approximately €10 billion to increase the proportion of electric vehicles in our fleet. In 2017 we added the EQA to our EQ brand family of car models with battery-electric drive. The EQA is a concept vehicle based on the A-Class. We are systematically expanding our portfolio of plug-in hybrids. That also includes the GLC F-CELL.* The first units of this SUV with fuel-cell drive and a battery will be delivered to customers in 2018. The eVito, a fully electric series-



RENATA JUNGO BRÜNGGER

Member of the Board of Management of Daimler AG,
Integrity and Legal Affairs

* Preproduction model presented at the IAA International Motor Show 2017; technical data for the production model was not available at the editorial deadline.

produced van, will also be available starting in 2018. It will be followed by the eSprinter and the eCitan. At Trucks, we've already put the first fully electric light truck on the road in a small series – the Fuso eCanter. It's the first representative of our new E-FUSO electric vehicle brand. And Mercedes-Benz plans to follow suit in 2021 with the eActros, the first electric truck for distribution transportation with gross vehicle weights starting at 18 tons.

Many people are still hesitant when it comes to electric mobility.

RENATA JUNGO BRÜNGGER: The longer the cars' ranges grow and the better the charging infrastructure becomes, the sooner we'll see the breakthrough of electric mobility. Of course the difference in price between electric cars and traditional combustion-engine cars plays a role too. We're working hard to expand the range of our electric cars. The battery cells that will be launched on the market at the end of this decade will have a significantly greater energy density than the products that are available today. And they will make electric cars much more affordable. We're also working on the charging infrastructure – for example, through the IONITY joint venture, in which we are working together with other automakers to create a comprehensive charging infrastructure in Europe by the end of 2020. I'm confident that the demand for electric cars will grow.

OLA KÄLLENIUS: At that point, electric mobility will be able to make full use of its advantages. We want electric vehicles to be attractive vehicles. Range is not the only important factor. Driving pleasure, safety, services, connectivity, and suitability for daily use also count. Our EQ brand offers all of these qualities. EQ comprises a complete electric mobility ecosystem that consists of products, services, and innovative technologies. It ranges from the vehicle itself to wall boxes, charging services, and stationary battery storage systems for users' homes.

Have you prepared for a boom in demand?

OLA KÄLLENIUS: We're investing very heavily in expanding our production capacities. We are investing €1 billion solely in the global expansion of our battery production for electric cars and plug-in hybrids. Beijing Benz Automotive (BBAC), our joint venture with the Chinese company BAIC Motor Corporation, is currently building a battery factory in China. This will create the basis for the local production of electric vehicles. We're also building a battery plant in Tuscaloosa, Alabama. And we're already building our second battery plant in Germany on the premises of our subsidiary ACCUMOTIVE in Kamenz. It will be one of the biggest and most modern such factories in Europe. In addition, we are continuing our electric offensive in the area of vehicle production. At the plants in Bremen, Sindelfingen, Rastatt, and Hambach, we already have four competence centers for the production of electric vehicles. Moreover, we are continuing to upgrade the Untertürkheim plant into a high-tech facility for electric drive components. In addition, the Mercedes-Benz plant in Hamburg will be involved in the manufacture of EQ production vehicles in the future.

When are you planning to put highly automated vehicles on the road?

OLA KÄLLENIUS: Before such vehicles are ready for the market, they still have to go through several stages of technological development in the areas of sensor systems, map data, and artificial intelligence. They also have to overcome legal and social challenges. However, I think we'll already be very close to our goal between 2020 and 2025.

RENATA JUNGO BRÜNGGER: There's a need for action at the international level as well. Progress should not come to a halt at national boundaries. That's why we advocate international harmonization of the laws governing automated and autonomous driving. The clarification of legal and ethical issues is a prerequisite for public acceptance of this new technology.

“We’ve flipped the power switch and are investing approximately €10 billion in electric mobility.”

OLA KÄLLENIUS





“Handling data responsibly is part of our corporate digital responsibility.”

RENATA JUNGO BRÜNGGER

Another important aspect connected with connectivity and autonomous driving is data protection. What's your standpoint on this issue?

RENATA JUNGO BRÜNGGER: Our customers can rely on us that data protection in our vehicles is of great importance. We are taking a holistic approach to this issue. On the one hand, data make new services possible and thus offer added value for our customers – for example, consider the possibility of finding parking spaces faster in the future because cars are sharing information about vacant parking spaces. At the same time, handling data responsibly is part of our corporate digital responsibility. We are focusing on transparency, self-determination, and data security. When our engineers develop new services and products, they sit down at a table with their colleagues from the corporate data protection and legal departments so that they can find solutions together. Data protection is a key factor in connected driving in particular, and also in customers' acceptance of this technology.

The mobility of the future will be following a new set of rules. Don't changes in business operations also have to be followed by changes in the work environment within the company?

RENATA JUNGO BRÜNGGER: We're already in the midst of this process. Daimler is transforming itself from an automaker into a provider of mobility services. We are accumulating expertise in areas that extend far beyond our previous core areas of business. This is also having an impact on our corporate culture. We want to have a culture of cooperation that will bring us success in the future as well. This is why we kicked off our Group-wide Leadership 2020 initiative in 2016. Through this initiative we are launching a cultural transformation, but at the same time we are preserving our traditional corporate values such as integrity. As part of Leadership 2020, our employees and managers at

all levels examined our human resources development and decision-making processes, as well as our organizational structures, working methods, and tools. The measures that have been generated by this process and those that have already been implemented are impressive. For example, many of our colleagues are now working in swarms, and this is functioning very well.

What effect are these changes having on your relationship with Daimler's stakeholders?

RENATA JUNGO BRÜNGGER: Our dialog with our stakeholders is very important to us, and it will stay that way in the future. We've developed formats for this dialog that have proved to be very successful and sustainable. One important tool is the “Daimler Sustainability Dialogue”, an annual event in which our stakeholders meet with representatives of our Board of Management and other management levels. We split up into working groups and hold very open discussions, during which we of course also receive critical feedback. At the same time, we give our stakeholders insights into what the transformation of the automotive industry means for us. We listen to the external participants' suggestions, work together with the stakeholders to achieve our agreed targets, and report on the progress we have achieved. In 2017 we held the tenth “Daimler Sustainability Dialogue” in Stuttgart, the biggest one so far. We also organize “Sustainability Dialogues” in other countries. For example, we held our fifth “Sustainability Dialogue” in China in 2017, and we've also held such events in Japan, Argentina, and the USA.

Climate protection

Significantly less CO₂ emissions (tank to wheel) world-wide compared to 2015

Interim targets:

–44% for cars in the EU¹

–10% for vans in the EU²

¹2007–2021. ²2014–2018.

Air quality

Lower emissions of nitrogen oxides in real operating status by 2030 compared to 2015:

Cars –80%

Vans –80%

Buses –75%

Trucks –60%

Accident-free driving

The further development of modern driver assistance systems and vehicle-based protection systems with the ultimate objective of enabling accident-free driving



40%

Conservation of resources

40% lower primary raw materials requirement for electric drives and improved recycling of high-voltage batteries by 2030

Vehicles

Mobility services

Needs-based mobility

Positioning as a leading provider of digitally connected urban mobility solutions



Digitalization



Automated driving

Continuing development of the technology of automated driving in order to quickly enable the installation of these systems in our series-produced vehicles

Data governance

Offering innovative mobility solutions while guaranteeing the responsible handling of data

New world of work

Qualifying, recruiting, and retaining employees who are well qualified for the digital world of work

Regulatory responsibility

Establishing the Group as a recognized and reliable partner in the political opinion-shaping process

Our focal topics

Responsible conduct

Human rights

Becoming the sector leader in the systematic respect for human rights within the company and at suppliers



Integrity

Setting standards in the automotive and mobility sectors through exemplary integrity management



The Daimler Group's Sustainability Strategy 2030 focuses on four areas essential for the company. These areas also contribute to achieving the UN Sustainable Development Goals (SDG) relevant to Daimler. We have specified what we intend to achieve in each of these areas in the coming years.

Vehicles

+++ Diesel +++ The diesel drive system promotes climate protection. Improving it thus makes more sense than banning it +++ Electric mobility +++ The new plug-in hybrid S 560 e* is presented +++ Vehicles with electric drive contain especially valuable resources; greater efficiency and lower consumption help to conserve them +++ News +++ News and valuable information about electric and internal combustion vehicles from Daimler +++ Safety +++ The new SETRA double-decker bus is especially safe and leaves no wish unfulfilled +++ In Sindelfingen Daimler operates the world's most modern crash test hall



A plan for the future of diesel

As a result of the diesel controversy, public criticism has been leveled against the automotive industry, including Daimler. The differences between the legally prescribed NEDC measuring cycle in the laboratory and the NO_x emission values measured in actual driving situations have led to a loss of trust among some members of the public. Discussions of driving bans have also tarnished the public image of diesel.

