

# Group manage



# ment report

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# Fundamental information about the MAHLE Group

**In times of economic upheaval, our background as a foundation provides stability.**

**We responded quickly to the coronavirus pandemic. Our goal: to protect the health of the workforce and continue to be a reliable partner for our customers.**

**At the start of 2020, we established the new Electronics and Mechatronics business unit, in which we are bundling key future business areas.**

## Business activities and corporate structure

MAHLE is a leading global development partner and supplier to the automotive industry. As a technology pioneer for the mobility of tomorrow, we aim to make transportation more efficient, more environmentally friendly, and more comfortable. As part of its dual strategy, MAHLE is working both on the intelligent combustion engine for the use of hydrogen and other nonfossil fuels and on technologies that will help the fuel cell and e-mobility achieve broad acceptance in the markets.

Encompassing engine systems and components, filtration, and thermal management, our product portfolio addresses all the relevant technical aspects relating to the powertrain and air conditioning technology as well as their combination. What is more, our high level of systems competence and our expertise in electric and electronic components and systems allow us to offer integrated systems solutions for e-mobility.

MAHLE products are fitted in millions of passenger cars and commercial vehicles. And that is not all: for decades, our components and systems have also been used off the road—in stationary applications as well as for mobile machinery, rail transport, and marine applications.

The MAHLE Group is divided into five business units: Engine Systems and Components, Filtration and Engine Peripherals, Thermal Management, Electronics and Mechatronics, and Aftermarket. Added to this are four profit centers, which serve specific market and customer segments, as well as central service businesses.

We took advantage of the chances presented by globalization at an early stage and enhanced our product portfolio by strategically founding and acquiring new business activities. With our around 160 production locations and twelve major research and development centers, we are represented on five continents and employ approximately 72,200 people overall.

The nonprofit MAHLE Foundation controls 99.9 percent of the company's shares; 0.1 percent of the shares are held by Verein zur Förderung und Beratung der MAHLE Gruppe e. V. (MABEG), which also holds all of the voting rights and thus exercises the shareholder

### OWNERSHIP STRUCTURE OF THE MAHLE GROUP

MABEG Verein zur Förderung und Beratung der MAHLE Gruppe e. V.	MAHLE-STIFTUNG GMBH
Company shares <b>0.1 %</b>	Company shares <b>99.9 %</b>
Voting rights <b>100 %</b>	Voting rights <b>0 %</b>
No profit-participation rights	Receives dividends to finance MAHLE Foundation projects

Sales: EUR 9,774 million | Headcount: 72,184

**BUSINESS UNITS**

**PROFIT CENTERS & SERVICES**

Engine Systems and Components	Filtration and Engine Peripherals	Thermal Management	Electronics and Mechatronics	Aftermarket	Motorsports and Special Applications	Large and Small Engine Components	Industrial Thermal Management	Control Units	Central service businesses
EUR 2,107 million	EUR 1,708 million	EUR 3,421 million	EUR 1,029 million	EUR 898 million	EUR 611 million				
24,458	9,487	20,449	8,659	1,798	7,333				
					<b>Sales</b>				
					<b>Headcount</b>				

rights. This structure ensures our entrepreneurial independence, which creates the basis for long-term planning and farsighted investment decisions.

A core management tool for our Group is our operating result—a key figure similar to EBIT. The main differences compared with EBIT lie in the amortization of goodwill, the depreciation and amortization of hidden reserves, which are disclosed in purchase price allocations, and in the treatment of income from the sale of business activities.

## Business segments

### Engine Systems and Components business unit

The Engine Systems and Components business unit is a mainstay of our business and represents one of our core fields of expertise. We have decades of development and systems know-how and rank among the global market leaders in most product groups. Our range of products, which we manufacture at various locations around the world, includes steel and aluminum pistons, piston rings, cylinder liners, bearings, and valve train systems. These products are used around the globe in passenger cars, commercial vehicles, large engines, and two-wheeled vehicles. We are continuously developing our portfolio, focusing in particular on reducing energy consumption as well as CO<sub>2</sub> and other emissions from combustion engines.

### Filtration and Engine Peripherals business unit

We are one of the top-selling suppliers in many product groups in this area. In this business unit, we produce filter systems and components for the engine periphery with the aim of using our products to improve air cleanliness while also preventing contaminants in oil and fuel from damaging engines, in turn increasing their efficiency and service life. In recent years, we have worked in close cooperation with our customers to develop a modular system for all the major product groups—after all, the product environment can vary significantly, even in identical basic engines. In addition, development work has paved the way for special high-strength plastics to replace metals, thereby achieving further weight savings. For example, we are developing all-plastic oil filter modules with fully integrated oil pumps and oil cooling technology for use in the powertrains of electric vehicles.

### Thermal Management business unit

Our solutions from the Thermal Management business unit for batteries, fuel cells, power electronics, and electric drives make extended cruising ranges, high levels of efficiency, and long service lives possible. As such, we are contributing to the development of zero-emissions powertrains. Thermal management is also becoming more and more important in the ongoing development of the combustion engine: Our increasingly effective and efficient cooling systems are helping to cut fuel consumption and thereby reduce CO<sub>2</sub> emissions. Our air conditioning innovations are laying the foundations for new design concepts for interiors and enabling a high degree of thermal comfort for vehicle occupants. In combination

with powerful mechanical and electric compressors and electric auxiliary heaters, this is producing decisive advantages for the overall vehicle air conditioning system in terms of consumption and, more specifically, range. In the thermal management sector, we are one of the largest suppliers on the world market.

## Electronics and Mechatronics business unit

The demand for electric vehicles is steadily rising. Against this background, MAHLE combined its expertise in the fields of electronics and mechatronics in a new business unit on January 1, 2020. The latter encompasses the former Mechatronics division and the two profit centers Compressors and Pumps. The development and production of mechanical and electronic products for the automotive industry have also been incorporated into this business unit alongside further solutions for mobile applications. The overall importance to the Group of the Electronics and Mechatronics business unit's product portfolio—electric drive systems, actuators, auxiliary aggregates, and control and power electronics—is growing.

Our expertise in the development and manufacture of electric motors and of electronic and mechatronic systems forms the foundation of this business unit. In the year under review, we received orders for high-volume projects involving e-compressors and were approached for others. We also significantly increased the production volume of a highly integrated onboard charging system for battery electric vehicles and plug-in hybrids. However, our areas of competence extend beyond the bounds of the strictly automotive sector. For instance, we also supply electric drives for nonautomotive applications, such as for forklift trucks and golf carts. In 2020, we continued our success with e-bike drive systems for race bikes, gravel bikes, and city bikes with a comprehensive system for mountain bikes. In addition, we improved our position with regard to e-scooter drives on the Indian market.

## Aftermarket business unit

Our Aftermarket business unit supplies wholesalers, automotive workshops, and electronic retail platforms all around the world with spare parts in original equipment quality as well as service units and services. In addition to our standard spare parts, such as engine components, filters, turbochargers, and mechatronic components, we also offer products for thermal management, such as thermostats, radiators, charge air coolers, and air conditioning compressors. With the full integration of the former joint venture Behr Hella Service GmbH (BHS), we have expanded the Aftermarket business unit's range of products and services.

Vehicle diagnostics, exhaust gas analyzers, and service equipment for maintaining air conditioning systems and automatic transmissions are now included in the Aftermarket portfolio in addition to services, such as technical support via our global network, customer training, and service information. In view of the diversity of today's vehicle technologies in the fleet, our innovative solutions are a key building block in our business partners' suc-

cess. We aim to continue expanding our competences, services, and product areas and to position MAHLE as a full-service provider. With needs-based product management, fast and reliable logistics processes, strong brands, and fair market prices, we can also offer our customers individual repair solutions and thus make workshops even more efficient.

## Profit centers and services

Four business fields serving special market and customer segments are organized as profit centers: Motorsports and Special Applications; Large and Small Engine Components; Industrial Thermal Management; and Control Units. This structure allows us to offer our customers a high degree of flexibility as well as tailor-made applications and components, meaning we are able to give them targeted support in the development of specific new products. In addition to the profit centers, our central service businesses make a substantial contribution to our success. These include Purchasing, Sales, Advanced Engineering, Human Resources, IT, and Accounting and Finance. Furthermore, MAHLE Powertrain GmbH offers engineering services to both internal and external customers.

## Group strategy

Our Group strategy is based on the analysis of relevant megatrends from which we have developed various future scenarios. Five trends are having a particularly powerful impact on the automotive industry:

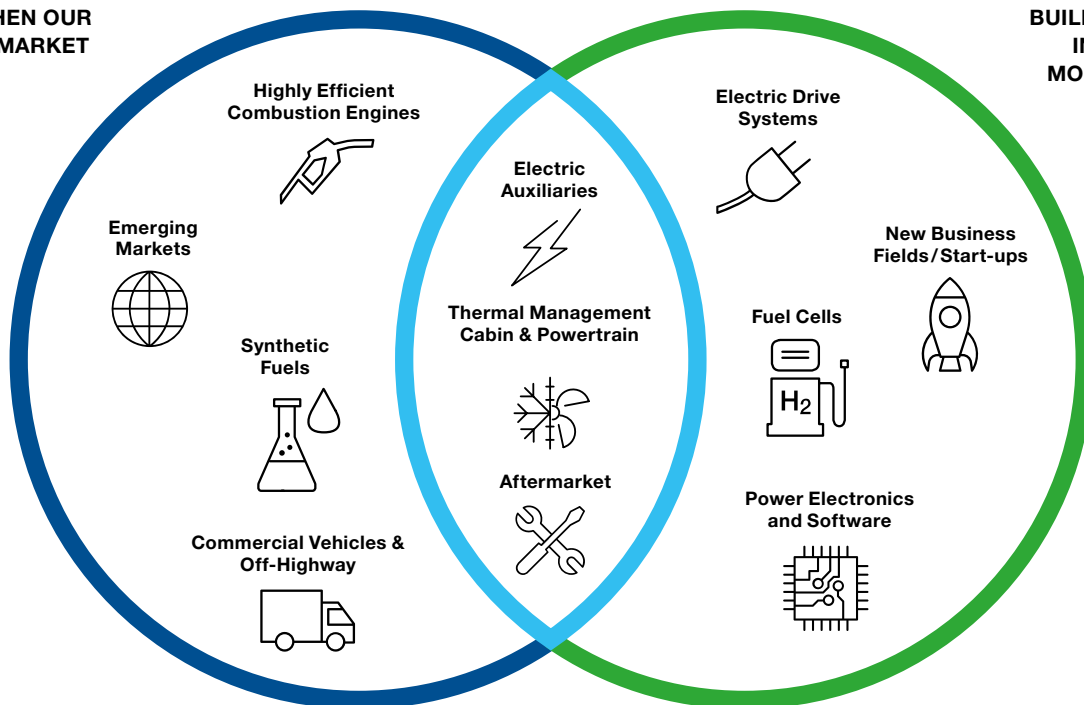
- Climate change (including the political climate targets)
- Ongoing urbanization
- Global population growth
- The increasing importance of Asia as an economic region
- Digitalization

These developments demand innovative mobility solutions and present the automotive industry with new challenges. In addition to the expansion of car-sharing options and public transport, the increasing electrification of the powertrain, the growth in digital networking of vehicles, and (partially) autonomous driving are taking center stage. Digitalization is playing an ever-greater role, and not only on the roads, but also in our internal company processes, through subjects such as Industry 4.0, big data, and the automation of administrative and production-related processes. What's more, the megatrends go hand in hand with changes within our customer landscape, for example, due to new suppliers of electric vehicles or innovative digital business models.

How quickly this structural change takes place will depend on which technical solutions succeed in holding their ground in the market and, to an ever-increasing degree, on political demands. The importance of technologies such as hybrid or electric drives is growing for passenger cars and light commercial vehicles in urban distribution transport, as are alternative usage models like car

**STRENGTHEN OUR EXISTING MARKET POSITION**

**BUILD THE FUTURE IN A CHANGING MOBILITY WORLD**



sharing. The combustion engine will remain significant for medium-sized and heavy-duty commercial vehicles in the short and medium term, but alternative drive types such as hybrid, electric, and fuel cell drives are becoming more important and complementing existing technologies in this area too. Overall, we expect the trend—away from combustion engines powered by conventional fuels and toward alternative drives—to progress more quickly in the passenger car segment than for commercial vehicles. As regards the latter, we anticipate that the combustion engine will remain central to mobility in the global markets in the years to come.

