

# Sustainability Report Brose Group 2018



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This sustainability report is an abridged version supplementing the 2017 report and updating the key figures. The contents and statements already presented are still valid.

# The Brose Group

Brose is the fourth-largest family-owned automotive supplier. No matter where in the world a vehicle door or window is opened, a car seat is adjusted or the air conditioning is switched on – you will almost always find Brose Group technology in use. Although usually not visible to the driver, our products provide more comfort, safety and efficiency. Brose is the market leader in many areas, for example in door systems, electronically commutated cooling fan modules or premium front seat structures. The 100% subsidiary Brose Antriebstechnik has been manufacturing e-bike drives since 2015.

### **Facts and figures**

26,100 employees, 58% in Europe and Africa, 25% in America and 17% in Asia.

Three headquarters in Coburg (CEO, Seat division), Hallstadt (Door division) and Würzburg (Drives division) along with two regional headquarters in Detroit/USA and Shanghai/China. Headquarters: Max-Brose-Str. 1, 96450 Coburg, Germany Investments in research and development: 8% of turnover

### **Executive management**

### Shareholder family

Michael Stoschek (Chairman), Christine Volkmann and their respective children

### **Advisory Board**

Franz-Josef Kortüm (Chairman), Prof. Dr.-Ing. Thomas Weber, Prof. Dr. Andreas Wiedemann

#### **Executive Management Board**

Kurt Sauernheimer (CEO and Door business division), Thomas Spangler (CTO), Niklas Beyes (Commercial Administration), Periklis Nassios (Purchasing), Patrick Popp (Drives business division), Sandro Scharlibbe (Seat business division), Jörg Schwitalla (Human Resources)

The shareholder meeting is the highest governing body in the Brose Group. Three of its members are women and two are men. All of the shareholders have been involved in the business and worked on social causes for years.

# Philosophy

The Brose executive management adopted the FIRST company principles and introduced them worldwide with the aim of delivering first class performance in every respect. Every letter stands for a principle:



### Family

The family places the company's interest ahead of their own. Thus, we will grow in a profitable and self-financed way, and maintain our family-owned company's independence.



### Innovation

We set standards with innovative mechatronic systems and components, securing a leading market position with the best price-performance ratio.



#### Respect

Every employee, especially every manager, is a role model. Aware of our social obligation, we act fairly towards employees on all levels and at all locations.



We deliver top performance to our customers. Therefore, we set the highest quality standards for ourselves and our partners.



Shareholders, board members and employees collaborate based on trust, take clear and fast decisions and assume responsibility for their actions.

### Locations and Internationalization

Brose operates 63 locations in 23 countries, including 44 own plants and six production sites with local partners.



### Turnover in 2018 6.3 billion euros

By region: Europe 3.2 billion euros, America 1.8 billion euros, Asia 1.3 billion euros By division: Door 3.2 billion euros (51%), Seat 2 billion euros (32%), Drives 1.1 billion euros (17%)

### Product portfolio

Door Door systems Side door drives Window regulator Closure systems Liftgate systems Motors and drives and electronics

### Seat

Front seat structures Rear seat structures Seat components Adjustment systems for the vehicle interior Motors

### Drives

Systems for thermal management and the drive train Motors for chassis and steering Electronic controls Sensor technology



# Compliance Management System implemented

One of the Brose Group's highest priorities is its global Code of Conduct with defined rules of ethical and legally compliant behavior that are binding for all employees in the company.

To ensure compliance with the Brose Code of Conduct at every level of the company, a corresponding e-learning course is mandatory for all non-industrial employees in the Brose Group. Around 8,500 people worldwide have completed the e-learning course and repeat the course every 36 months. Course content is updated regularly. Managers are responsible for ensuring that their employees complete the course promptly.

In 2018 we also enhanced our Compliance Management System, which meets both national and international standards. We are always further developing this system, which ensures ethical and legally compliant conduct in the Brose Group. Moreover, it helps us control and minimize compliance risks. Measures include prevention, overseeing compliance and responding to improper conduct.

Risk minimization is a key factor in this. This is why Brose developed an internal control system for taxes (ICS) alongside the many internal process controls that have been installed. The corporate group uses this system to ensure that organizational and controlling obligations are met and that no risks exist relating to tax liabilities or fines. Our ICS for taxes builds on our tax Code of Conduct and its C.A.R.E. principles. Brose created this Code of Conduct to demonstrate exemplary compliance with tax regulations, thereby reflecting the commitment and expectations of the executive management board.



Fulfillment rate for the "Brose Code of Conduct" e-learning course

# Raw materials and resources

### Material pooling and strategic supply sources

The Brose corporate group aims to achieve the best possible control of the quality of the materials supplied to us. This also includes the unambiguity of the supply sources and reliable supply capabilities. This is why we follow a strategy of defining and bundling strategic supply sources. Bundling sources together in this way also permanently optimizes shipping routes and reduces associated  $CO_2$  emissions. We use materials pooling to define raw material suppliers in every region. Furthermore, we define materials and how preferred materials are bundled. At the same time, Brose records and strategically controls the pool rates as key performance indicators (KPIs).