Nonetheless, Daimler is convinced that it's worthwhile to improve modern diesel engines rather than ban them. For years now, the diesel engine has not been a significant source of particulates. And 25 of the leading professors of vehicle or engine technology in German-speaking countries recently confirmed that "the NO_x emissions problem [can] be regarded as technically solved."¹ Furthermore, diesel fuel is a very effective lever for reaching climate targets by reducing the amount of CO₂ in road traffic. Abolishing diesel engines would be a big mistake from an environmental as well as an economic standpoint.

In order to strengthen customers' trust, the Daimler Board of Management agreed on a plan for the future of diesel drives in July 2017. By means of this plan, Daimler intends to do its part to ensure that the air quality requirements in cities will be complied with.

Software updates for fast improvements

In the near future, the plan will entail the expansion of the voluntary service measures that were begun in March 2017. Eventually it will cover a total of more than three million Mercedes-Benz and smart vehicles owned by customers. The software updates improve the vehicles' NO_x emission behavior and help to reduce exhaust gas emissions. The measures are being implemented in Germany – and also for most of the Euro 5 and Euro 6 vehicles in the rest of Europe and in other markets – in close cooperation with the regulatory agencies.

These software updates give Daimler an effective opportunity to quickly make emission improvements in most of the vehicles in the Euro 5 and Euro 6 emission classes that are currently being driven by customers. By contrast, hardware updates would either not be feasible at all or would require, at a minimum, more complicated structural alterations – of the engine compartment, for example. Because this process would have to comply with Daimler's high safety and quality standards, and because in many cases the vehicles would then have to go through the official certification process again, the alteration of the vehicles would require several years.

In order to quickly update the vehicle fleet that is already on the road, Daimler enables owners of diesel cars in classes EU1 through EU4 to trade in their vehicles with a €2,000 bonus if they choose a Mercedes-Benz car. The bonus for a smart is €1,000.

DIESEL IS HELPING TO REACH CLIMATE TARGETS. IT WILL BE WORTHWHILE TO IMPROVE IT RATHER THAN BAN IT.

A new engine generation

In addition, Daimler is accelerating the market launch of its new diesel engine family, which has been designed completely from scratch and complies with the tougher emissions limits for measurements made in real-life driving situations (Real Driving Emissions, or RDE). The new generation of four- and six-cylinder diesel engines (OM 654 and OM 656) has excellent values for NO_x emissions in normal driving situations. This has been confirmed by measurements taken by independent institutes. Of course all of the newly launched production series and models will be certified according to the Euro 6d Temp/RDE Level 1. The first new production series to be certified in line with the plan is the CLS, which shall be in the showrooms starting in early 2018. It will soon be followed by other production series as well as newly launched engines in existing production series.

* Technical data on p. 14.

¹ http://www.wkm-ev.de/images/20170623_Die_Zukunft_des_Verbrennungsmotors.pdf

Daimler offers one of the broadest ranges of plug-in hybrid models in the premium segment. The new S 560 e* is the latest addition to the family of plug-in hybrids with the three-pointed star.

The new premium segment



The S-Class family now has a new member: the S 560 e*, a plug-in hybrid of the latest generation. It represents a technology that points the way toward the emission-free future of the automobile. Like all plug-in hybrids, it combines the advantages of two worlds. In city driving it uses only its electric motor, but on longer trips it benefits from the long range of a combustion engine. At the same time, the hybridization makes the combustion engine even more efficient and dynamic.

The hybrid drive of the S 560 e combines the 270 kW (367 hp) of a V6 gasoline engine with a 90 kW electric motor. The electric motor, which Daimler developed together with Bosch in the two companies' joint venture EM-motive, was specially designed for the innovative 9G TRONIC plug-in hybrid drive of the S 560 e. Its connection with the equally new and significantly more powerful high-performance electronics made it possible to further improve the vehicle's performance and torque.

During city driving, the S 560 e can produce no local emissions, and it can travel up to 50 kilometers solely on electricity. The key to the extended operating range is the increased nominal capacity of the new lithium-ion battery, which has been boosted to 13.5 kWh. Thanks to Daimler's refinement of the cell chemistry, the cell capacity has been increased from 22 to 37 Ah. For the first time in the S-Class, this highly efficient battery system was produced by the Daimler subsidiary Deutsche ACCUMOTIVE.

The high-powered electronic system of the S 560 e is housed in the engine compartment. Although its energy content has been increased by about 50 percent, the new battery has smaller dimensions than its predecessor. In combination with the Mercedes-Benz Wallbox, the onboard charger with an output of 7.2 kW makes fast charging possible.

An intelligent operating strategy with the ECO Assistant

An anticipatory driving strategy saves fuel — and usually enables drivers to arrive at their destination in a more relaxed condition. In the S 560 e, the ECO Assistant makes it easier to pursue such a strategy. For this purpose, it has access to the networked data of the navigation system, the traffic signal recognition system, and the safety assistants. On this basis it continuously calculates an intelligent operating strategy. Depending on the charge level of the battery and the traffic situation, it decides whether the vehicle should roll on (coast) with minimal traction resistance when the driver releases the acceleration pedal or whether the vehicle should be braked in order to charge the battery (energy recovery).

A variable pressure point in the "tactile accelerator pedal" tells the driver how much electric driving performance is still available at any given moment. If the driver presses down the pedal beyond this point, the combustion engine is automatically switched on. The system can recommend that the driver release the pedal by issuing a double pulse that the driver can feel. If the driver obeys the recommendation, the combustion engine is switched off and uncoupled from the drivetrain. As soon as the driver's foot leaves the accelerator pedal, the ECO Assistant regulates the thrust of the engine according to the needs of the current situation. All in all, this smart control system helps to improve fuel economy and also expands the range of the electric motor.

*Fuel economy (l/100 km) urban/extra-urban/combined:
n.a./n.a./2.1; electrical energy consumption: 15.5 kWh/100 km;
CO₂ emissions, combined: 49 g/km.

Priceless resources

Achieving more with less – for Daimler, this is the strategy of choice to conserve precious raw materials. This applies especially to the area of electric mobility.

The global economy is growing dynamically. If this trend continues unchanged in the future, global consumption of resources will more than double by 2050, with serious effects on the climate and the environment. This is forecast by the recently issued report of the International Resource Panel of the United Nations Environment Programme (UNEP). Nonetheless, the Panel is confident that resource efficiency can still be significantly improved in many regions, as detailed in the report. If we succeed in exploiting this potential, the need for resources could ideally even decrease slightly despite growing economic output.

Daimler has invested in resource-efficient technologies and production processes for years. Around seven million metric tons of raw materials are used every year to produce our cars and commercial vehicles. This makes it all the more important to already optimize, during early stages of development, our need for raw materials that are available only in limited amounts or can harm society and the environment. By using lightweight construction materials in our vehicles, we have successfully reversed the trend toward increased weight. In direct comparisons, today's models are up to 100 kilograms lighter than previous model generations. In our production plants we employ innovative processes in order to use valuable materials as sparingly as possible. The remanufacturing of components and the use of recycled materials also help Daimler to ensure that today on average about a third of the materials that are used to build a car come from secondary sources.

The challenge of electric mobility

The expansion of electric mobility is posing new challenges to the automotive industry today. That's because many high-quality materials are used in the drive system, battery, and power electronics of an electric car. "To produce an electric car, we need

more and different starting materials. This is similar to converting a range of conventional power plants to the production of renewable energy," says Klaus Ruhland from Product Environmental Assessment. "But the crucial factor is that the additional materials and energy that we need to produce electric cars are more than compensated for during the period when the vehicle is used – especially if the vehicle uses electricity that is generated from renewable sources and the recycling circuits are completed at the end of the vehicle's useful life. If that is the case, the electric car's operation in fact produces no emissions and is extremely resource-efficient."

Raw materials such as lithium, cobalt, nickel, platinum, and rare earths are available today in sufficient amounts to enable the transition to climate-friendly electric mobility. However, we will be able to safeguard the supply of these materials only if they are extracted in acceptable amounts in ways that are environmentally friendly and socially responsible. We need to deal with these precious raw materials prudently and economically so that we can avoid bottlenecks, rising prices, or other unforeseen developments.

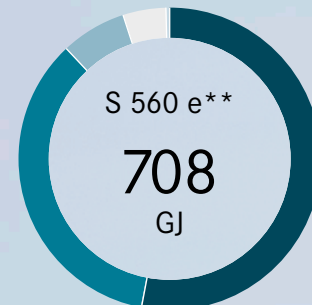
A close look at risks and resources

For a number of years now, Daimler has focused intensely on the question of the possible risks posed by the raw materials that are needed for electric mobility and how these risks can be assessed. In order to find answers, we conducted the ESSENZ research project together with partners from industry and science. The result has been a new holistic approach that our engineers are already using in the early phases of vehicle development. Their risk assessments in line with the ESSENZ approach show them how critical the use of certain raw materials is today or can become in the future.