MAHLE has derived its dual strategy on the basis of these assumptions and findings:

1. Strengthening existing business segments: From a technology perspective, we would like to assume a leading role in the ongoing development of the combustion engine—especially in terms of its operation using climate-neutral hydrogen or e-fuels—and ensure the highest possible level of competitiveness in terms of quality and costs. In the process, we will primarily concentrate on exploiting further CO<sub>2</sub> savings potential with regard to friction, thermal management, and the air pathway. We believe that the use of synthetic fuels and green hydrogen presents even greater potential for reductions in CO<sub>2</sub> emissions, which is why we are consistently aligning our product portfolio to suit their use. By doing so, we are offering our customers solutions that are consistent with both current and future legislation and making a significant contribution to reducing emissions.
2. Developing solutions for future mobility scenarios: At the same time, we will push ahead with the development of innovative solutions and products for alternative powertrain technologies and expand the affected business segments. Business segments that are independent of the OEM business for passenger car combustion engines today already account for about 60 percent of our Group sales. We intend to further increase this share on an ongoing basis.

Our dual strategy is also reflected in our thermal management activities. Overall, the importance of efficient thermal management will continue to grow, not only in conventional but also particularly in alternative drive systems. To strengthen this business segment in the long term, we signed a contract to take over the air conditioning business of Keihin Corporation (now known as Hitachi Astemo, Ltd., hereafter abbreviated to Keihin) in Japan, Thailand, and the USA during the year under review, and completed the acquisition on February 1, 2021. In recent years, we have already developed and marketed many thermal soaking innovations in the thermal management product area—both for the cabin and for the powertrain, including the battery. We will continue to pursue this innovative approach resolutely.

We have substantially amplified our activities in electronics and mechatronics in the past year. In organizational terms, we merged all core competences from these fields into the new Electronics and Mechatronics business unit in 2020, thus positioning ourselves even more effectively. By taking this step, we plan to continue extensively developing our electronics competence with the aim of offering our customers even better systems solutions for electric vehicles with regard to thermal management and the powertrain. Our customers in Asia in particular prefer highly integrated solutions of this kind. Furthermore, we intend to expand

our portfolio for electric motors in passenger cars and commercial vehicles as well as in two-wheeled vehicles, which are playing an ever-greater role in urban mobility around the world.

We are pursuing a holistic approach in terms of both the development of solutions for alternative powertrain technologies and the optimization of the combustion engine. It is not only the electric motor that is decisive for efficiency in an electric vehicle, but also the interplay of various technologies: for example, the cruising range of an electric vehicle can be increased by means of intelligent thermal management. Equally, a combustion engine's overall system can also be used more efficiently when it is adapted to run on synthetic hydrogen or e-fuels.

As part of our dual strategy, we review our portfolio as well as the strategic direction and economic performance of the Group on an ongoing basis. One of our strategic goals is to evenly distribute sales across our customers and core markets in Europe, North and South America, and Asia/Pacific, giving special attention to the Asian growth market. We consider our global presence to be an important prerequisite for proximity to our customers and for developing innovations in line with the demands of the individual markets.

# Report on economic position

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**In line with the slump in vehicle markets worldwide, our sales fell organically by around 17 percent in the year under review.**

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**We acted quickly in the crisis and consistently adjusted our cost structure to match the changed market conditions.**

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**The measures introduced led to restructuring expenses that significantly impaired the result in 2020.**

## Economic conditions

### Overall economic development

In 2020, the global economy suffered hugely as a result of the coronavirus pandemic and the associated lockdowns and restrictions. According to the January report of the International Monetary Fund (IMF), global economic output shrank by 3.5 percent, compared with growth of almost 3 percent in 2019. Governments around the world attempted to support the economy through subsidy and investment measures. Nevertheless, economic output fell by almost 5 percent in the advanced economies and by over 2 percent in the developing and emerging markets.

According to the IMF, economic growth in the euro zone shrank by around 7 percent as a result of the pandemic (2019: +1.3 percent). Spain, Italy, and France were impacted particularly badly, and infection figures were also especially high in these countries. EU-wide packages of measures were only able to partially cushion the economic downturn.

In North America, the USA recorded a decline of more than 3 percent; in 2019, the world's largest national economy had grown by a good 2 percent. South America was hit even harder, with Brazil above all suffering a fall of almost 5 percent.

Among the nations of the Asia/Pacific region, China came through the year of the pandemic outbreak comparatively well from an economic perspective. It was the only major national economy to record growth, although, at just over 2 percent, this was considerably weaker than in the previous year (2019: +6.0 percent). China, which had been the first country in the world to be affected by the pandemic, succeeded in stemming the incidence of infection through strict restrictions and curfews to such an extent that economic activity quickly regained momentum. It was a different story

in India, where the severe collapse in investment and private consumption caused the economy to contract by 8 percent. In Japan too, economic output declined by 5 percent.

### Exchange rate development

The MAHLE Group operates worldwide and therefore also transacts business in foreign currencies. Exchange rate movement is of central importance in this respect, because it affects the conversion of financial data for accounting purposes.

Almost all trading currencies of particular significance for our company lost value against the euro in the 2020 business year. The Japanese yen was an exception, showing no material change against the euro. By contrast, other currencies depreciated, in some cases losing significant value, such as the Argentine peso (-35 percent), the Brazilian real (-25 percent), the Turkish lira (-21 percent), the Mexican peso (-12 percent), the Chinese renminbi (-2 percent), and the US dollar (-2 percent).

As far as we are concerned, exchange rate fluctuations are generally closely linked to financial and economic risks. That is why, wherever possible, we use a process known as natural hedging: by operating production locations in all major sales regions, we reduce the impact of currency turbulence and exchange rate fluctuations on the Group, thus also minimizing the associated risks.



**North America**

- Overall economy ↘
- Passenger cars and light commercial vehicles ↓
- Medium-sized and heavy-duty commercial vehicles ↓

**Exchange rate**

- USA (USD) ↘
- Mexico (MXN) ↓

**Europe**

- Overall economy ↓
- Passenger cars and light commercial vehicles ↓
- Medium-sized and heavy-duty commercial vehicles ↓

**South America**

- Overall economy ↘
- Passenger cars and light commercial vehicles ↓
- Medium-sized and heavy-duty commercial vehicles ↓

**Exchange rate**

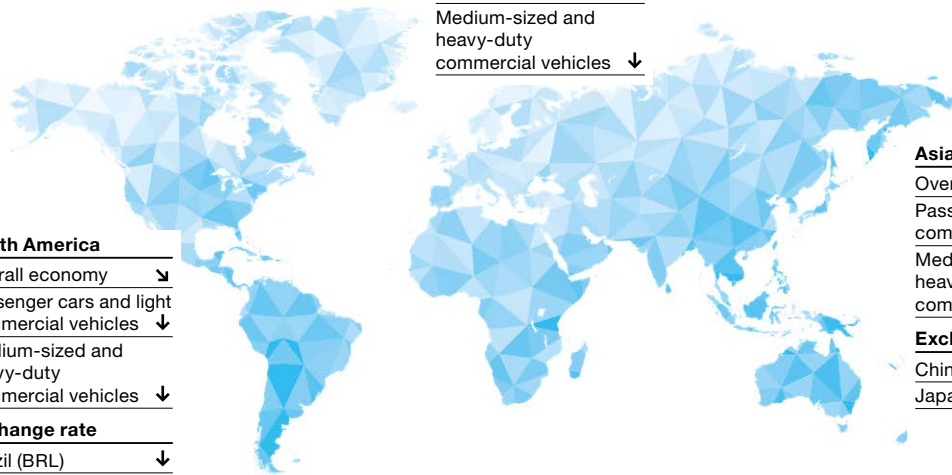
- Brazil (BRL) ↓
- Argentina (ARS) ↓

**Asia/Pacific**

- Overall economy ↘
- Passenger cars and light commercial vehicles ↓
- Medium-sized and heavy-duty commercial vehicles ↑

**Exchange rate**

- China (CNY) ↘
- Japan (JPY) →



Exchange rate development of various foreign currencies against the euro (EUR) as measured by the average market price compared with the previous year: Argentine peso (ARS), Brazilian real (BRL), Chinese renminbi (CNY), Japanese yen (JPY), Mexican peso (MXN), US dollar (USD)

**Development of the markets for passenger cars and light commercial vehicles**

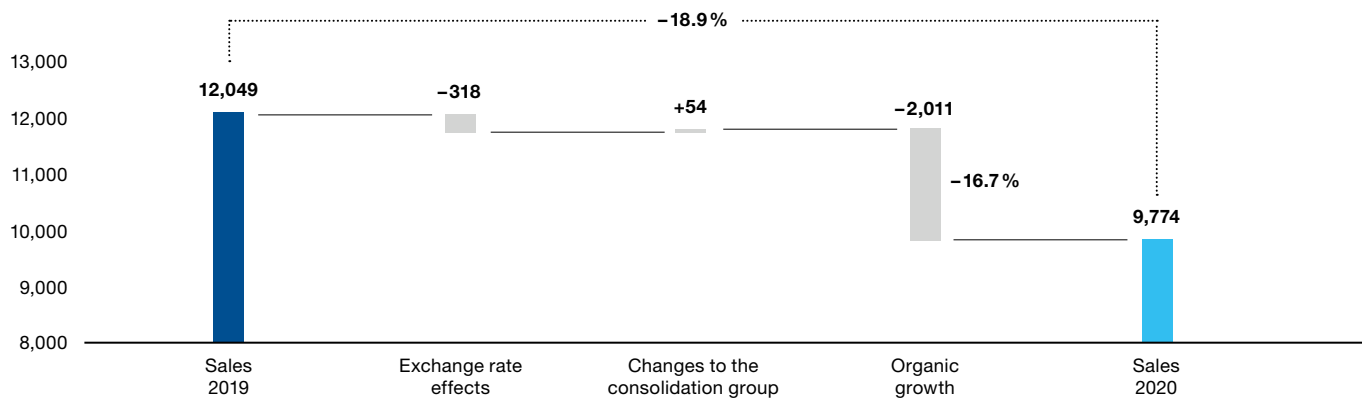
In the year under review, the pandemic caused a significant fall of around 16 percent in the global production of passenger cars and light commercial vehicles. This means that the downward trend observed in recent years has again worsened considerably—around 22 percent fewer vehicles were produced in 2020 compared with the peak in 2017. In Europe, manufacturing collapsed dramatically in the second quarter in particular, with production and demand picking up speed again in the third and, above all, fourth quarters. A similar picture emerged in North America where, due to high COVID-19 case rates and the uncertainty surrounding the presidential election in the United States, production fell by around 20 percent. South America also suffered badly from the pandemic and from a severe slump in the job market, a situation aggravated by the significant weakening of various national currencies. At well over 20 percent, India’s drop in production due to the pandemic was one of the steepest in the world. The lockdown brought production and demand to an almost complete standstill. The market recovered very sluggishly at first but picked up again in the final quarter of 2020. China was the only country where demand and production bounced back quickly, meaning that it came through the crisis comparatively well with a decline of around 4 percent over the year as a whole.

**Development of the markets for medium-sized and heavy-duty commercial vehicles**

In 2020, the production of medium-sized and heavy-duty commercial vehicles was about 6 percent below the previous year. In North America above all, the market experienced a severe slump of almost 30 percent. Here, the cyclical downturn in heavy-duty commercial vehicles was amplified by the coronavirus-related decline in economic output. These effects also converged in Europe, causing production figures to fall significantly. Clear shortfalls were likewise evident in South America and India. China, however, was the driving force in the commercial vehicle market. Boosted by massive infrastructure investments by the Chinese government, production figures in the country dramatically exceeded expectations with an increase of over 30 percent.