# Supplier management

### CSR management in purchasing: project managers and processes defined

We are establishing the most efficient and resource-conserving groupwide methods of purchasing raw materials and products effectively implementing both internal and external supply chain sustainability requirements. As part of our corporate social responsibility (CSR) we therefore nominated a Sustainability Project Manager for our Purchasing organization and filled the position on 1 January 2019.

The project manager is responsible for every aspect of CSR within the supply chain. This includes the requirements we define for our suppliers and processes and their continuous further development.

### Currently implemented and scheduled activities:

- Code of Conduct for suppliers: mandatory starting September 2019
- Establish CSR processes among key players in the automotive industry: workshops on the topic of CSR with the Brose CSR representatives

# Energy use and emissions

### Reduced CO<sub>2</sub> emissions through further development of our products

To reduce  $CO_2$  emissions in production and during the service life of our products, we constantly strive to improve them, with smaller form factors and lower weights being among our highest priorities. We made significant progress with multiple products in every business division during the reporting year. The basis used to calculate the following examples is the simplified Life Cycle Assessment according to Brose Norm BN 590020 with an assumed ratio of 50 percent each for gasoline and diesel vehicles. The defined service life is based on a useful life of 200,000 km.

The Seat business division leveraged significant savings potential for a power steering column adjuster. The new power steering unit is 35 percent lighter when compared to a reference product manufactured by one of our competitors. After conducting a systematic analysis of the entire system, we were able to achieve weight savings for virtually every component part of the adjuster. Based on the planned quantities of 1.5 million units per year starting in 2022, we anticipate a CO<sub>2</sub> reduction of 5,520 t.

Seat also dramatically cut the package space and weight of the smart interior actuator. The actuator assumes several functions in the vehicle interior and is used to adjust vent flaps, among other things. Thanks to design improvements, the business division also achieved a 20 percent reduction in package space compared to a reference product made by one of our competitors, while cutting its weight by 10 percent. Based on the planned quantities of 2 million units per year starting in 2022, we anticipate a  $CO_2$ reduction of 280 t.

The Door business division built a new lightweight latch that weighs just 410 g. It will replace the current 620 g modular latch. Production begins in 2019. The savings potential for  $CO_2$  emissions is 4.8 kg  $CO_2$  per product. Broken down over the production year with approximately 450,000 latches, this translates into a  $CO_2$  savings of 2,144 t.

The Door business division's new generation of push rods weighs in at 1,760 g, saving around 210 g compared to its predecessor. The new model will roll off the assembly lines for the first time in 2019, with an expected  $CO_2$  savings of 15,360 t by the end of production.

The Drives business division also completed several weight savings projects during the reporting year. These included the shrouds in our cooling fan modules, which we offer in a range of sizes and performance levels. Instead of making them from polyamide (PA) as in the past, future shrouds will be manufactured from the lighter material polypropylene (PP), which will reduce the total weight of the module by around 6 percent. This translates into a 30,702 t reduction in  $CO_2$  emissions on just a single order of 4.2 million units. The percentage of Brose cooling fan modules with PP shrouds is rising steadily. Our target is to increase this from 5 percent in 2017 to 65 percent in 2021.

In the future Brose cooling fan modules will feature more and more shrouds made of the extremely lightweight material polypropylene.



### Environmentally friendly product testing process in use

Our Drives business division developed an environmentally friendly testing process for the electric air conditioning compressor. The process is used to test each individual function of the manufactured system. Testing is performed with air instead of conventionally used chemical refrigerants, which therefore also cannot be lost during connection and disconnection. Compared to the end-of-line process developed by Brose, traditional testing methods with similarly meaningful results require considerably more effort because they involve vacuum suctioning. In addition, they take around four hours, making them much more time consuming. Our approach is the first fully automated test of its kind and takes only 15 seconds to complete. Therefore, the new testing method not only eliminates the need for refrigerants, it also results in significant energy savings.

### Door testing area: climatic chambers with CO<sub>2</sub> instead of R23

During the reporting year we placed an order for two drive-in climatic chambers with  $CO_2$  instead of R23 (fluoroform) as refrigerants in the freezing stage. The climatic chamber will be used in the testing for access & closure systems. We worked with our system manufacturer to implement the first project of this size using  $CO_2$ .

This measure enables us to mitigate the risk of serious environmental damage due to refrigerants in the event of an incident. Each system reduces global warming potential by 114  $CO_2$  equivalents. At the same time we also expect a 6.5 percent increase in energy efficiency. The systems will be delivered and installed in fall 2019.