68% Operation
17% Car production
16% Fuel production
0.2% End of life



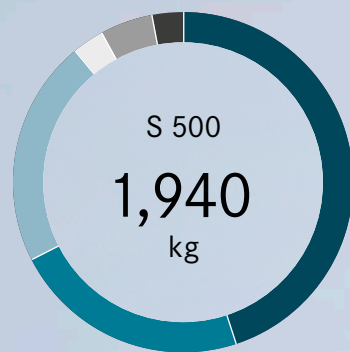
53% Operation
35% Car production
7% Fuel production
5% Power generation (hydroelectric power)
0.4% End of life



Energy resources

If energy consumption during the various phases of a vehicle's life is analyzed, the results show that the energy required to produce the vehicle is higher for a plug-in hybrid than for a conventional car. However, during the vehicle's use phase it consumes significantly less energy because of its high degree of efficiency.

S 500
1,940
kg



S 560 e
2,140
kg



Material resources

The S 560 e weighs 200 kilograms more than the S 500. The higher gross vehicle weight is due to the electric motor, the drive battery, and the battery cooling system, which the plug-in hybrid has in addition to the conventional components. These additional components also increase the total percentage of non-ferrous and special metals in the vehicle.

45% Steel/iron
22% Light alloys
21% Polymer materials
3% Other metals
5% Operating fluids
3% Other materials

43% Steel/iron
22% Light alloys
21% Polymer materials
6% Other metals
5% Operating fluids
4% Other materials

The ESSENZ analysis focuses on three dimensions. First, the engineers investigate the geological availability of the respective raw material. How plentiful and how accessible are the total existing reserves? Secondly, the team takes socioeconomic factors into account. For example, is a given raw material concentrated in certain countries or only a few extracting companies? Would it be difficult to open new mines? Thirdly, social and societal risks are examined. To what extent is the extraction connected with social or environmental risks and how can they be reduced? These are questions that Daimler also addresses in other areas. Our approach to minimize risks to the observance of human rights (Human Rights Respect System, cf. p. 42 f.) also applies to our suppliers and their contractors.

With the help of the ESSENZ analysis, the vehicle development engineers gain a clear picture of the potential environmental, economic, and social risks that are connected with the use of a given raw material. In this way they can assess how critical different raw materials in cars are and derive targeted options for action. The first question in this process is always "How can we use the raw materials in question even more efficiently?"

Greater efficiency, 40 percent better fuel economy

Achieving more with less – this is Daimler's preferred method of addressing the risks connected with scarce resources. In our new sustainability strategy, we have therefore defined a key performance indicator (KPI) for this area. The goal: Between now and 2030, we want to reduce our use of primary resources in the areas of drivetrain and battery technology by 40 percent compared to today's electric and plug-in hybrid vehicles.

The main factor that will help us reach this objective is the progress being made in lithium-ion battery technology. It will further increase energy density, so that more energy can be stored without increasing the battery volume. In addition, the batteries will become significantly lighter. That will have a positive effect on handling and fuel economy. Finally, the material composition of lithium-ion batteries will change. The combination of equal parts

of nickel, manganese, and cobalt that is normally used today will soon be a thing of the past, because the cobalt will be largely replaced by nickel. Starting in 2025, the post-lithium-ion technologies, which eliminate nickel and cobalt entirely, will be so reliable that they can be installed in vehicles.

In parallel, all of our development efforts aim at achieving the longest possible period of use, so that the materials in question can be utilized as efficiently as possible.

A battery's many lives

Other successful paths to greater resource efficiency include recycling and remanufacturing. Recycling enables us to recover materials such as nickel, cobalt, and copper in a way that maintains their high quality. As a result, we can significantly reduce the environmental effects of future battery systems. And in the remanufacturing process our specialists repair or overhaul the batteries for further use.

After serving their purpose in a car, high-voltage batteries can continue working in stationary storage facilities. Daimler is one of the pioneers in this area. For example, the Group commissioned the world's biggest second-use storage facility, with an output of 13 megawatts, in the town of Lünen in 2016. And 3,000 replacement batteries for the smart electric drive will form a major stationary storage facility in Hanover. Parts of this active central supply depot for batteries are already on line. The final go-live is scheduled for 2018.

Klaus Ruhland is looking at the future with optimism. "These storage facilities help to stabilize the local electrical grid," he says. "But even more important is the fact that they extend the useful life of the batteries, so that their valuable components can be optimally utilized. I am convinced that this will help us to further improve the environmental performance of electric mobility."



*Fuel economy (l/100km) urban/extra-urban/combined: 8.9/5.3/6.6; combined CO₂ emissions: 150 g/km

**Fuel economy (l/100km) urban/extra-urban/combined: n.a./n.a./2.1; electrical energy consumption: 15.5 kWh/100 km; CO₂ emissions, combined: 49 g/km



e Fully electrified

A LEGEND GOES ELECTRIC

The typical yellow school buses in the USA will soon also be powered by electricity. Daimler's North American subsidiary Thomas Built Buses has presented the first fully electric school bus that is ready for series production. Starting in 2019, the Saf-T-Liner C2 Electric Bus, or "Jouley" for short, will regularly bring as many as 81 children to school – silently and locally emission-free. Thanks to its 160 kW battery, the bus can travel up to 160 kilometers without having to recharge its batteries. For longer trips, the battery modules can be supplemented. Thomas Built Buses is the leading manufacturer of school buses in North America, with 38.7 percent of the market.

AN ELECTRIC CHAMPION

With the introduction of the Concept EQA at the International Motor Show 2017, Daimler presented its vision of an EQ model for the compact segment. The fully electric concept vehicle sets new standards through its design as well as its technical innovations. Its outstanding features include the two powerful electric motors, whose output can be increased to more than 200 kW thanks to scalable battery components. In combination with the intelligent operating strategy, the Concept EQA has a range of up to 400 kilometers. This electric vehicle can be charged via induction or at a Wallbox, and is also equipped for quick charging.

WORLD'S FIRST SERIES-PRODUCED ELECTRIC TRUCK

The new Fuso eCanter celebrated its world premiere on September 14 in New York. It is the world's first series-produced fully electric light-duty truck – a milestone on the road to locally emission-free distribution transport. The first small-production-series eCanter trucks have already been delivered to customers in the United States, Japan, and Europe. Volume production is scheduled to begin in 2019. Depending on the vehicle body and the type of use, the eCanter can travel for up to 100 kilometers and carry a payload of as much as 3.5 metric tons. In customer tests, the electric truck has already demonstrated how economically it operates. By comparison with the diesel version, the operating costs of the eCanter are as much as €1,000 lower per 10,000 kilometers.

AN ELECTRIC VAN WITH A HOLISTIC CONCEPT

The eVito shall be available starting in mid-2018. It's the second fully electric series-produced van from Daimler, after the Vito E-CELL from 2010. The electric van is the first step in the Group's implementation of its electric drive strategy in the area of commercial vehicles. Starting in 2019, further model series will follow until all of Daimler's commercial vans are electrified. The Group is setting its sights on customized holistic system solutions that are created on the basis of expert consultation. In a dialog with the customer, the operating concepts are adapted to the customer's sector-related needs, vehicle fleet size, and driving profile – or to the architectural requirements for creating the customer's own charging infrastructure on his company's premises. The new eVito is the first series-produced vehicle to be developed in line with this holistic approach.

High-tech combustion engines

Driving will be electric in the future. But until that happens, the combustion engine will continue to be the backbone of mobility. Innovative technology is making it highly efficient.



Trucks and buses from Daimler are powered by highly efficient engines based on the Heavy-Duty Engine Platform. This includes vehicles ranging from the Freightliner New Cascadia (top) to the Mercedes-Benz Citaro, the Arocs, and the Actros (from left to right).



HIGHLY DEVELOPED DRIVE SYSTEM

A GLOBAL PLATFORM FOR EFFICIENT TRUCKS

In 2017, the US Daimler subsidiary Freightliner successfully improved the fuel economy of its flagship vehicle, the new Cascadia long-haulage truck, by a further eight percent by comparison with the previous model. The technical innovations in the engine and the drivetrain played a major role in this success. Working inside the new Cascadia is one of the cleanest and most advanced powertrains in the heavy-duty segment. It's built on the basis of the Heavy-Duty Engine Platform (HDEP) from the Daimler Trucks Global Powertrain unit. This unit creates integrated and highly efficient powertrain components according to globally uniform standards of quality – globally shared know-how that ensures powerful and economical drive systems in all of our commercial vehicle brands, ranging from Freightliner and Mercedes-Benz to Setra, Western Star, and FUSO.