## SALES BRIDGE in EUR million

■ 2019 ■ 2020



## Business development

### Development of the MAHLE Group

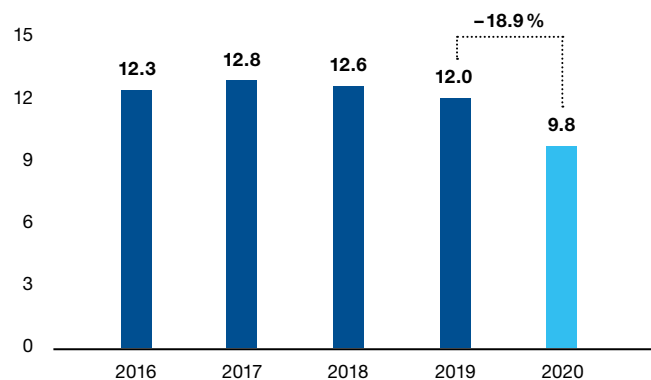
In the 2020 business year, the MAHLE Group achieved sales of EUR 9.8 billion, compared with EUR 12.0 billion in the previous year. Our sales therefore declined organically (i.e., after adjustment for exchange rate effects and changes to the consolidation group) by 16.7 percent, which roughly corresponds to the downturn in the global market for passenger cars and commercial vehicles.

The steep decline in sales was largely due to the COVID-19 pandemic and its economic consequences, which also had a severe impact on the automotive and commercial vehicle industry. As such, we were confronted with a range of challenges, including a temporary shutdown in production by numerous vehicle manufacturers, primarily during the first lockdown in March and April. The consequence for MAHLE was a drastic fall in sales. As the international markets began to recover over the remainder of the year, our sales stabilized in the final months, although at a lower level compared with 2019. Moreover, sales were adversely impacted by negative exchange rate effects amounting to EUR 318 million caused by the devaluation against the euro of key trading currencies such as the Argentine peso and Brazilian real. At EUR 54 million, changes to the consolidation group had a positive impact—albeit only to a minor extent. This was due in particular to the first-time full consolidation of the joint venture BHS, which was previously proportionately consolidated.

Overall, the 2020 business year was dominated by COVID-19. We assembled a global crisis team at an early stage with the goal not only of protecting the health of our workforce, our business partners, and society as a whole, but also of enabling the continued operation of our company by ensuring safe processes in production, the supply chains, administration, and other business activi-

ties. Furthermore, we set up dedicated working groups at our international locations and continuously shared updates on the coronavirus situation from the Management Board, crisis team, and employees in charge of the individual work packages. Nevertheless, in view of the dramatic slump in almost all international markets in the wake of the global spread of COVID-19 in the spring, we were forced to pause manufacturing at almost all plants around the world. Moreover, we temporarily closed some regional headquarters to break chains of infection. Over the course of the year, we took successive supplementary measures to minimize the consequences of the coronavirus crisis. These included employee-focused measures, such as the provision of protective materials, as well as activities aimed at wider society, for example, the

### DEVELOPMENT OF SALES 2016–2020 In EUR billion



in-house production of protective masks to be given away to distribution centers and hospitals. As part of our business-related response, we also adapted our cost structure in line with the reduction in demand caused by the pandemic. To that end, we made use of flexible instruments worldwide, such as short-time work and other governmental support measures aimed at safeguarding employment.

Despite these steps, the urgent need for Group-wide cost discipline and the resolute pursuit of our technological transformation has again increased due to the coronavirus pandemic. We therefore continued to focus on the structural reorganization of the MAHLE Group in the year under review, the first step being the further implementation of the restructuring measures announced back in 2019. In addition, we have thoroughly evaluated our business areas, regions, and locations and, in September 2020, identified excess capacities across the Group of 7,600 jobs, of which 3,700 are in Europe. Consultations on this matter are now underway with the employee representatives in order to discuss the necessary measures and to plan their implementation.

In spite of the heavy economic strain experienced in the year under review, we continue to focus intensively on the Group's technological transformation and on our strategic goals. At the beginning of the year under review, for instance, we created the new Electronics and Mechatronics business unit on the foundations of the former Mechatronics division and the two profit centers, Compressors and Pumps. This allows us to continue driving forward our future technologies and play an active role in shaping the transformation of the automotive industry.

At the same time, we strengthened our established business segments: On the one hand, this relates to our core business in ther-

mal management, with the increase in our shareholding in the MAHLE Behr Group. Furthermore, through our acquisition of Keihin's air conditioning business in Japan, Thailand, and the USA, we intend to improve our global position in air conditioning technology, and in particular our market access in Japan and Southeast Asia. On the other, we expanded our aftermarket business in thermal management products by acquiring all the shares in the former joint venture BHS. We also streamlined our portfolio of participations and sold our 50 percent share in the Austrian company MAHLE König GmbH to the König founding family.

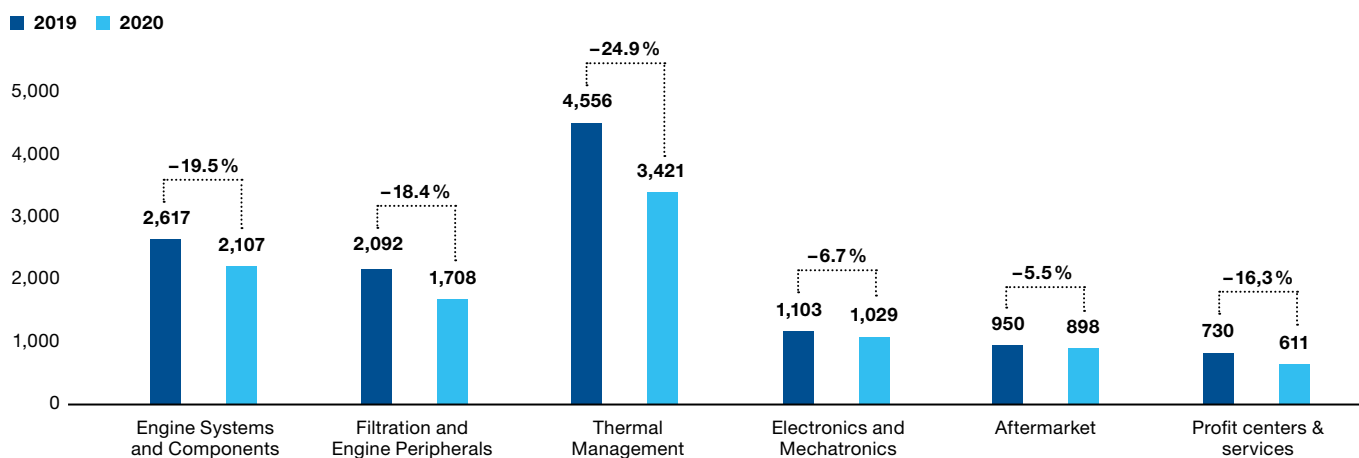
## Development of the business segments

The challenging market conditions led sales to slump in all of our business segments. However, certain key future growth areas proved to be very robust and recorded comparatively moderate declines in sales.

### Engine Systems and Components business unit

Sales in our Engine Systems and Components business unit amounted to EUR 2,107 million in 2020 and were thus 19.5 percent below the previous year's value. We recorded the most severe falls in sales in camshafts, passenger car gasoline and diesel engine pistons, and bearings. In contrast, we again succeeded in increasing sales of steel pistons for passenger cars in both Europe and North America. Nevertheless, these two markets—both key sales regions for this business unit—experienced very significant declines in sales overall. As a result of a tougher competitive environment, we had to carry out capacity adjustments and relocations to sites in Eastern Europe. It was in this context that our joint location in La Loggia/Saluzzo in Italy was closed in the year under review and the closure of the Gaidorf location in Germany was announced. Overall, revenues also fell significantly in

## SALES BY BUSINESS SEGMENT in EUR million



the South America and Asia/Pacific regions, with Asia/Pacific nevertheless remaining the best-performing region in the world on a comparative basis with a decline in sales of 6.9 percent after adjustment for exchange rate effects. In addition to the sales growth in individual product groups, this was due to the Chinese market, which recovered most quickly from the COVID-19 crisis.

#### **Filtration and Engine Peripherals business unit**

Sales in the Filtration and Engine Peripherals business unit were 18.4 percent lower than in 2019, at EUR 1,708 million, due to the coronavirus pandemic. Almost all product groups were affected, although the spare parts business for the maintenance and repair of original parts was able to cushion the declines to some extent. Our sales of tank ventilation systems were also higher in the Asia/Pacific region. On a regional basis, we benefited from the rapid recovery of the Chinese market—our sales in China were even significantly higher than in 2019 after adjustment for exchange rate effects. As a consequence, the Asia/Pacific region performed best, with a 6.3 percent decline in sales after adjustment for exchange rate effects. In Europe, as previously announced, we closed our plants in Telford/Great Britain and Öhringen/Germany. Conversely, we expanded our plant in Timisoara/Romania.

#### **Thermal Management business unit**

Sales in the Thermal Management business unit fell by 24.9 percent to EUR 3,421 million, to which the extreme downturn in the very high double-digit range in April 2020 was the primary contributing factor. Although there was a recovery in the months that followed, sales figures remained below the same months of the previous year. Overall, sales of components for e-mobility applications, such as battery cooling, were less severely affected by the decline. Concerning components for battery electric vehicle platforms, we broadened our portfolio thanks to key project launches. Sales in the Asia/Pacific region recovered the fastest from the influence of the coronavirus pandemic, and so we were even able to achieve higher sales to commercial vehicle customers. Overall, however, there was an organic decline in sales of 11.1 percent in this region. In the other regions, on the other hand, our sales development correlated strongly with the proportion of sales in each region linked to commercial vehicles. At 40.0 percent, the drop in sales after adjustment for exchange rate effects in the South America region was thus particularly steep due to the high proportion linked to commercial vehicles, whereas Europe and North America, at 24.5 percent and 22.8 percent respectively, benefited from commercial vehicles accounting for a relatively low proportion of sales.

#### **Electronics and Mechatronics business unit**

The Electronics and Mechatronics business unit achieved sales of EUR 1,029 million in the year under review. Compared with the sales figures for the Mechatronics division and the two profit centers, Compressors and Pumps, from which the new business unit evolved in 2020, this corresponds to a decline of 6.7 percent compared with 2019. Adjusted for negative exchange rate effects, the organic sales deficit amounted to about 4 percent. This

decline was primarily caused by the COVID-19 pandemic. But there were also successes to report: With our onboard charging systems, we are producing the first high-volume products in the Control and Power Electronics area in Motilla del Palancar/Spain, and we are also manufacturing a traction motor for electric vehicles in large quantities in Šempeter pri Gorici/Slovenia. From a regional perspective, Asia/Pacific—MAHLE's second-largest region in this business unit—increased its 2019 sales level organically by 1.5 percent. In Europe, our largest sales market, we registered sales losses of 0.3 percent after adjustment for exchange rate effects. With a fall in excess of 10 percent after adjustments, the greatest drop in sales was recorded in the North America and South America regions.

#### **Aftermarket business unit**

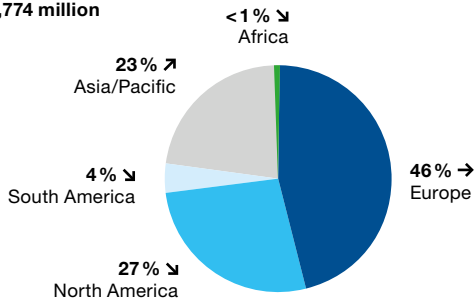
In the Aftermarket business unit, we generated sales of EUR 898 million, 5.5 percent less than in 2019. Negative effects arising from currency conversion were largely offset by positive sales effects from the first-time full consolidation of the subgroup BHS. Organically, sales fell by 4.0 percent due to the coronavirus pandemic. Beginning in May, we benefited from the revival of the Chinese market. A broader market recovery then became apparent at the end of the second quarter. In absolute terms, engine components and filter products were most affected by the pandemic-related low demand. But on the positive side, the completed integration of the former joint venture BHS led to a strong market presence in the thermal management segment of the independent aftermarket, thus building on the business unit's robust position in the engine components and filter products segments.

#### **Profit centers and services**

In our profit centers and services, we achieved sales amounting to EUR 611 million, although the merger of the two profit centers Compressors and Pumps into the new Electronics and Mechatronics business unit must be taken into account when making a comparison with 2019 figures. If the sales of the remaining profit centers and services are adjusted for negative exchange rate effects, this gives an organic sales deficit of 15.7 percent. All in all, Control Units—our strongest profit center in terms of sales—and the Large and Small Engine Components profit center were least affected by the downturn.

## SALES BY REGION

Total:  
EUR 9,774 million



The directional arrows (↗↘) show the change in the proportion of sales compared with the previous year.

## Development of the regions

The MAHLE Group operates around the world with production and development locations in 30 countries. As a result, we are close to our customers and able to cooperate with them directly while also responding flexibly to regional market fluctuations.

In all regions, the weak demand in the automotive markets caused by the pandemic led to substantial double-digit declines in sales. The only exception was Asia/Pacific, where the Chinese market's rapid recovery partially offset the sales losses in other countries. Nevertheless, we recorded an overall organic decline in sales of 6.6 percent as at the end of the year. At -36.9 percent, the drop in the South America region was the most severe, with a significant share of the shortfall being attributable to extremely negative exchange rate effects. In the following, we provide an overview of the detailed development in the regions, based on sales by country of production:

### Europe

Sales in the Europe region amounted to EUR 4,520 million in the year under review—a fall of 18.8 percent compared with 2019. After adjustment for exchange rate effects, however, the decline was somewhat less severe. Sales were impaired above all by the coronavirus pandemic and the associated cooling-off of activity in the automotive and commercial vehicles sector. In Europe, the automotive industry collapsed dramatically in the second quarter in particular, with production and demand slowly resuming in the third quarter. Overall, our two largest business segments plus the Filtration and Engine Peripherals business unit were the hardest hit with sales losses of between 20 and 25 percent, whereas growth after adjustment for exchange rate effects in the Electronics and Mechatronics business unit and Aftermarket remained stable.

### North America

In North America, we achieved revenue of EUR 2,618 million, which is 22.8 percent below the 2019 value. In organic terms, the decline in sales was somewhat less pronounced. Besides the persistently high COVID-19 case rates, the uncertainty concerning the US presidential election was a factor in the weak demand. Except for Aftermarket, all our business units were equally impacted by this situation and recorded declines in sales of over 15 percent.

### South America

Sales in South America fell by 36.9 percent to EUR 398 million. However, account must be taken of negative exchange rate effects of EUR 144 million from the devaluation of the Argentine and Brazilian currencies against the euro. Excluding these effects, the decline in sales was significantly lower at -14.0 percent. The drop was predominantly due to the pandemic and the associated collapse of the job market. Our Thermal Management business unit was particularly badly affected with sales losses after adjustment for exchange rate effects of 40.0 percent. The reason for this is its high proportion of South American commercial vehicle customers who experienced a massive fall in demand.

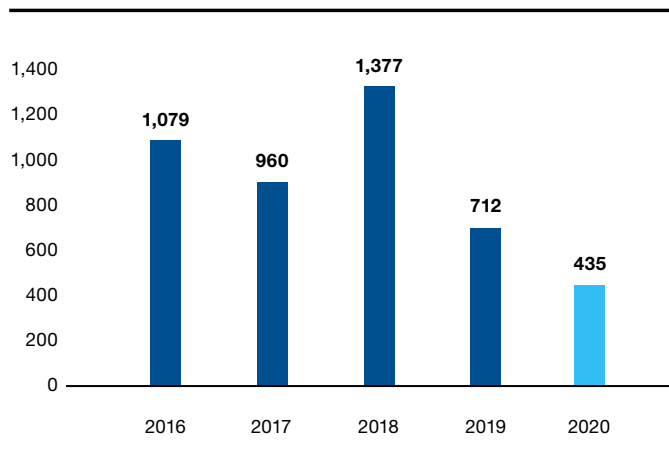
### Asia/Pacific

In the Asia/Pacific region, sales in the year under review were 8.4 percent below the 2019 value (in organic terms: -6.6 percent) at EUR 2,201 million. Overall, the region's revenue shrank the least on a comparative basis, which was primarily due to the Chinese market, where demand and production latterly resumed a clear upward trend. Our three largest business units recorded declines in sales of between 6.0 and 11.0 percent after adjustment for exchange rate effects. Despite the difficult situation, Aftermarket remained comparatively stable in this region at -0.9 percent after adjustment for exchange rate effects.

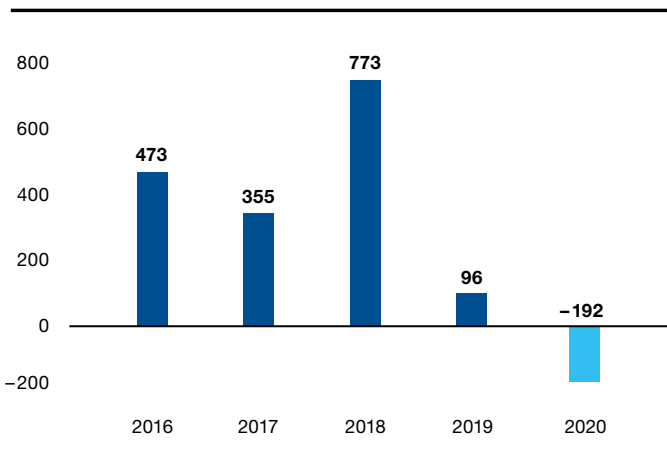
### Africa

With a drop of 33.2 percent, sales in the Africa region fell very considerably to EUR 37 million. Adjusted for negative exchange rate effects, on the other hand, the decline was markedly lower at 23.0 percent. Revenues in our smallest region were primarily generated in the Thermal Management business unit.

**DEVELOPMENT OF EBITDA 2016–2020**  
in EUR million



**DEVELOPMENT OF EBIT 2016–2020**  
in EUR million



## Net assets, financial position, and results of operations

### Results of operations

In the 2020 business year, MAHLE generated sales of EUR 9.8 billion, compared with EUR 12.0 billion in the previous year. The slump of 19 percent was primarily attributable to the economic impact of the COVID-19 pandemic and exacerbated by negative exchange rate effects. This also influenced our result from business activities massively, which, at EUR –302 million was likewise substantially lower than in the previous year (2019: EUR 10 million).

In addition to the direct consequences of the coronavirus pandemic, our earnings situation was particularly impacted by special effects in the year under review. The technological change in the automotive supply industry has further intensified the need to make capacity adjustments. Accordingly, we made substantial accruals in the year under review for essential restructuring measures. This was counteracted by the one-time income from an insurance settlement in connection with a warranty claim relating to previous periods. In total, the two special effects impacted our result by around EUR 260 million. Compared with the previous year's figure, which was also adjusted for restructuring expenses, the result from business activities adjusted for special effects was lower in the reporting year by a figure in the low hundreds of millions. This shows that we were able to successfully cushion the negative effects of the significant decline in sales on the profit side, and is due in particular to the fact that we quickly adjusted our cost structure to the lower demand caused by the pandemic. Despite these efforts and the gradual recovery of the international markets

over the course of the year, it was not possible to achieve the figures forecast in 2019—before the outbreak of the coronavirus pandemic—for organic sales growth and the result from business activities. The aforementioned effects had a strong negative impact on our operating income figures EBITDA and EBIT, as well as on the operating result used for internal steering, a key figure similar to EBIT but adjusted for individual circumstances.

The major income statement items developed as per the following details: Cost of sales amounted to EUR 8,445 million, which is EUR 1,690 million below the previous year's value. The cost of sales ratio increased markedly, from 84.1 percent to 86.4 percent. The main reason for this rise is the drop in sales caused by the coronavirus pandemic; although crisis measures were introduced, such as shutting down numerous production locations, it was simply not possible to reduce the cost of sales to the same extent immediately. Moreover, the cost of sales was negatively impacted by the high expenses associated with restructuring measures caused by capacity adjustments; the same also applies to the expense items described below. We reduced our selling expenses by a good 7 percent to EUR 520 million; general administrative expenses fell from EUR 520 million to EUR 473 million. This is primarily attributable to the rapid variabilization of significant fixed costs with respect to personnel and material expenses. At EUR 644 million (2019: EUR 751 million), our Group-wide research and development expenditure remained at a high level in the year under review, despite the difficult conditions. The balance of other operating income and expenses increased significantly by almost EUR 100 million in comparison with the previous year. The main reason for this was the one-time income in connection with an insurance settlement, as mentioned above. Owing to the acquisitions made in previous years—with the exception of research and development expenses and administration costs—all cost items

**CONSOLIDATED INCOME STATEMENT**  
in EUR million

	2020	in %	2019	in %
Sales	9,774	100.0	12,049	100.0
Cost of sales	8,445	-86.4	-10,136	-84.1
<b>Gross profit on sales</b>	<b>1,329</b>	<b>13.6</b>	<b>1,913</b>	<b>15.9</b>
Selling expenses and general administrative expenses	-993	-10.2	-1,080	-9.0
Research and development expenses	-644	-6.6	-751	-6.2
Other operating income and expenses	130	1.3	31	0.3
Financial result	-124	-1.3	-104	-0.9
<b>Result from business activities</b>	<b>-302</b>	<b>-3.1</b>	<b>10</b>	<b>0.1</b>
Taxes on income	-98	-1.0	-189	-1.6
<b>Result after taxes</b>	<b>-400</b>	<b>-4.1</b>	<b>-180</b>	<b>-1.5</b>
Other taxes	-33	-0.3	-32	-0.3
<b>Consolidated net loss/net income</b>	<b>-434</b>	<b>-4.4</b>	<b>-212</b>	<b>-1.8</b>
<b>EBIT</b>	<b>-192</b>	<b>-2.0</b>	<b>96</b>	<b>0.8</b>
<b>EBITDA</b>	<b>435</b>	<b>4.4</b>	<b>712</b>	<b>5.9</b>

were negatively influenced by the effects of purchase price allocations in accordance with the German Commercial Code (HGB). In total, these amounted to EUR 118 million before tax and include EUR 48 million relating to amortization of goodwill.

The further substantial decrease in EBIT from EUR 96 million in 2019 to EUR -192 million in the year under review was due not only to the direct impact of the exceptional situation caused by the pandemic, as outlined above, but also to the creation of restructuring accruals. Accordingly, the EBIT margin also decreased significantly to -2.0 percent (previous year: 0.8 percent). Adjusted for the effects of the purchase price allocations and the amortization of goodwill, the EBIT margin was -0.8 percent.

The financial result deteriorated by EUR 20 million to EUR -124 million in 2020 compared with the previous year. This was largely due to the impairment of financial assets and the lower result from associated companies. In line with the decline in result, taxes on income also decreased, with the corresponding expenditure falling by EUR 91 million in comparison with the previous year. Nevertheless, despite the negative Group result, taxes on income amounted to EUR 98 million. The tax expenditure can be explained, in particular, by the nonrecognition of deferred tax assets concerning tax loss carryforwards and to valuation allowances on deferred tax in respect of temporary differences. Other factors contributing to the tax burden were positive results of individual companies that cannot be consolidated for tax purposes with losses of other Group companies and withholding taxes unrelated to profit. At EUR 33 million, other tax expenses remained at the

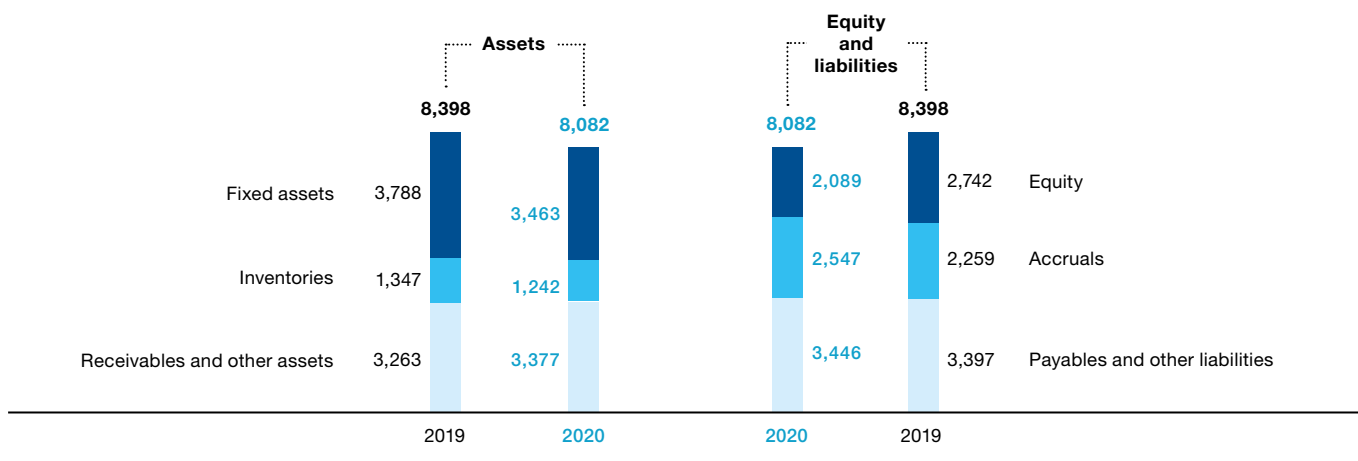
previous year's level. Consequently, the overall result was a net loss for the year of EUR 434 million (2019: net loss for the year of EUR 212 million).