EFFECTIVE AND MAINTENANCE-FREE

THE PARTICULATE FILTER FOR GASOLINE ENGINES GOES INTO SERIES PRODUCTION

In practical tests over a period of two years, the particulate filter for gasoline engines has proved that it can further reduce the emissions of fine soot particles. Now the particulate filter has gone into series production. In 2017, we first installed the filter in the new S-Class featuring the new M 256 gasoline engine. The filter is gradually being fitted in other new vehicle models and engine generations. In the final step, the gasoline engine particulate filter will also be installed in current production series. By mid-2018 almost all of our gasoline engines shall be equipped with this filter, which is not only highly efficient but also maintenance-free and self-regulating.

AN ENGINE OFFENSIVE

NEW DRIVE SYSTEMS FOR CARS: STRONGER, CLEANER, AND MORE EFFICIENT

As part of the Daimler engine offensive in 2017, three members of the new Mercedes-Benz engine family celebrated their premieres. The new six-cylinder M 256 gasoline engine, which has been launched in the new S-Class in 2017, offers excellent performance and efficiency. It is the first of our premium gasoline engines that we have designed for electrification. Its technology includes an onboard electrical system with a voltage of 48 V. Together with an integrated starter-generator (ISG), it enables hybrid functions such as energy recovery and stop/start operation. The result is the kind of fuel economy that could previously only be achieved with high-voltage hybrid technology. The new four-cylinder M 264 gasoline engine also impresses through its enhanced performance and efficiency. It consumes significantly less fuel than its predecessor. Its technical features include the twin-scroll turbocharger, which combines the exhaust channels of paired cylinders in a streamlined design, as well as the 48-volt starter-generator (RSG) and the 48-volt electric water pump.

The top position in Daimler's diesel family is occupied by the new six-cylinder OM 656 engine, which is used in the S-Class. At approximately 230 kW/313 hp, it offers significantly more power than its predecessor, the OM 642 (190 kW/258 hp), and consumes over seven percent less fuel. This diesel engine also boasts low emissions. Like the OM 654 four-cylinder engine that was presented in 2016, the OM 656 is designed to comply with the future Real Driving Emissions (RDE) regulations. Here a major role is played by the exhaust treatment system, which is located close to the engine.

In Germany, more than 25 million people travel by long-distance bus every year. The country's bus travel sector is booming – and thanks to plans for many new routes, it will continue to grow in the years ahead. That's why Daimler Buses has completely redesigned its flagship model after 15 years and provided it with the latest in safety technology. The Setra S 531 DT is once again setting new benchmarks for long-distance buses, according to Hartmut Schick, the Head of Daimler Buses. "Hardly any other bus is as safe, versatile, and fuel-efficient as the new double-decker premium touring coach from our EvoBus production plant in Neu-Ulm," he says.

When this new double-decker bus was being developed, the main emphasis was placed on safety. Statistically speaking, touring coaches are a very safe means of transport. Nonetheless, bus accidents sometimes do occur. The EvoBus engineers therefore did everything possible to further reduce accident risks in the new Setra. This long-distance bus has two top-level safety innovations on board.

Active Brake Assist 4 (ABA 4), which is the newest generation of the successful emergency braking system, can now do even more. In addition to its previous functions, such as a full braking maneuver when it encounters obstacles that are either moving or stationary, it can now clearly identify pedestrians at a distance of about 80 meters. In case of an impending collision, the ABA 4 is able to send visual and acoustic warning signals while at the same time automatically braking the bus.

Meanwhile, Sideguard Assist ensures that the Setra S 531 DT has practically no blind spots any more. Radar sensors installed at the sides monitor the lane to the right of the bus and reliably warn the driver during turns whether there are any pedestrians or bike riders in the blind spot. Sideguard Assist also helps the driver during lane changes. At higher speeds, it expands the lane section that is being monitored by up to 20 meters beyond the length of the bus.

Another safety technology highlight is the fire detection system, which is installed as standard. It monitors the entire engine compartment. In addition, specially developed bulkhead partitions protect the passengers from fire hazards such as flue gas. If a fire should actually break out, the standard automatic fire extinguishing system goes into action. High-pressure valves spray the mixture of extinguishing agents into the engine compartment. The fire is extinguished and the engine compartment is cooled off in order to prevent the fire from reigniting. Thanks to this effective fire protection system, the new Setra already complies with the legal requirement to install such a system starting in 2019.

A fuel-efficient drive system, optimal aerodynamics

The new double-decker coach is not only very safe but also extremely economical. Including its reliable six-cylinder inline engine, the drive technology, which is perfectly geared to buses, is designed to have long maintenance intervals. This lowers the operating costs and reduces downtimes. In addition, the drive axle works very smoothly and thus is especially quiet and fuel-efficient. That boosts cost efficiency as well as comfort, especially on the bottom deck of the Setra.

An all-rounder for safe, environmentally friendly, and comfortable travel.

In addition, the aerodynamics of the bus have once again been improved. In spite of its generous dimensions, the double-decker bus offers comparatively little resistance to the airstream. With a curved windshield, big edge radii in front, and trailing edges in the back, it has record-breaking low wind resistance values. This has a noticeable effect on fuel economy, enabling the bus to consume up to ten percent less fuel than its predecessor.

The improved aerodynamics also cause less wind noise, and that makes the ride even more pleasant for the guests. Comfortable traveling is also guaranteed by the bright, passenger-friendly design of the interior. Platforms and handrails throughout offer safety when passengers are walking through the bus to the barrier-free restroom or the onboard kitchenette. State-of-the-art media and Internet systems provide entertainment on board.

This is how premium buses such as the new Setra make bus travel even safer, more environmentally friendly, more comfortable, and more attractive than ever before. So it's no wonder that bus trips are becoming ever more popular.

Setra

Even safer, more comfortable, and more efficient – the **new Setra S 531 DT double-decker bus** is setting new benchmarks in its class.



The Setra S 531 DT...

... is the biggest touring coach from Daimler, with more than 80 seats.

... has an output of 375 kW or 510 hp, thanks to its powerful and efficient six-cylinder OM 471 inline engine.

... consumes up to ten percent less fuel than its predecessor, thanks to its further improved powertrain and optimized aerodynamics.

... offers exemplary safety for passengers, thanks to its new assistance systems and effective fire protection.



Just the part of the crash test hall that can be seen here measures 90 by 90 meters – which makes it bigger than an international soccer field. In addition, it has been constructed entirely without any pillars.

XXL

A hall for crash tests

Daimler operates the world's most advanced crash test hall in Sindelfingen.

Daimler vehicles are equipped with highly effective assistance systems that help to prevent accidents. But what happens if an accident should actually occur? In the new Technology Center for Vehicle Safety (TFS) in Sindelfingen, collisions can be realistically simulated and precisely investigated down to a fraction of a second. The system is the most advanced of its kind anywhere, and it offers completely new possibilities.

For example, the engineers there can conduct special tests to check the design of the safety systems and validate vehicle concepts featuring alternative drive systems. In a pillar-free space measuring 90 by 90 meters, vehicles can drive in all directions and collide with one another from every imaginable angle. Automatic maneuvers and side collision tests can be carried out with two moving vehicles. Accidents involving trucks and buses can also be simulated.

900

crash tests can be conducted annually in the new hall.

55,000

square meters is the total area of the TFS.

7,000

metric tons of steel were used to construct the TFS – almost as many as were used for the Eiffel Tower.

A 200-meter run-up track

The longest run-up track at the TFS is 200 meters long. Building it was a special challenge for the planning and construction team, because the floor has to be completely even in order to enable precise measuring results. The permissible tolerance is only five millimeters per 100 meters of track. To make sure that the floor doesn't wobble during tests, almost 500 concrete pillars under the floor of the crash hall extend up to 18 meters into the ground.

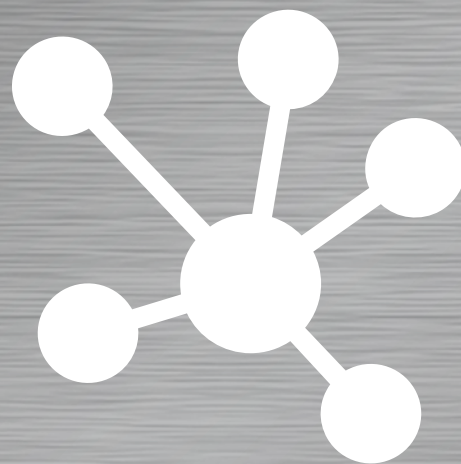
Daimler has always been synonymous with safe vehicles. We have always conducted more, and tougher, crash tests than the regulations or the ratings require. Before one of our vehicles goes into series production, it undergoes approximately 15,000 computer-based accident simulations. Moreover, a total of about 150 crash tests with real vehicles are conducted from the early development phase onward.