### Net assets position

As at the balance sheet date of December 31, 2020, our balance sheet total had decreased by EUR 316 million to EUR 8,082 million in comparison with 2019. The decline is primarily attributable to negative exchange rate effects, but also reflects the drop in business volume caused by the coronavirus crisis and our efforts to reduce our capital commitment. At EUR 3,463 million, fixed assets were significantly below the previous year's level. Tangible fixed assets decreased by EUR 243 million owing to negative exchange rate effects and lower investments in technical equipment and machinery in connection with the reduced sales volume. Furthermore, intangible fixed assets declined by EUR 63 million. Additions to intangible assets, which were mainly connected with the acquisition of further shares in MAHLE Behr as at January 1, 2020, were more than offset by amortization. This essentially related to the amortization of goodwill and hidden reserves, which were disclosed as part of purchase price allocations.

Current assets of the MAHLE Group exceeded the previous year's level by EUR 19 million, amounting to EUR 4,319 million. This is attributable to the significant increase in our cash holdings of over EUR 300 million to EUR 871 million. The substantially strengthened cash position reflects our successful ongoing work to optimize net working capital. In addition to our own efforts, exchange

**BALANCE SHEET STRUCTURE OF THE MAHLE GROUP**  
in EUR million



rate effects also contributed to a reduction of EUR 105 million in inventories and EUR 177 million in trade receivables in comparison with the previous year.

**NET DEBT ON OUR BALANCE SHEET REDUCED BY**

**31%**

**COMPARED WITH THE PREVIOUS YEAR**

Our equity declined in 2020, by EUR 654 million to EUR 2,089 million. This is essentially due to the net loss for the year and negative exchange rate effects of EUR 163 million. Our improved cash position also had the effect of extending the balance sheet, which contributed around 1 percentage point to the decline in the equity ratio from 32.7 percent to 25.8 percent. Accruals rose to EUR 2,547 million, which corresponds to an increase of EUR 287 million in comparison with the end of the previous year. This is mainly caused by the setup of extensive restructuring accruals. In addition, guarantee and risk accruals increased by EUR 60 million and accruals for pensions by EUR 36 million, the latter primarily owing to interest effects. An increase of EUR 152 million was recorded in trade payables—this was positively impacted by our efforts to improve payment terms. Conversely, we reduced liabilities to banks by EUR 112 million. Taking the rise in our cash holdings into account, net debt on our balance sheet decreased significantly from EUR 1,340 million to EUR 925 million in the year under review.

**Financial position**

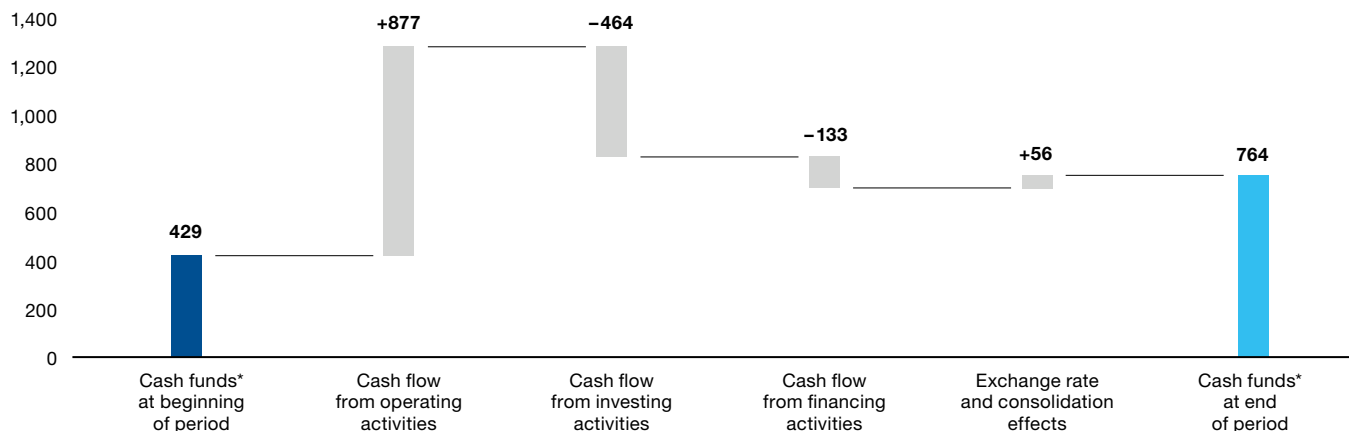
As part of its global growth, MAHLE has established a broad basis for its Group financing over the past few years and improved its diversification. Our financing portfolio includes syndicated credit lines, German private placement loans, bilateral loans, and euro-denominated corporate bonds. With our conservative financing policy, we are pursuing the objective of an implicit investment grade risk. This positioning is also reflected by the moderate leverage and solid equity ratio.

In order to gain greater room for maneuver during the coronavirus pandemic, we decided in June 2020 to agree a further syndicated credit line amounting to EUR 500 million and maturing in 2023. This additional liquidity provision supplements our existing syndicated credit line of EUR 1.8 billion, whose term runs until 2024. As at the end of the year under review, the unused but firmly committed credit lines amounted to EUR 2,432 million, which, as in the case of the cash holdings, contributed to the financial stability of our Group. Our cash holdings were diversified across various banks that were selected according to rating criteria.

We closed the 2020 business year with a positive cash flow of EUR 279 million. The main factor was the cash flow from operating activities of EUR 877 million. Despite the Group's clearly negative net loss for the year, the cash flow from operating activities increased significantly due to reduced capital commitment in net working capital and high noncash expenses for the creation of restructuring



## CASH FLOWS in EUR million



\* Cash in hand, bank balances with an initial term of less than 3 months, and checks less liabilities to banks with an initial term of less than 3 months

accruals. At EUR 464 million, the net cash outflow arising from our investing activities was lower than in 2019, largely as a result of reduced expenditure on tangible fixed assets. Our cash flow from operating activities completely covered our cash requirements for investments in the year under review. The cash flow from financing activities showed a net cash outflow of EUR 133 million (2019: net cash inflow of EUR 303 million). The significant change as compared with the previous year is due to the fact that no new bonds were issued or German private placement loans taken up in 2020; instead, we reduced financial liabilities.

## Investments

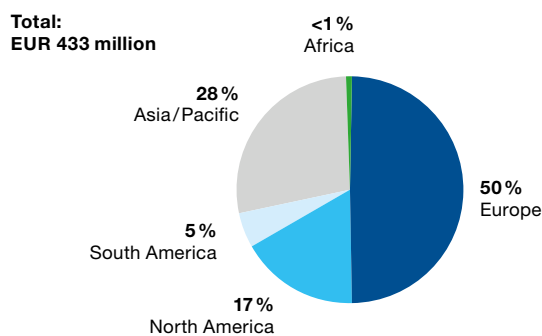
The influence of the pandemic was also reflected in the MAHLE Group's investments: At EUR 433 million, our investments in tangible fixed assets were EUR 116 million lower in 2020 than in 2019. While investments in important areas of future activity exceeded the depreciation on tangible fixed assets, the Group-wide ratio of 89 percent was below the previous year's value (113 percent). In contrast, the investment ratio, which shows the relationship between investments and sales, reduced only slightly to 4.4 percent (previous year: 4.6 percent).

From a regional perspective, Europe was our most important investment location: this is where we made around half of our investments. Besides Germany, the countries in which high levels of investment were made in the expansion of plants and production facilities once again included Poland, Spain, and Slovenia. In both Spain and Slovenia, we largely invested in the Electronics and Mechatronics business unit. We made around 28 percent of our Group-wide investments in tangible fixed assets in the Asia/Pacific region in 2020. As in the previous year, the greatest sum was directed toward our Chinese locations, where, in addition to project-

related investments in a steel piston production line, we also substantially invested in our mechatronics plant in Taicang. In addition, we expanded production lines in Japan. In North America—the region accounting for around 17 percent of the total volume in 2020—we mainly invested in our US locations, in connection with customer projects, for example.

In addition to capital expenditure on tangible fixed assets, we also took advantage of strategic acquisitions during the year under review to expand our business activities as part of our dual strategy. We thus further increased our participation in MAHLE Behr to strengthen our core business in thermal management. We also established an even better position for ourselves in the aftermarket business in thermal management products with the complete acquisition of BHS on January 1, 2020.

## INVESTMENTS BY REGION



# Additional key performance indicators

**Our innovative strength has been the foundation of our success for 100 years. Even in difficult times, we therefore maintain our level of investment in research and development.**

**Despite a challenging environment, we have maintained our supply chains. We were thus able to ramp up our production again quickly after the lockdown in the spring.**

**In the future, we will drive forward technologies and pilot projects that have proven themselves in the crisis, such as remote maintenance using augmented reality.**

## Human resources

As at the end of 2020, the MAHLE Group employed 72,184 people worldwide, which equates to a decrease of 4,831 employees or 6.3 percent compared with the previous year. The main reason for the staffing level adjustments was a decline in orders due to the COVID-19 pandemic and the persistent weakness of the automotive industry.

Despite the restrictions resulting from the pandemic, we continued our consistent investment in the training and further education of our workforce in the year under review, pushing ahead with the switch to online formats, among other measures. After all, we are aware that our employees are the key to the future viability of the MAHLE Group. Their know-how, motivation, and

commitment are the foundation of our successful development. Thus, in spite of the challenging circumstances, our employees participated in a total of 60,387 qualification activities (2019: 99,724), while adhering to strict hygiene and protection measures. Moreover, by increasing the number of corporate e-learning options we offer, around 12,000 courses took place online.

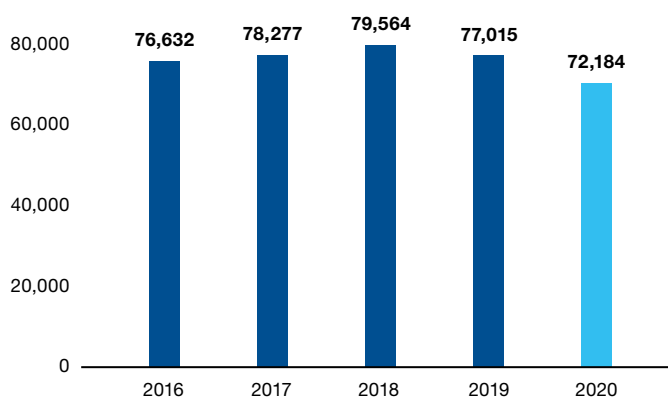
The global absence rate (excluding joint ventures) amounted to 3.6 percent in the year under review (2019: 3.9 percent).

### Headcount by region

As at the reference date, we employed 33,009 people at our locations in Europe, 2,327 employees or 6.6 percent fewer than in 2019. There was a decrease in almost all European countries. In connection with restructuring measures, the number of temporary jobs was reduced at numerous locations and vacant positions were not filled. We also shut down our location in Öhringen/Germany, with its over 200 employees, and ceased our activities at our Italian locations in La Loggia and Saluzzo, with their over 400 employees. In the latter case, we were fortunately able to attract an investor, who has taken on both of the Italian locations. In Spain and Bosnia-Herzegovina, on the other hand, we hired 277 and 77 new employees respectively. This was because of the good order levels and the further expansion of the Electronics and Mechatronics business unit.

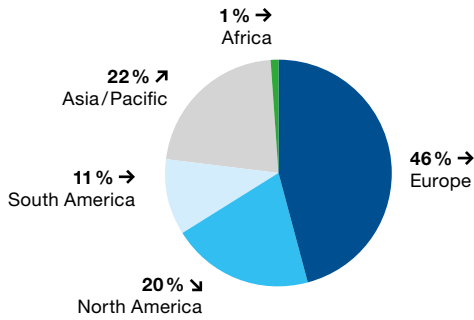
In North America, our employees numbered 14,599 in total as at the end of 2020 and were thus 1,537 (–9.5 percent) fewer than in 2019. The staffing cutbacks in the region were also due to the crisis and primarily affected the USA and Mexico.

### HEADCOUNT DEVELOPMENT 2016–2020



## HEADCOUNT BY REGION

Total:  
72,184



The directional arrows (↗ → ↘) show the change in the proportion of employees compared with the previous year.

As at the end of the year under review, we employed 7,955 people in South America—436 fewer than in the previous year—which corresponds to a fall of 5.2 percent.

In the Asia/Pacific region, we recorded 15,694 employees as at the end of the year under review, 467 or 2.9 percent fewer than in 2019.

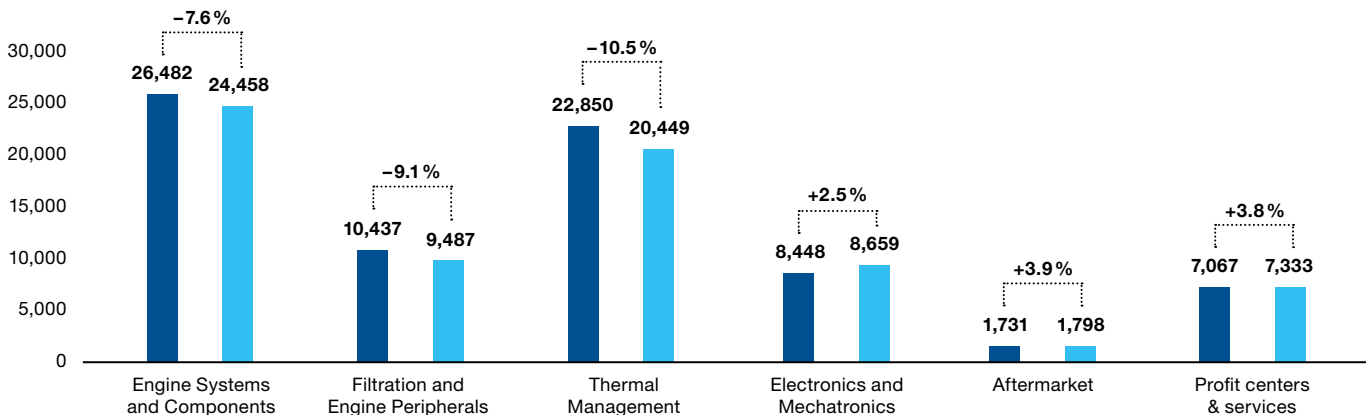
In Africa (South Africa), 927 people were employed at our locations as at the reference date of December 31, 2020—64 fewer in total than in the previous year (–6.4 percent).

## Headcount by business segment

In our Engine Systems and Components business unit, the staffing level decreased by 2,024 employees. Nevertheless, at 33.9 percent, the majority of our Group's employees still worked at one of the 42 locations belonging to this business unit. We employed around 28.3 percent of our total workforce at the 38 locations of the Thermal Management business unit, 2,401 employees fewer than in the previous year. The Filtration and Engine Peripherals business unit's 30 plants were the place of work for 13.1 percent of the Group's employees, 950 people or 9.1 percent fewer than in 2019. At the end of 2020, 8,659 staff were employed in the newly created Electronics and Mechatronics business unit, which equates to around 12 percent of the workforce as a whole. Aftermarket, our smallest business unit in terms of personnel, had 67 employees more in total at the end of 2020 than at the same point in the previous year. One reason for the growth was the acquisition of the majority share of BHS at the start of 2020. In our profit centers and services, we recorded a rise in the staffing level amounting to 266 employees compared with the previous year. This was due, on the one hand, to the centralization of the purchasing functions within the services area and, on the other, to the development of the shared service centers in Wrocław/Poland, Monterrey/Mexico, and Pune/India.

## HEADCOUNT BY BUSINESS SEGMENT

■ 2019 ■ 2020



# Technology and innovation

Despite the difficult conditions, our Group-wide research and development activities remained at a high level in the 2020 business year. Our investments amounted to EUR 644 million; in 2019, research and development expenditure came to EUR 751 million. This resulted in a high ratio in relation to sales of 6.6 percent for 2020 (2019: 6.2 percent). We maintained the ratio adjusted for restructuring expenses at a constant level compared with the previous year, reflecting the high importance of research and development at MAHLE. As at December 31, 2020, this area of our business employed around 5,480 staff. In the year under review, MAHLE registered 256 new patents in addition to a further 307 records of inventions.

In 2020, we continued the dual strategy that MAHLE has been pursuing for several years, with a particular focus on the subjects of hydrogen and battery technology. On the one hand, we are consistently working on the ongoing development of systems and components for alternative drive concepts, including hybrid and battery electric drives as well as fuel cells. The goal is demand-oriented mobility, which matches the drive type to the application concerned in each case. On the other hand, we also want to further develop the combustion engine to make it climate-neutral as well as cleaner and more efficient. To achieve this, we are making use not only of conventional engine testing but also of innovations from the field of additive manufacturing and the rapid prototyping of pistons and charge air coolers, for example, as well as alternative fuels.

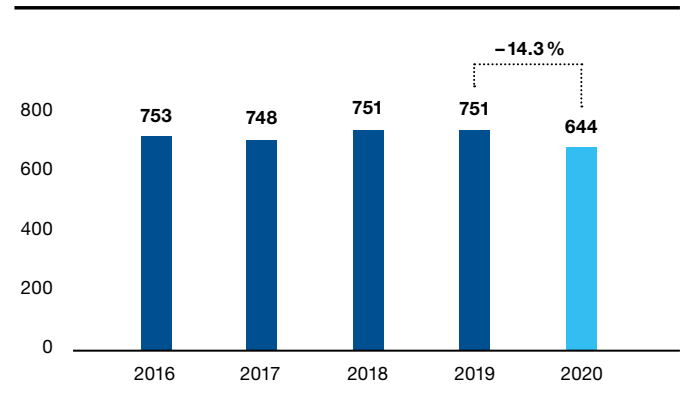
## Selected innovations from the 2020 business year

In the year under review, we used 3D printing technology to manufacture a piston suitable for series production for the first time and tested it in collaboration with our customer and the project partners. This technology opens up tremendous design freedom that will allow us to make pistons lighter and optimize cooling. Together with an engine redesign, this can help to bring about an increase in performance or efficiency.

In 2020, MAHLE also introduced a new condenser for hybrid and electric vehicles that accelerates traction battery charging. In combination with other components in the cooling system, it ensures the battery is kept cool and thus protected during fast charging. At the same time, the condenser provides sufficient cooling capacity to control the cabin temperature without requiring additional installation space.

In the middle of the year, we launched a new drive system for e-bikes. The X35+ system consists of a wheel hub motor, battery, and control units, and is so compact that it can be integrated unobtrusively into a conventional bicycle frame. With the X35+ drive system, MAHLE has deliberately focused on the user rather than

**R&D EXPENDITURE 2016–2020**  
in EUR million



on achieving a maximum possible power output. This makes the system more streamlined and lighter: including the battery, the X35+ weighs 3.5 kilograms. The hardware is supplemented by mobile and web-based apps.

MAHLE has also developed two standardized air filter solutions for fuel cells, which protect the cells against harmful gases and particles. Furthermore, this new modular approach reduces our development times and costs, with developers now having direct access to a fully developed standard component instead of having to find individual solutions for each vehicle.

Another innovation in 2020 was an air conditioning system with integrated fine-particulate sensors, which reduces exposure to fine particulates in the vehicle cabin. The sensors are in direct contact with both the cabin air and the external air, with the result that the air conditioning system reacts immediately to specific pollution levels and cleans the air in the vehicle cabin as required.

In the year under review, we also agreed to work together with Canadian fuel cell manufacturer Ballard Power Systems Inc. on the future development of fuel cell systems for commercial vehicles of various weight classes. The long-term goal of the cooperation is to develop and manufacture complete fuel cell systems for the European, North American, and Asian markets.

In addition, MAHLE accelerated its mechatronics and electronics activities in the 2020 business year. A figure in the mid-double-digit millions was invested in the new global development center for mechatronics in Kornwestheim, near Stuttgart/Germany. Around 100 engineers work at the location to develop product solutions for electric drive systems, actuators, and electric auxiliaries for vehicles with hybrid, hydrogen, or battery electric drives.

## Purchasing

From a purchasing perspective, the year under review was dominated by challenging circumstances from the outset, the reasons being a difficult market environment and additional pending trade restrictions. Raw material prices were also highly volatile over the course of the year: While prices fell significantly in the first half of the year, particularly for aluminum and copper, this trend reversed in the second half-year. On average over the year, raw material prices were only able to offset the negative effects to a minor extent.

The largest organizational project for 2020—the centralization of the purchasing activities for the automotive business—was implemented at the very start of the year. The new function went live first in the North America region, with all other regions and the global functions following by the middle of the year. The goals of the reorganization are to exploit synergies more effectively and to further strengthen and expand our market position.

Over the course of the year, the coronavirus pandemic also had a significant influence on MAHLE's purchasing activities. The first task in this respect was therefore to reorganize key purchasing issues. Initially, we needed to safeguard supplies to our plants, and thus also deliveries to our customers, in view of the fact that our regions were impacted by COVID-19 to different degrees and at different times. In connection with the pandemic, we were also faced by an increasing number of (impending) business failures among our suppliers, requiring us to deploy resources to both avert and handle these situations.

Despite the difficult circumstances, MAHLE also had successes to report with regard to the Purchasing function. For example, continuous improvements were made to payment terms around the world during the year under review, thus also positively influencing the Group's cash position.

Alongside all these activities, we continued to drive forward the reorganization of the Purchasing function during the year under review: IT systems were standardized, and Group-wide processes established within the new organization. We also pushed ahead with the digitalization of our purchasing activities, including the rollout of the eBuy platform for the procurement of indirect materials and services.

## Production, quality, and environment

### Production at MAHLE

Our production activities were also severely impacted by the coronavirus pandemic in the year under review. A crisis team took charge of a comprehensive hygiene concept at an early stage in order to both protect our workforce and enable the continued operation of our manufacturing facilities. Due to the lockdown in the spring and the associated slump in the international markets, we had to close most production locations temporarily, but nonetheless completely. Our suppliers also suffered from the effects of the pandemic, but we were still able to secure our supply chains for the long term. In spite of the situation, we pushed ahead, albeit to a limited extent, with our continuous improvement process, which encompasses all of MAHLE's production locations and business areas. We were thus obliged to postpone on-site implementations and instead focused on strategy and methodology.

In developing our strategic plan, we drew on findings from the preceding MAHLE Production System project phase and further developed the design of the production system. Our long-term goal is thus to position ourselves among the world's leading lean enterprises with a significantly higher level of performance along the entire value chain.

Our steps taken with regard to Industry 4.0 include the further expansion of our manufacturing execution system (OneMES). The first plants and customers are already using it and are thus able to make better use of machine data and the tracking of parts and processes. In combination with MAHLE's enterprise resource planning system (ERP/MORE), OneMES makes it possible to exchange information and data between machines and Corporate Planning and use it in real time. We expect this to result in greater productivity and even higher quality.

We plan to push forward technologies and pilot projects that have proven themselves in the COVID-19 pandemic. We aim to further develop remote maintenance using augmented reality and new remote direct access to a technical standard with a high level of data security.