An X-ray view of car crashes

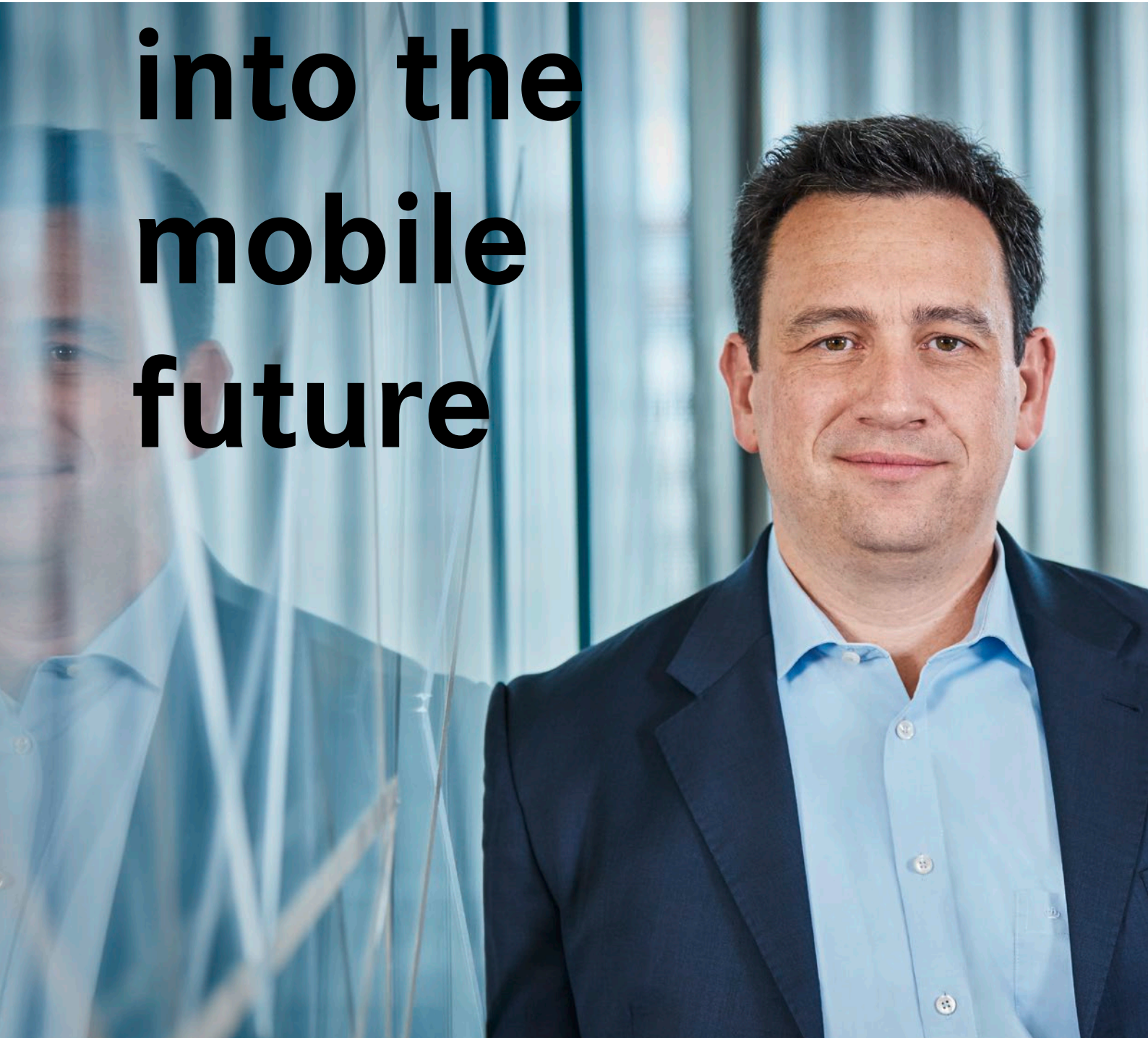
In the future, Daimler will also use completely new types of crash tests in order to gain even more exact results. For example, the Group is currently collaborating with the Fraunhofer Institute for High-Speed Dynamics, the Ernst Mach Institute (EMI) to experiment with the use of X-rays. During a crash, ultra-short-time X-ray technology can deliver sharp images of previously designated vehicle areas at intervals measured in fractions of a second. This technology will make it possible to precisely analyze the crash behavior of safety-relevant vehicle components, for example. The data from the "X-ray crashes" can also be combined with computer-based simulation models. This means that crash tests can yield more reliable forecasts – and this is an important precondition for protecting the vehicle occupants and other road users.

Mobility Services

+++ Operating system for urban mobility +++ Daimler Mobility Services invests in startups +++ Additional platforms for peer-to-peer carsharing and ridesharing +++ Increasing demand for mobility offers beyond users' own cars +++ From A to B +++ Most varied range of mobility offers, digitally connected and flexibly combinable +++ Search and book via app +++ Data protection +++ Daimler Mobility Services treats data responsibly



With bits and bytes into the mobile future



A talk with Jörg Lamparter, Head of Mobility Services at Daimler, about smart cities and the future of urban mobility.

“

Through our operating system for urban mobility, we are supporting cities' efforts to make mobility simpler and more sustainable.”

Mr. Lamparter, Daimler Mobility Services is increasingly investing in Internet start-ups. What are your plans in this area?

In 2017 we successfully promoted and enhanced the three pillars of Daimler Mobility Services: carsharing, transportation services, and mobility platforms. In addition, we acquired shares in Turo, which is the US market leader in peer-to-peer carsharing, and the ridesharing service Via, as well as Careem, a ridesharing service based in Dubai that has more than ten million users. We've also completely taken over Flinc, the first ridesharing platform for short trips, which was founded in Darmstadt. All of them are promising enterprises, and we aim to use them to further expand our strong position in the mobility market.

Are you currently experiencing a tailwind?

The mobility sector is currently undergoing rapid change. The trend is toward “mobility on demand.” Customers want to have intelligently interlinked mobility services that they can search for, book, and pay for simply and directly via their smartphones. Our car2go service is the global market leader for flexible carsharing, mytaxi is the leading taxi app in Europe, and our multimodal moovel platform offers users access to a wide variety of mobility options. Through our interaction with the services of the companies in which we have holdings, we are in effect creating an operating system for urban mobility and supporting cities' efforts to make mobility simpler and more sustainable.

What does your vision of future urban mobility look like?

Today urban regions all over the world are facing very similar challenges. Their transportation infrastructure is overburdened, and traffic congestion is a strain on their inhabitants. In the future, cities will once again focus on their residents. We are convinced that traffic will require less space in the future. There will be a broad and varied range of mobility offers that can be flexibly combined. And a combination of intelligent route planning with the pooling of ride requests will create additional flexibility.

Does this mean that people practically won't need cars of their own?

Daimler is setting sales records. But at the same time, people are increasingly demanding mobility offers that go beyond their own cars. Especially in cities, people are increasingly rethinking their daily mobility routines and deciding on the best way to get from A to B

in each situation. We are already responding to this trend by offering appropriate options – including booking and payment through our mobility platform moovel.

In other words, there will still be cars in the smart cities of the future. How much will the “robocars” of the future have in common with the cars of today?

I'm confident that our developers at the Group have clear ideas about that. These “robocars” will stand out because of factors that go far beyond design issues. They will have autonomous electric drive systems, be fully connected, and be shared by many users. From my perspective, Daimler is ideally set up for this development in every one of its divisions: cars, trucks, vans, and buses. Daimler probably has the widest range of new technologies that are already in operation or at least in the pilot phase.

If your vision of connected mobility is to become a reality, the main thing you need is data. How is Daimler Mobility Services addressing data protection?

For us, data protection has top priority. In many areas we are already implementing the requirements of the new EU General Data Protection Regulation, which will come into force at the end of May 2018. We regard this as an important aspect of our value proposition: to deal responsibly with the data of our partners and customers. One of the ways we set ourselves apart from our competitors as a German provider is by complying with the highest data protection standards in the world. That's an example of “made in Germany” in the best sense of the word.

Bits and bytes instead of status and horsepower – doesn't this approach conflict with the core business of your company today?

Vehicles will continue to be a core business of Daimler. We entered the market early on with our Daimler Mobility Services, and we've established ourselves in a good position. Our ultimate aim is to occupy the interface with customers, because through our mobility offers we reach not only car owners but also people who don't have a car. We are transforming ourselves from an automaker into a mobility group.

Digitalization

+++ Digital transformation +++ Digitalization supports and shapes Daimler's transformation from an automaker to a provider of mobility services +++ The future: Connectivity, automated driving, sharing, and electric drives are intelligently linked +++ Intelligent World Drive +++ To learn more on the road to automated driving, Daimler sent a test vehicle around the world +++ In focus: specific driving habits and complex traffic situations on five continents +++ Digital Life@Daimler +++ Daimler is forging ahead with digital projects in all of its divisions +++ Digital transformation projects of many kinds are already running



INTELLIGENT WORLD DRIVE

>5,500

test drives were conducted by Daimler in the past 7.5 years to try out assistance systems.

>10 MN

kilometers were driven in Europe, the United States, China, Australia, and South Africa.

>1.35 MN

measurements were made in order to evaluate the systems' performance.