## Quality management at MAHLE

We know that our success is based on quality. Innovative, defect-free, and reliable products and systems are at the heart of this. That is why quality targets are core elements of our annual business plan. We define them from the top down, flesh them out from the bottom up, and consolidate them across the operational business areas. In addition, a Group-wide quality management system has been used in all our business processes for many years now.

In 2020, we successfully pushed ahead with our Group-wide MAHLE Quality Improvement Program, prioritizing specific topics. Its goal is to carry on continuously improving the quality of our products and services while strengthening our quality mind-set. The training of our workforce is just as much a part of the program as the projects we use to coordinate activities, standardize process flows, and optimize our products and processes. Through these efforts, we aim to further reduce quality costs and risks and to eliminate potential sources of defects as early as the product development stage. We also employ a variety of quality assurance measures in series production.

Our MAHLE Quality Improvement Program involves a regular dialog between our teams. The results of this dialog feed into and optimize our process flows. Furthermore, MAHLE took part in World Quality Day in November 2020 by holding its own online conference. It was an opportunity for all our production locations to discuss the current status, priorities, improvements, and successes as regards quality.

Our customers deliver data relating to our quality performance in various formats. In our Group-wide database, we then transfer this data to a harmonized reporting system with the aim of exploiting the potential for improvement offered by this (standardized) information to even greater effect.

### NUMBER OF CUSTOMER COMPLAINTS REDUCED BY

# 17 %

### COMPARED WITH THE PREVIOUS YEAR

As regards customer complaints, these fell by 17 percent in 2020 compared with the previous year. We also achieved a further reduction in the number of faulty delivered parts in the year under review. The quality of our products was again acknowledged by around 80 customers in the business year.

## Safety at work and environment

To make our employees' workplaces safe, we implement technical, organizational, and personal protective measures to minimize occupational risks. These steps are based on our regular risk assessments, from which we continuously derive measures aimed at improving safety at work and related targets. We check compliance with the targets and implementation of the measures by means of regular audits and observation tours.

### ACCIDENT RATE FELL BY

# 23 %

### IN COMPARISON WITH THE PREVIOUS YEAR

In 2020, in addition to comprehensive coronavirus protection measures, our work focused on the further harmonization of internal processes with the result that we were able to cut our accident rate significantly for the fourth consecutive year: from 6.8 accidents per million hours worked in 2017 down to 3.7 accidents in the year under review. We will also continue to pursue the subject of workplace safety as a top priority in the coming year and aim to establish it even more firmly in all our employees' minds. Our action plan includes short, hazard-related training courses known as safety talks, which address topics such as the right way to handle various pieces of equipment and are available to all plants. Brief safety observation tours are also carried out at all our locations on a regular basis. In addition, we extended the certification of the safety at work management system according to ISO 45001 to further locations in the year under review. We plan to gradually introduce this certification at all our locations.

Our approach to environmental protection extends from research and development to production through to the recycling of our products. Existing products, consumables, processes, and machines are subject to ongoing review and improvement in order to minimize environmental impacts. In 2020, the MAHLE Management Board determined a Group-wide CO<sub>2</sub> reduction target. By 2040, the MAHLE Group aims to be carbon-neutral in terms of all direct CO<sub>2</sub> emissions and those associated with purchased energy (Scope 1 and Scope 2 in accordance with the Greenhouse Gas Protocol). One key means of achieving this target is to make annual reductions in the specific energy consumption of our plants relative to value added. We aim to achieve further reductions in CO<sub>2</sub> by generating our own renewable electricity and purchasing green electricity. In the long term, we will use compensation measures to offset any remaining unavoidable CO<sub>2</sub> emissions.

# Opportunity and risk report

**New opportunities and risks are emerging from the markets' increasing awareness of environmental considerations and from standards aimed at reducing emissions, which we are addressing by further intensifying our R&D activities for innovative products.**

**We incorporate these challenges into our research and development activities at an early stage and seize every opportunity to offer competitive and innovative products.**

**In addition to our remarkable adaptability, our broad market base and global presence help us to offset possible declines in demand in individual markets.**

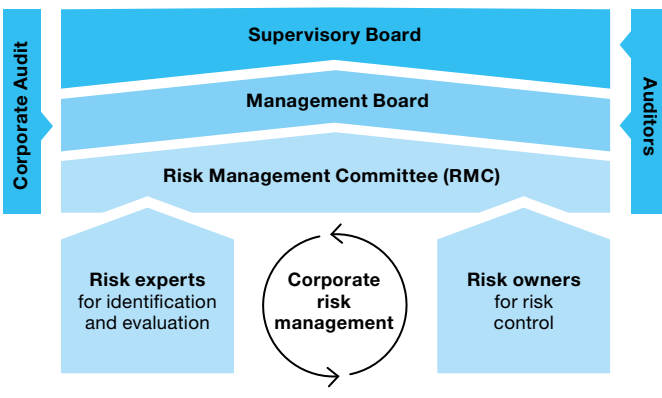
We use a management system to evaluate the opportunities and risks associated with our business operations. In this way, we gain knowledge from which we draw conclusions and adapt our actions accordingly. Our Group-wide Internal Audit department regularly verifies the compliance and efficiency of our processes and control systems by means of an audit plan, which changes on an annual basis.

## Market and technological trends

We identify long-term market and technological trends using a systematic scenario approach. This is founded on a baseline scenario that also includes the developments in our business areas, regions, products, and markets until 2035. On this basis, and using "extreme scenarios 2035," we subject our company to stress tests on various aspects, such as markets, regions, drive types, quantities, and technologies. By taking market and technological trends into account in this systematic way, we ensure that we identify opportunities and risks at an early stage. The findings from these analyses are used to make decisions about future business segments and new production processes; we include the measures derived in our strategic and budget planning. In the course of preparing management reports, we monitor whether and how the agreed steps are implemented.

Opportunities and risks arise from the markets' increasing awareness of environmental and sustainability considerations and from new standards aimed at reducing emissions, for example. We therefore include all relevant topics in our international research and development activities at an early stage and focus our attention on a wide range of technologies to increase the efficiency of the combustion engine, on alternative drive configurations, and on a holistic, intelligent thermal management system. As a result, we are able to offer our customers competitive, innovative products. With our steadily growing portfolio of electric drives and auxiliary components as well as other products in the electric powertrain, we are benefiting from the expanding market for electric vehicles. We have specifically strengthened these activities through multiple acquisitions, which have since been integrated into the Group. Through acquisitions made in recent years, we have also significantly expanded our thermal management business and our product portfolio to include air conditioning compressors. MAHLE therefore has the necessary resources and the expertise to devel-

### SCHEMATIC DIAGRAM OF RISK MANAGEMENT AT MAHLE



The transformation of the automotive industry and the consequences of the coronavirus crisis may change the key areas of risk. To manage this situation, we have introduced a systematic risk management process—with the following areas of focus:

op electric air conditioning compressors for the growing plug-in hybrid and electric vehicle market. By concluding the purchase agreement for Keihin's thermal management business, and subsequently completing its takeover at the start of 2021, we are also improving our regional footprint in Asia.

# ~60 %

**PROPORTION OF SALES BY BUSINESS SEGMENT  
INDEPENDENT OF THE OEM BUSINESS FOR THE  
PASSENGER CAR COMBUSTION ENGINE**

Impediments to trade such as Brexit and the tariff dispute between the USA and China, economic fluctuations, changes to the political framework in individual regions or countries, other developments that affect the global economy, and the growing number of competitors from Asia in particular can have a major impact on market developments and thus on the business development of our company. We therefore keep developments in this context under constant review. With regard to Brexit, there are no significant effects on business activities as things stand at present. In general, our broad market base and global presence serve as important stabilizing factors and help us to counter market and customer risks. Our highly diversified customer and product portfolio is also helpful in this respect. Consequently, possible declines in demand in individual markets or from individual customers can at least be partially offset. We therefore consider a global market slump, as in the economic crisis of 2009, the impact of which could have a major adverse effect on our profit, to be one of the greatest risks for our Group. These adverse conditions also include largely unforeseeable events such as the coronavirus pandemic and its consequences. In the year under review, this has resulted in a marked decrease in the global production of passenger cars and commercial vehicles in comparison with the previous year, with negative repercussions for the Group's profit situation. We limit the resulting consequences as effectively as possible by means of appropriate early warning systems and action plans. The discussions about diesel emissions and further bans on driving older diesel models are significant uncertainty factors for the whole automotive industry, particularly in Europe. By implementing suitable measures, we aim to mitigate the potential economic effects of a shift in technology at an early stage. These effects could also be due to possible legislative changes, such as a ban on combustion engines in passenger cars applicable from a certain point in time in particular countries or regions. By means of our dual strategy, through which we aim to assume a leading role in the ongoing technological development of the combustion engine while also driving forward innovative solutions for alternative powertrain technology, we are readying ourselves for future scenarios of this kind. Business segments that are independent of the OEM business for the passenger car combustion engine today already account for around 60 percent of Group sales. We want to continuously increase this proportion of sales that is unrelated to the passenger car combustion engine.

## Procurement and production

Our risk management system is also focused on minimizing the negative impacts stemming from the procurement markets. We prevent unexpected supply bottlenecks and/or price increases in purchasing by means of regular supplier assessments. We have stepped up these activities in recent years and are making sure that our suppliers' independence is maintained. In addition, we have been using a tool to monitor risks worldwide, which enables a rapid overview of the impact of natural disasters, strikes, and insolvencies. This increases transparency and thus decreases risk in the supply chain. Appropriate safety stocks and hedging transactions also serve to reduce procurement risks. Specific emerging risks that could lead to bottlenecks in the supply of purchased parts and thus to production interruptions—such as the COVID-19 pandemic in 2020 or supply difficulties with semiconductors and plastic granulates in spring 2021—are managed in Supplier Risk Committees. These committees are headed by Central Purchasing management and, depending on the topic, include employees from Sales, Logistics, Production, Development, and Quality to achieve the best possible level of coordination for the purpose of risk limitation. To optimize our business processes further, our production locations all around the world cooperate intensively. The MAHLE Production System that has been rolled out supports them in this.

By means of improved IT and production processes as well as high quality standards, we aim to ensure that operational risks, such as unforeseen circumstances, cyberattacks, unexpected technical malfunctions, accidents, and human error, hinder production operations as rarely as possible. In doing so, the increasing digitalization of individual process steps is also taken into account. Thus far, the increasing number of extreme weather events, such as floods, inundations, and droughts, have impacted our production locations only in isolated cases. MAHLE counters the associated risks using an established environmental management system. The risk posed by epidemics and pandemics had a severely detrimental effect on our production activities in the year under review. To reduce the danger of infections and local outbreaks, we developed and implemented enhanced hygiene and safety standards. In addition to the Supplier Risk Committees, a global task force covering operations, logistics, and IT and acting across all business units was established to make our supply chains even more secure.

Our Group has been audited and certified in accordance with recognized ISO standards and similar specifications relevant to our sector, in terms of quality, environmental protection, and safety at work, for example, and is thus subjected to important external checks that serve to limit risks. We have arranged an economically prudent degree of cover by means of insurance policies for the disruption of operations resulting from damage as well as liability risks. However, there were again quality incidents and warranty claims in the year under review, which impacted our profit. To prevent similar risks in the future, we have defined cross-functional countermeasures. For example, our development processes will be continually scrutinized and optimized with the additional goal of limiting the risks that could arise from increasing demands from our



customers to accept guarantee coverage. Where legally required, financial burdens resulting from quality incidents and warranty claims originating and known as at the balance sheet date, and which are likely to result in cash outflows, are covered by accruals as part of risk provisioning.

## Finance management

Using our systematic and Group-wide finance management system, we ensure that we make optimal use of financing opportunities from the banking and capital market. The liquidity risk is covered by diversified financing facilities with staggered maturity profiles that considerably exceed our Group's foreseeable financial requirements. When designing our financing mix, we take security, flexibility, and cost factors into account. Our aim is to secure the financial independence of our Group, limit the financing risks, and ensure we are able to exploit business opportunities at all times. We detect currency risks by means of our Group-wide planning and reporting system. Following standardized Group-wide principles, we counter these risks extensively using nonpredictive hedging transactions over a horizon of up to 24 months. As a rule, hedging transactions relate to OTC FX forwards or swaps in the form of portfolio hedges. The use of derivative financial instruments is necessarily linked to the existence of an operational underlying transaction; expected and not yet invoiced currency risks are covered with continuously declining hedging grades. The resulting hedging relationship generates valuation units in accordance with the critical term match method.