The vision of self-driving cars is fascinating increasing numbers of people. However, it will still take years before self-driving cars can reach their destinations in cities and the countryside independently and safely. The sophisticated assistance systems we have today show the advanced stage that technology has already reached. But there are still some missing links between today's cars and higher automated or even driverless vehicles that are ready for daily use. In order to operate safely in traffic, cars still have a lot to learn.

Accordingly, Daimler sent a test vehicle based on the new series-produced S-Class sedan on an educational journey that lasted from September 2017 to January 2018. During these five months, the vehicle gained valuable experience during automated test drives in real-life traffic on five continents. The aim was to gain global insights into real-life traffic conditions as well as valuable country-specific information for the further development of the technologies involved.

When we observe traffic conditions in various countries and cultures at close range, we can see clear differences and characteristic features. These specific characteristics have to be "experienced" in real-life traffic so that automated and driverless vehicle functions can be adapted to them. "The acquisition, processing, and interpretation of highly complex traffic situations is the key to safe automated

and driverless vehicles," explains Ola Källenius, the member of the Board of Management who is responsible for Group Research & Mercedes-Benz Cars Development. "These processes are especially complex in dense urban traffic. We are therefore testing our automated driving functions very deliberately in driving situations that occur daily in major cities."

New technologies require legal certainty

The varying national legal frameworks also pose a challenge to the project, because it will be difficult for automated and autonomous driving to gain public acceptance if it does not have a secure legal basis. Current international agreements concerning road traffic law still strictly require a driver. That's a huge obstacle, because these agreements constitute a binding framework for national law. Adjustments also need to be made in the areas of vehicle certification and data storage.

Daimler is advocating a uniform international legal framework. "Progress should not come to a halt at national boundaries. Legislation must keep up with technological development. Otherwise it will not be possible to put important innovations in automated and autonomous driving on the road," says Renata Jungo Brüngger, the member of the Board of Management who is responsible for Integrity and Legal Affairs. "We urgently need greater international harmonization of the legal framework."



UNITED STATES

The last phase of the Intelligent World Drive is being conducted in California and Nevada. In test drives in Greater Los Angeles and from there to the Consumer Electronics Show (CES) in Las Vegas, the test vehicle has to prove itself in dense urban traffic and on highways. In the process, it gets to know the special characteristics of US road traffic.

For example, in the United States school buses are a special category of road users. When they stop and turn on their warning lights, all vehicles in their vicinity have to stop. US speed limit signs are also absolutely unique. They have completely different shapes and sizes than the speed limit signs in Europe, Australia, Asia, and Canada. The United States also has high-occupancy vehicle (HOV) lanes, as well as road markings made of raised plastic dots (Botts' Dots). And in certain situations US drivers are also allowed to pass on the right. All of these factors place high demands on the test vehicle's sensor systems and algorithms.

EUROPE

The first phase begins in Germany. Here the focus is on driver behavior specifically on highways and in traffic jams.



CHINA

A city of millions. Countless people, bicycles, motorcycles, and ever more cars — as well as the distinctive features of Chinese traffic. Here the test drives focus on driving behavior in extremely dense traffic with a wide variety of road users.

In addition to traffic signs in Chinese script, there are lane markings that have different meanings depending on their context. For example, the broad white lines that are used to indicate crosswalks all over the world can also be found on Chinese highways, but here they indicate the minimum distance between vehicles. The sensor systems of automated and autonomous vehicles must recognize and correctly interpret such features. This also applies to speed limits, which may differ for different lanes — and seven-lane intersections that are crossed simultaneously by dozens of bicycles and pedestrians during rush hour.



AUSTRALIA

Drivers making a right turn from the left lane, flashing speed limit signs, kangaroos hopping across the road — during the third stage of the Intelligent World Drive, the test vehicle has to master automated test drives on country roads, highways, and city traffic with a whole new set of specific requirements. The route begins in Sydney, leads through Canberra and Albury, and ends in the urban traffic of Melbourne. One focus of the test drives is the validation of the digital map data of HERE. The system also has to recognize the country-specific traffic signs.



SOUTH AFRICA

Traffic in South Africa poses some very unusual challenges, such as traffic signs that are unique to this country, wild animals on the road, and pedestrians crossing the road unexpectedly. During automated test drives on the West Cape and in Cape Town, the test vehicle rises to these South African challenges. It focuses mainly on the pedestrian detection system.

There are lots of pedestrians in South Africa's cities and countryside. Some of them walk in the roadway or cross the street in unusual traffic situations. On national roads outside towns and villages, and even on major highways, drivers have to constantly look out for pedestrians crossing the roadway. This places correspondingly high demands on the sensor systems of automated and autonomous vehicles. Cameras and radar systems must recognize pedestrians and interpret their movements correctly so that the vehicle can react in milliseconds if necessary.



In addition, the engineers are testing a new lighting technology. The test vehicle is equipped with the innovative DIGITAL LIGHT system. Inside the headlight prototypes, chips containing more than one million pixels per headlight provide anti-dazzle continuous high beams in HD quality. Among other things, DIGITAL LIGHT can project light tracks onto the road in order to communicate with its surroundings.



DigitalLife@Daimler

How can we successfully create a Group-wide digital network at Daimler? The approximately 400 employees from all over the world who showed up for the DigitalLife netWorkCamp in Ludwigsburg in October 2017 are part of the answer to this question. Inspired by the potential of the digital world, they discussed new work models, developed ideas, and tried out the connected cooperation that is made possible by platforms such as the new Daimler Social Intranet. The boundaries between specialized units and plants have become irrelevant, and ideas can be shared and cooperatively refined in real time all over the world – these are possibilities that made the netWorkCamp participants enthusiastic advocates of digital transformation at Daimler.

The netWorkCamp is only one of the projects being conducted as part of the DigitalLife@Daimler initiative. Within this framework, Daimler is consolidating its activities related to the digitalization of the Group – always focusing not on technology but on people. All of these activities have one overarching goal: Daimler aims to link current trends and future-oriented technologies with the individual needs of its customers in order to shape the mobility of the future.

This means that it must digitalize its methods for developing, planning, and producing vehicles and for staying in touch with customers and partners. Above all, it must empower its employees to deal capably with the digital world. That's because the opportunities of digitalization can only be optimally exploited if people think and act in new ways. DigitalLife@Daimler aims to make all of this possible. The initiative is forging ahead with projects that will promote Daimler's digital transformation. It has the following four focal points:

#transform. Daimler is creating a strategic model and focusing on the digital developments that are crucial for its business operations. The Group is an Automotive Digital Leader – a role that was confirmed last December when it received the Digital Transformer Award 2017 in the Automotive category. Daimler impressed the judges with its systematic digitalization along the entire value chain.

#ideate. Daimler supports the idea-creation validation and implementation process – internally and externally, throughout Germany and at the international level – and promotes it through events and platforms such as the DigitalLife Open Space, the DigitalLife Innovation Camp, the DigitalLife Crowd Ideas Platform as well as through the global hackathon series DigitalLife Campus. Both of our ideation and innovation approaches were credited with awards as well: with the Digital Lab Award (for internal ideation) and with the DigitalLeader Award (for external ideation).

#collaborate. With the help of digital platforms such as the Daimler Social Intranet, the Group reinforces networking between its employees. Methods such as Working Out Loud promote in-house cooperation. The self-organized Working Out Loud community of practice between Daimler and seven other partners was honored with the Human Resources Excellence Award last November.

#change. The international DigitalLife Tour and presentations and workshops at the plants and divisions enable people to experience digitalization at first hand and encourage them to share their ideas about the digital transformation. Events such as the DigitalLife Fail'n'Learn Nights promote the culture of constructive criticism at the Group. And at the annual DigitalLife Days event, which is similar to a TechFestival, we present digital initiatives across the Group to around 1,000 employees and honor the best employee ideas.

Digitalization also plays a role in other projects, such as the Leadership 2020 initiative for the further development of our management culture. Here we have set up eight sub-projects aimed at changing processes and structures. One of them is the Digital Transformation game changer, whose goal is to help managers and employees optimally exploit the opportunities offered by the digital transformation in their respective areas of responsibility. In addition to measures that promote “digital” thinking and create a culture of open communication and cooperation, the initiative is also forging ahead with the creation of a digital infrastructure.



#netWork
#workingoutloud

#ideate

#collaborate
#xperience

#awareness

#change

#transform

#enabling

#openspace

#socialintranet

#newwork

Responsible Conduct

+++ Integrity +++ Daimler supports its employees in many ways to establish a culture of integrity in daily business +++ Human rights +++ Through its Human Rights Respect System, Daimler addresses risks to human rights within the Group and, target-oriented, in its supply chain +++ Infrastructure +++ Through the IONITY joint venture, Daimler is helping to build a network of public high-power charging stations in Europe +++ Social commitment +++ Under the umbrella of DaimlerWeCare, the Group and its employees are involved in community service projects



Integrity – a compass of values for daily work

What does integrity mean? According to Wikipedia, integrity is an ethical orientation which ensures that an individual's moral values and daily behavior go hand in hand. But what does integrity mean for a global automotive group with 290,000 employees?

"Integrity is one of Daimler's key corporate values and a central element of our corporate culture," explains Renata Jungo Brüngger, the member of the Board of Management who is responsible for Integrity and Legal Affairs. "Integrity in action cannot be imposed from above. Instead, we have to work together to define a scale of values that provides orientation for us and our colleagues even in difficult situations."

"Integrity in action is based on a shared scale of values that provides orientation for us and our colleagues."

RENATA JUNG0 BRÜNGGER
Member of the Board of Management responsible for Integrity and Legal Affairs

This scale of values has been laid down in the Group-wide Integrity Code. It is based on a shared understanding of values that was worked out together with our employees, and it defines the principles that must form the basis of our daily conduct. These principles include the observance of laws and rights, as well as fairness, responsibility, mutual respect, openness, and transparency. This guideline gives our employees orientation and helps them make the right ethical decisions even in difficult business situations. "For us, acting with integrity means that we always do what we say – that our deeds match our words. That's the only way to generate the lasting trust that is the basis of every successful relationship – including business relationships," says Pia Simon, the Head of Integrity Management.



Mobile help with questions related to integrity, compliance, and legal issues – the Daimler IL4me app

A major prerequisite for responsible conduct is a culture of open discussion that enables people to address sensitive topics. Daimler is strengthening this culture by offering dialog events in a variety of areas and markets. In addition, the Integrity and Legal Affairs division has introduced a whole range of supportive measures that are available to help employees work together to shape a culture of integrity. These measures include customized training sessions that simulate daily business activities and the IL4me app, which provides mobile information about integrity, compliance, and the law. Daimler also has a special database where employees can find answers to frequently asked questions. “We communicate our scale of values to our employees through the various measures we offer. This is how we actively help to protect our brands and our reputation and thus promote Daimler’s long-term success,” says Pia Simon.

“For us, acting with integrity means that we always do what we say. That’s the only way to generate lasting trust.”

PIA SIMON, Head of Integrity Management

This is especially important in times of upheaval and transformation. The automobile industry is being radically changed by digitalization and the related areas of connectivity, driverless vehicles, sharing, and electric mobility. The new fields of business that are developing today require companies to reorient themselves. New technologies offer tremendous opportunities, but at the same time they pose challenges – for example, with regard to ethical and legal issues. In such times of change, our inner values and attitudes are put to the test. That’s why integrity issues will become even more important in the future.

IL4me

The IL4me app was introduced throughout the Daimler Group in 2017. It helps Daimler employees to act with integrity and in accordance with the rules. With the IL4me app, employees can call up important information about integrity, compliance, and the law on their mobile phones at any time, in Germany and abroad, both online and offline. IL4me answers frequently asked questions, provides information and services, and indicates which contact person at the Integrity and Legal Affairs division can best help the user deal with his or her concerns. Above all, the app offers:

- advice on how to deal with invitations and gifts
- rules of conduct for sharing information with competitors
- information about integrity and the Integrity Code
- information about the Infopoint Integrity contact point and the BPO whistleblower system, which enables users to connect directly with a contact person.



THROUGH ITS HUMAN RIGHTS RESPECT SYSTEM, DAIMLER ADDRESSES RISKS TO HUMAN RIGHTS WITHIN THE GROUP AND, TARGET-ORIENTED, IN ITS SUPPLY CHAIN.

Respect for human rights has high priority at Daimler. We are committed to proving to the greatest extent possible that these elementary rights are respected and upheld throughout our organization, by our partners, and by our suppliers as well. To this end, Daimler has developed a systematic due diligence approach called the Daimler Human Rights Respect System (HRRS). Its aim is to identify and avoid systemic risks and possible negative effects of our business activities early on.

By means of the Human Rights Respect System we systematically assess potential risks to human rights, define necessary measures and evaluate their implementation. “This is a Daimler-specific method that we have specially developed for ourselves,” explains Wolfram Heger, Senior Manager Corporate Social Responsibility. “We started out by gathering experiences in 19 country-based analyses and implementing an initial set of local measures. We are now using this data to expand the HRRS as our approach to a human rights due diligence process.”

The HRRS orientates itself on our Group-wide Compliance Management System (CMS) and consists of four steps. In the first step, the aim is to identify potential risks to human rights. Daniel Crampton, who is responsible for human rights in the Corporate Responsibility Management unit, explains the process as follows: “We first investigate which of our worldwide units and supply chains are principally subject to a higher or lower risk. These risks may be country-specific or business-specific. If there is an increased risk to human rights, we conduct a more detailed assessment, sometimes directly on site, to find out where the specific risks lie and how these are being dealt with.”

On the basis of this analysis we decide on preventive measures and countermeasures, introduce them, and manage them. In the third step, we monitor the effectiveness of these measures. This is an especially important task for corporate units and supply chains that are subject to a high level of risk. Finally, the fourth step focuses on reporting. Human rights issues have to be reported on regularly within the company. In addition, the reporting has to comply with external requirements.

Daimler has begun applying the HRRS to companies in which it has majority holdings, and it is using the same system to develop a risk assessment process for its supply chain. This approach has been successful, as our initial experiences in the pilot phase have shown. We have succeeded in making an initial group of supply chains completely transparent. By 2020, the Human Rights Respect System is to be completely established for the companies in which we have majority holdings and for our supply chains.



“Human rights issues affect all of us, including those of us in Germany and the rest of Europe. They must be an integral component of our operative purchasing and compliance processes. With the help of the HRRS we can make this extremely complex issue manageable and take practical measures in a targeted way.”

ISABELLE KRAUTWALD, Senior Manager Performance Management, Compliance & Integrity, Supplier Audits, International Procurement Services (IPS)

DAIMLER PROCUREMENT NON-PRODUCTION MATERIAL, GERMANY

The procurement unit for non-production material deals with highly complex matters involving more than 60,000 active direct service providers in over 200 countries, countless subcontractors, and about 700 material groups. In order to ensure that Daimler’s contract partners comply with the Daimler supplier standards, more than 600 audits were conducted in the past three years in Germany alone. These audits yielded extensive information about places where risks can exist. The next step is now to systematically transfer these findings to the global context by means of the HRRS.

“In automobile production we deal with components made of very diverse materials. The HRRS is helping us to focus on the right aspects, sensitize our suppliers to the relevant themes, and support the suppliers as they implement appropriate measures.”

SANDRA KÄLBER, supplier quality engineer for chromium-plated and painted exterior attached parts and Head of the Mica Task Force



DAIMLER MICA TASK FORCE, GLOBAL

The Mica Task Force deals with mica, a component of paints that has repeatedly been connected with child labor in India. The task force has successfully created transparency in the paint supply chain, all the way back to the mica mine. In doing so, it evaluated the suppliers’ due diligence processes and defined further measures to be taken if necessary. The ultimate goal was to eliminate child labor. The HRRS risk assessment process proved to be helpful in creating transparency concerning the relevant auto components and their suppliers.



DAIMLER BUSES, MEXICO

During the pilot phase of the HRRS in 2017, Daimler Buses Mexico was investigated on site – and this was a positive experience for both the company and the employees. The bus manufacturer was able to identify potential optimization measures as well as a number of cases of good practice – for instance, in the areas of plant security and the inclusion of people with disabilities. These examples can serve as models for other Daimler locations around the world to help them deal with their own challenges. The initiative was received very positively at the plant. The serious and trust-based dialog concerning human rights was well received by the employees.

“Taking human rights seriously is the foundation of responsible conduct. This requires open dealings between the people who work here, as well as an open management culture. Both of these elements are fixed components of our integrity – and they are part of our new management culture, Leadership 2020.”

HARTMUT SCHICK, Head of the Division Daimler Buses & CEO of EvoBus GmbH

“The application of the HRRS corresponds to a principle we call ‘ubuntu’ here in South Africa. It means ‘humanity’: Treat your neighbor the way you want him to treat you. In essence, this principle is also part of the Constitution of South Africa.”

MASHUDU MERCY MAKHUVHA, Local Compliance Manager Southern Africa



MERCEDES-BENZ SOUTH AFRICA

Mercedes-Benz South Africa wants to extend its activities in the area of human rights beyond the company boundaries and play a role in the development of local communities. One example of that is its program to combat sexual violence, which aims to raise public awareness of this issue and thus tackle the problem at its roots. The approach taken by HRRS addresses a broad spectrum of human rights issues. HRRS tries to deal with these issues not in isolation but always in their respective social context. We embrace the process of transformation that aims to address the social injustices which are a result of economic imbalances that are seen in some areas of our society.



400

high-power charging stations
for electric cars – a comprehensive
Europe-wide network –
will be built by IONITY by 2020.