The interest rate risk is subjected to value-at-risk analyses. OTC hedging activities and other financial transactions give rise to counterparty risks with financial institutions, which we identify and evaluate across the Group in our uniform reporting system. If predefined thresholds are exceeded, the counterparty risk is lessened by the targeted spread of risks.

## Human resources, IT, and accounting

Highly qualified and motivated employees are a cornerstone of our success, now and in the future. That is why it is important for us to attract suitable staff, give them continuous support, help them gain further qualifications, and retain them in our company over the long term. We have developed a comprehensive personnel marketing concept and established a recruitment organization in order to initiate direct contact with potential candidates at an early stage and recruit qualified employees. We are thereby reducing the risk of not filling vacant positions or filling them only after some delay. In order to guarantee our Group's long-term success and take advantage of the opportunities arising from market and technological changes, our personnel requirement planning is geared toward developments in the relevant markets as well as strategically significant technologies and business segments. Performance-

related remuneration systems, modern pension schemes, and advanced training activities aim to motivate and retain employees in strategically important positions.

In the IT function, security technologies protect against unauthorized access to or misuse of data by internal and external parties. Servers and storage systems are set up in such a way that they can be restored at short notice in the event of a disaster and in crisis situations. Defined security standards encompass not only the technical specifications of the hardware and software, but also the functional security structures and organizational provisions. Detailed backup and recovery procedures reduce the risk of severe disruptions, for example, by securing access procedures as well as mirroring and archiving data on a daily basis.

With regard to the accounting process, the internal control and risk management system is aimed at ensuring the compliance and effectiveness of accounting and financial reporting. Besides guidelines and principles, the system also includes measures that serve to prevent and uncover reporting errors. The consolidated financial statements are compiled centrally based on data reported by subsidiaries. We guarantee compliance with the MAHLE guidelines by means of systemic controls, specialist advice, and manual checks as well as through the validation of data plausibility by the Group accounting function.

## Regulations and legislation

The introduction and implementation of directives alongside organizational and work instructions ensure that statutory requirements are observed. By integrating internal and external experts into the processes from an early stage, we minimize risks and exploit opportunities that could arise, for example, from fiscal, occupational, competition, patent, antitrust, data protection, and environmental regulations and legislation as well as from trade rules. Key elements of our compliance structure include the MAHLE Business Code, the global compliance organization, the whistle-blower system for internal and external compliance-related communications, as well as the training concept for risk areas relevant to compliance and preventive measures.

## Overall assessment

Overall, no risks are currently observable that could endanger the continued existence of our Group, provided that extreme global crises, such as the coronavirus pandemic, do not occur multiple times in quick succession.

# Outlook

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**We anticipate a recovery of the market for passenger cars and light commercial vehicles in 2021. However, the precrisis level of vehicle production of 2019 is not likely to be reached again just yet.**

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**For MAHLE, we expect a significant improvement in sales and profit.**

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**We want to continue to gain early access to innovative products and technologies in the growth areas.**

## Overall economic development

In 2021, the global economy will still be heavily influenced by how COVID-19 infection rates develop. Although the IMF projects in its January report that global economic growth will be over 5 percent, it has also stated that the year will remain beset by uncertainties, as the persistence or resurgence of the pandemic has the potential to lead to restrictions again at any time and put renewed strain on national economies. In many countries, the precrisis level of 2019 is unlikely to be reached in 2021.

IMF FORECAST

**5.5 %**

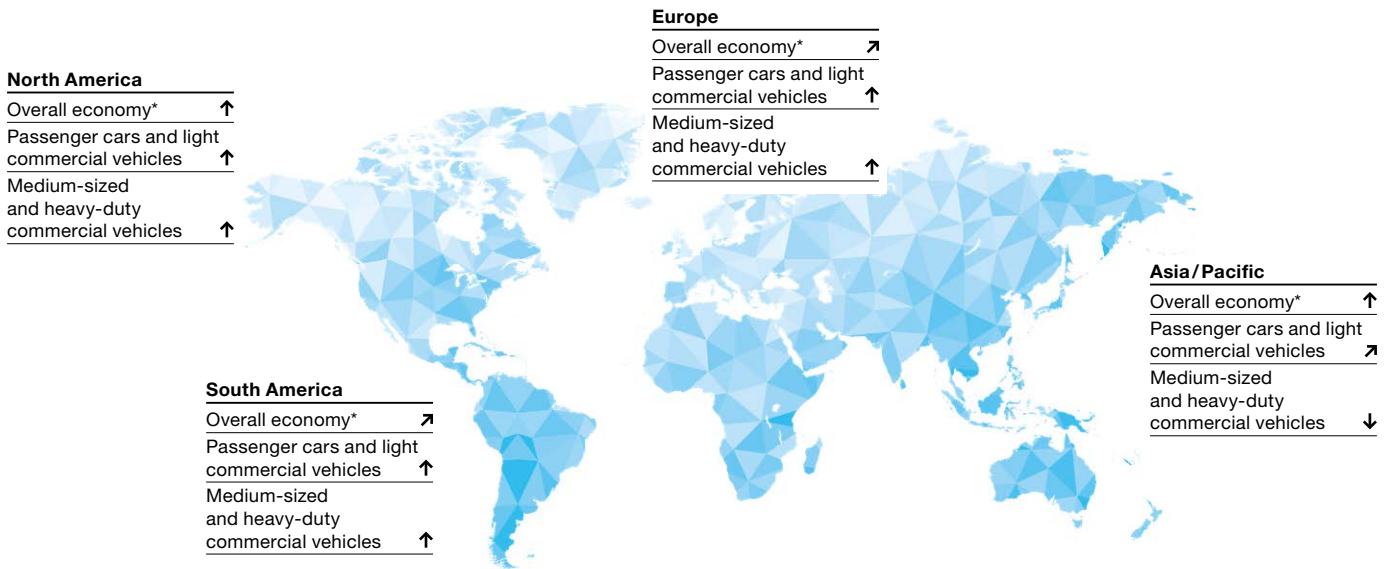
GLOBAL ECONOMIC GROWTH IN 2021

Economic growth of slightly above 4 percent is expected in the euro zone, with the upturn being supported by the economic stimulus packages put in place by individual countries. In North America too, the revival of the national economies depends on the ongoing development of the pandemic. A rise of around 5 percent is predicted for the USA. In South America, the IMF forecasts a weaker increase in economic output for the largest national economy, Brazil.

In the Asia/Pacific region, the economic outlook is good, especially for China, because the Chinese national economy is picking up very quickly and exports have continued to remain stable even during the crisis. Economists anticipate a rise of over 8 percent for the country. A strong recovery with 11 percent growth is expected for India. The IMF also forecasts an increase in economic output of slightly above 3 percent for Japan.

## Development of the vehicle markets

The global recovery of the passenger car and light commercial vehicle market will be shaped by major political and economic uncertainties in 2021. At the moment, it is difficult to foresee how long the restrictions implemented due to the COVID-19 pandemic will remain in effect and when a stable recovery will begin. Furthermore, there is global uncertainty with respect to the availability of microchips, which could lead to significant production losses in the first half-year. There is also the threat of temporary regional supply difficulties with plastic granulates. Nor is there much prospect of growth in the medium- and heavy-duty commercial vehicles segment—on the contrary, production figures could fall further owing to the declining Chinese market.



\* IMF forecast from January 2021

In Europe, the submarkets for both vehicle categories are expected to recover in 2021, but high COVID-19 case rates are likely to continue to put a significant strain on the economy for the time being. In many European countries, the purchase of vehicles is sometimes only possible to a limited extent due to lockdowns. Equally, despite Brexit having taken place, its economic consequences are uncertain.

In North America, the impact of the turbulent US presidential election will probably persist in 2021. In addition, there is an increase in unemployment in the United States. Nevertheless, the US markets for passenger cars and commercial vehicles are recovering well so far, although it remains to be seen whether this trend can

hold over the year. The upturn in South America should continue in both vehicle categories.

In Asia/Pacific, the market for passenger cars and light commercial vehicles is also likely to grow again. We expect a continued recovery in all regional submarkets. By contrast, the downturn in the medium- and heavy-duty commercial vehicles category is predicted to persist in 2021. The reason for this is China, where demand and production are likely to fall back to a normal level after a record year in 2020—although it has benefited from massive government investments. The recovery of individual markets like India, Japan, or Indonesia cannot be expected to offset this decline.

# Development of the MAHLE Group

The coronavirus pandemic will also create considerable uncertainty in 2021. Assuming that the automotive market recovers globally, we expect a significant rise in organic sales. However, this is unlikely to compensate fully for the slump in 2020. Furthermore, we anticipate that the result from business activities will improve substantially and turn out positively.

Our aim is to position our company for long-term future success and to safeguard our competitiveness. For this purpose, we are pushing ahead with the global realignment of our Group and continuing the systematic review of our locations around the world. At the same time, we are readying ourselves for further pressures resulting from the coronavirus pandemic and a slow recovery in the automotive industry as well as from volatile markets and political uncertainties. Against this background, we anticipate a return to precrisis sales levels by 2023 at the earliest. We also expect our work to manage the technological transformation to remain intense: The necessary investments and development efforts entail a rise in costs, which we are tackling by means of Group-wide savings. Overall, the audits of our locations and structures that we have carried out so far have indicated the need to make adjustments, predominantly in Europe. Our workforce will also be affected. In September 2020, we identified excess capacities of 7,600 jobs and began to make cutbacks, including in Germany. Due to a lack of follow-up projects, increasing global price pressure, and a changing business environment, we had to close our plants in Freiberg (Germany) and Gaildorf (Germany). Jobs in administration and development and in prototype construction will also be lost at the Group headquarters in Stuttgart (Germany).

## FOCUS FOR

# 2021

## PRESS AHEAD WITH FUTURE TOPICS

Despite the economic pressures, our focus remains on the technological transformation and our strategic goals. We will drive forward our future topics with undiminished vigor in order to put ourselves in a competitive position with the right expertise and portfolio. To expand existing growth areas and open up new ones, we are consistently implementing our dual strategy and taking steps to this effect, such as bundling the activities of various business units relating to future topics into project houses. For example, a dedicated project house has been created to develop fuel cell systems and their components. Our expertise in development, thermal management, and the assembly of battery components and systems is being pooled in another project house. In addition to other ideas, we are also participating in initiatives such as Gründermotor, whose corporate partner we became in 2020.

Gründermotor is an initiative from the German federal state of Baden-Württemberg, which aims to bring together start-ups, established companies, and the scientific community in the region, while nurturing entrepreneurial talent. Our specific objective is to network every level of our management through to the very top with the “ecosystem” of start-ups, companies, venture capitalists, universities, and politicians in order to give them firsthand experience of the working methods and thought processes adopted by start-ups. We also anticipate that our corporate start-ups will learn from other start-ups and companies.

It was against this background that we opened the Start-Up Space at MAHLE’s Group headquarters in Stuttgart in September 2020: a new, shared “home” for corporate start-ups and teams developing new business ideas in the MAHLE Incubator. The Incubator has been a Group-wide program supporting the development of new business propositions and a key part of MAHLE’s innovation strategy since 2017. Through the program, which transforms promising ideas into their own start-ups, MAHLE also offers employees the opportunity to continue their professional development, take an entrepreneurial approach, and try new ways of working.

Our economic success is the foundation on which we implement our future strategies. It enables us to invest in research and development, establish new business areas, and make acquisitions that complement our portfolio. To maintain and enhance a strong base, we strive for sales growth while seeking to increase profitability at the same time. Our financial independence and ability to withstand potential crises are always our priorities. We therefore set great store by a healthy balance sheet structure and moderate net gearing. The mainstays of our financial policy are thus a solid equity base and liquidity that is secured over the long term and built on stable operating cash flows as well as diversified financing sources and instruments.

This report contains forward-looking statements that rely on current estimates of future developments and are therefore subject to risks and uncertainties that are beyond our control or precise assessment. Consequently, the actual results may differ from the statements made here.