Cooperation will be the key to
creating the charging network.
Strategic partnerships are already
providing IONITY with locations
in 18 European countries.

High power for Europe

Today, drivers who set out on long trips in their electric cars can't be quite as carefree as the drivers of conventional vehicles. They have to plan their route carefully, including the charging stations they will need, and also take the charging times into consideration. However, such efforts will soon be unnecessary, according to IONITY. This is a joint venture that plans to create a comprehensive network of about 400 high-power charging stations throughout Europe by 2020.

In early November 2017, Daimler, BMW, Ford, and the Volkswagen Group officially agreed to work together to promote electric mobility by investing in the joint creation of a high-power charging (HPC) network. The goal is to enhance the attractiveness of electric mobility. "By creating the first pan-European HPC network, we're making electric mobility fit for long-distance travel. We are primarily focusing on our customers. Our goal is to provide fast and convenient charging that can be paid for digitally," explains Michael Hajesch, CEO of IONITY GmbH.

The HPC stations will be located roughly 120 kilometers apart. In cooperation with partners including Shell, OMV, Tank & Rast, and Circle K, the joint venture is planning to create attractive stations along highways and major traffic arteries. All of the IONITY charging stations will be accessible to the public and will have several charging points. They will use the Combined Charging System (CCS), which makes it possible to recharge with alternating current (AC) as well as direct current (DC) and will thus be compatible with most electric cars of the current generation and the next one. They will offer charging capacities of up to 350 kW, which will permit significantly shorter charging times than those that are available today, depending on the vehicle.

IONITY will orient its choice of locations according to customer needs. Charging solutions that already exist will be systematically integrated into the system. To this end, the joint venture aims to conduct in-depth discussions with all the parties involved. The founders of IONITY hope that strong partnerships and cooperation across sectors and countries will help them reach their ambitious goals on schedule. They plan to run more than 100 charging stations by the end of 2018 and to have the full complement of approximately 400 stations in operation all over Europe by 2020.

We care.

At DaimlerWeCare we actively participate in non-profit projects all over the world. In an interview, **Wilfried Porth**, Member of the Daimler Board of Management and Director of Labor Relations, talks about the socially beneficial activities of the Daimler Group and the projects that are especially dear to his heart.

“WE ALSO ENCOURAGE OUR EMPLOYEES TO GET INVOLVED IN SOCIALLY BENEFICIAL ACTIVITIES. TOGETHER, WE CAN ACHIEVE MORE.”

WILFRIED PORTH

Member of the Board of Management of Daimler AG, Human Resources and Director of Labor Relations, Mercedes-Benz Vans



Mr. Porth, your company's social commitment is expressed in an extremely varied range of projects. What is the aim of these activities, from your perspective?

Daimler operates all over the world. We are very aware of the social responsibilities that are connected with our business operations. Through DaimlerWeCare we aim to do our part to promote social development all over the world. We want to provide assistance and get involved in the communities where we operate. It's true that our activities cover a very wide spectrum. We strengthen communities and promote education, science, art, culture, and nature conservation. We also promote initiatives for increasing road safety. A very important aspect of these activities is that we don't want this involvement within our company to be dictated from the top down. Instead, we want all of our locations to support these projects and encourage their local employees to actively participate. In other words, our approach is "With our employees, for our locations, around the world."

For example, how do you support your employees' initiatives? How is this principle applied in concrete terms?

ProCent is a good example of that. Our employees can donate the cent amounts of their monthly paychecks. Daimler matches these donations, and the total amount flows into a special assistance fund. In 2017 alone, ProCent was able to provide more than €800,000 for nonprofit projects. These are projects that the employees themselves can propose, in Germany as well as abroad. Other examples of our employees' social commitment include the "Give a smile" Christmas campaign, in which employees donate presents for children and teenagers from socially disadvantaged families, and the "Day of Caring," which we organize in more than 20 countries. Every year on this day, thousands of our employees turn out to support charitable institutions through their teamwork.

And what are you doing at your locations here in Germany?

We promote a wide variety of initiatives that strengthen social development at the local level. For example, the integration of refugees is a major concern at our locations in Germany. In addition to professional integration, which we support through our bridge internships, we also promote the social integration of refugees. We also consider it extremely important to improve access to education and training for all. We are doing that through our Genius knowledge community and the Daimler Children's University in Sindelfingen.

What about the third part of your principle – worldwide commitment? What are you doing on a global scale?

Here too, there is a very wide range of activities. One of our most successful international projects is the MobileKids traffic education initiative, which celebrated its 15th anniversary last year. Another example is our humanitarian emergency assistance projects. When natural catastrophes occur, we support cities and communities with donations, material resources, and vehicles.

You're also active in foundations. What do you focus on in this area?

In areas such as science and sports we funnel our activities through foundations. For example, through the Daimler and Benz Foundation we promote interdisciplinary research that addresses the interactions between human beings, the environment, and technology. We also support interdisciplinary research projects through the Daimler fund in the German Donors' Association. By contrast, the Laureus Sport for Good Foundation has a practical orientation: It enables children and adolescents to discover their own potential through sports.

Mr. Porth, you are personally involved in a number of projects. Which ones are especially dear to your heart?

There are quite a few. I remember very clearly my visit to the Skate Camp of the Indigo Youth Movement near Durban, South Africa. This Laureus project was established 15 years ago, and since then it has had an incredibly strong impact. Today the young people in this community have not only become expert skateboarders but have also become much more self-confident in general. Witnessing this change was a very moving experience. Another project that is close to my heart is the integration of refugees here in Germany. Here too, sports are playing a role. The Daimler sports association, SG Stern, offers them a broad range of integrative sports activities through its "Sustainable Integration" campaign. Among other things, the young people in bridge internship programs and other refugees have already taken part in 1,400 different sports programs, and 31 refugees have become sports association members. The membership fees are being paid via sponsorships by existing sports association members. This is a great program, and sponsorships that were originally anonymous have become friendships. I'm very pleased by this success.

We care.

WITH OUR
EMPLOYEES,
FOR OUR
LOCATIONS,
AROUND
THE WORLD.

Protection for karst zones

Enormous caves, deep ravines, and unique fauna — the karst zones along the Danube River are fascinating natural landscapes. The purpose of the EcoKarst environmental project is to investigate and preserve them. The EcoKarst project partners have been responsible for seven protected karst zones in seven countries since 2017. They are investigating these zones' ecological significance, the problems facing them, and their value in terms of biodiversity — always with a view to how each of these karst zones can contribute to the development of the entire region. The aim is to find the right balance between preserving and strengthening ecosystems on the one hand and using them sustainably on the other. Daimler is supporting these themes and promoting EcoKarst.

A new playground for young patients

Playing makes it easier for children to process life-changing experiences during a hospital stay and thus can promote the healing process. After the new playground of the children's ward at the Ortenau Clinic near Offenburg was opened in early 2017, it quickly became a magnet for the young patients. While the kids dive into their fantasy worlds and give free rein to their desire for physical activity, depending on the state of their health, their parents can relax a little. The 250-square-meter playground has a slide, playground equipment for toddlers, various seesaws, a swing, and a balancing device. It was financed with the help of a donation drive run by the clinic's support organization in Offenburg. The Daimler employees' ProCent initiative supported the project with a five-digit contribution.

Mangroves for Pulicat Lake

The Daimler facility in Chennai, India, is located about 80 kilometers from Pulicat Lake. Mangroves used to grow on the banks of the lake. The trees improved the water quality, which in turn increased the fish stocks and ensured that local people could make a living from fishing. However, the mangroves along Pulicat Lake have been decimated — something that is also happening in many other regions of Southeast Asia. As a result, the Global Nature Fund (Germany) has launched a reforestation project to restore the mangrove forests. Daimler is supporting this project. Project members are teaching local people how to raise and replant mangrove seedlings. At the same time, they are running educational projects to show people how important the mangroves are for protecting the lake. So far 20,000 square meters along the lake have been reforested. Plans call for the eventual restoration of 50,000 square meters of mangrove forest.

A sensitive habitat: The view from a lookout point in Tara National Park, Serbia, over the karst landscape along the Danube River. The region's ecosystems are being threatened mainly by deforestation, cattle breeding, and fishing.



Sports can help change the world

Self-confidence and total commitment enable people to overcome obstacles — in sports as well as in real life. The projects of the Laureus Sport for Good Foundation help disadvantaged children and teenagers find this out for themselves. The goal: The projects use sports to support young people in a variety of ways and enable them to internalize values such as team spirit, fairness, and discipline. This Daimler-supported foundation is the non-profit arm of the Laureus World Sports Awards, which are presented annually to the world's best athletes. Since its establishment in 2000, the foundation has conducted more than 100 projects in 35 countries.

Sprinting toward a better life.

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Diversity shapes
our future



Ready to be different

We are 280.000.

Different Cultures. Different Colors. Different Lives.

DAIMLER