### Efficiency gains in production

From 2016 to 2018 we implemented more than 130 individual measures designed to increase energy efficiency in our production locations. These measures were primarily related to cross-sector technologies – such as compressed air, lighting, cooling or ventilation. For example, successive modernization of our lighting equipment in the respective production and administrative areas saves up to 50 percent of the required energy – a total of 2.5 GWh each year. Moreover, we either replaced compressed air generating equipment with more efficient models or equipped them with intelligent controls or heat recovery systems. We are increasingly replacing incremental controls in ventilation systems with frequency controlled drives, which enables us to operate them based on our actual needs. When procuring new systems we also ensure that they meet our high environmental and energy efficiency standards. Our internal Production Equipment Specifications "Work Safety and Environment – BN 589580" are always an integral part of our technical specifications, which ensures these environmental and energy efficiency standards are firmly anchored in the procurement process. For example, we rely on efficient servo technology when purchasing new plastic injection molding systems. This saves up to 30 percent more energy compared to conventional hydraulic technology. Furthermore, we made a number of individual improvements to existing production facilities in the period from 2016 to 2018, which result in an annual reduction in energy consumption of 8.8 GWh.

# Additional measures undertaken to improve environmental friendliness

### Research partnership for lightweight manufacturing process

We not only conserve resources and cut costs both in Brose products and processes and those of our suppliers, but also through our targeted network building efforts. This enables us to avoid investing in equipment that is not or not sufficiently useful. It also increases capacity utilization rates for existing systems. One example of this type of partnership is the "FuPro" research project. It is sponsored by the Federal Ministry of Education and Research and is aimed at developing a manufacturing process for ultra-light multicomponent structures with high functional integration potential. During the project we used existing partner systems and shared our experiences. Brose achieved dramatic savings in resources and investments compared to the conventional development process: both the utilized machine fleet and the required property including infrastructure were worth millions of euros.

### Hybrid complete door cuts CO<sub>2</sub> emissions

The Door business division is collaborating with our partner Plastic Omnium on a concept for a hybrid vehicle door construction made of plastic and strategically positioned metal reinforcements. Among other benefits, this will enable new shapes and design freedoms, which will have an especially positive impact on aerodynamics.

Integrated rear mirrors/cameras, the elimination of the need for handles, seamless window transitions and air ducts to the wheel housing built directly in the door reduce fuel consumption and  $CO_2$  emissions or increase the range of the vehicle between fueling/charging stops. These measures reduce the flow resistance of the vehicle by around 5 percent. This cuts  $CO_2$  emissions during operation by 1.8 g/km. The hybrid door developed by Brose and Plastic Omnium offers new design freedoms to improve vehicle dynamics.



© PLASTIC OMNIUM Intelligent Exterior Systems

# Systematic employee development

### New leadership culture guidelines

Brose is committed to ensuring its managers set the best possible example. We developed a common understanding of leadership throughout the enterprise and drafted new leadership culture guidelines during the reporting year to ensure that our managers continue to lead by example. Each of our executive vice presidents acts as a mentor for a specific guideline and establishes the guideline within the company using lectures, articles, training courses or fireside chats.

In concrete terms, this is about team spirit and openness, the desire to improve, strengthening entrepreneurial activ-

ities, challenging and fostering employees, a sharper customer focus, simpler and thus faster decision-making paths and showing humility in success.

The individual guidelines stand for specific personal attributes and are assigned to corresponding working methods. This enables supervisors to give performance appraisals. The principles are also applied in development programs for our managers, in the Brose personality profile and in management assessments.

### Leadership development programs

Brose has implemented new HR development programs to expand key leadership skills. During the reporting year over 2,400 managers took part in 203 training courses. An 18-month "Executive Leadership Program" is aimed at top managers with high potential and is carried out in collaboration with the European School of Management and Technology in Berlin.

The training units are accompanied by one executive vice president each. Focus topics include personal development, strengthening specialist and management expertise and ex-

### Building expertise in production

We are gradually implementing HR measures as part of the "Factory 2025" project in order to strengthen the competitiveness of our plants and our appeal as an employer in production. The program focuses on leadership and employee qualification, working environment and demographic development.

This is why we established the "PTM for Workers" qualification program during the reporting year. The Performance and Talent Management program helps managers in production facilities discover and promote specialists panding leadership experience, including in new areas of responsibility. Brose invests a sum in the mid-five-figure range for each participant.

The "Senior Leadership Development Program" complements the range of opportunities available for growth. It is aimed at managers with executive potential. There are also training programs available at the "Leadership Campus", which range from project management to refresher courses for experienced managers. We will continue to expand the development and training program in 2019.

and managers at every stage of career development. The program helps employees obtain professional, personal and methodological qualifications.

To ensure employees remain motivated and sustainably reduce the number of sick days and employee turnover, we will focus on new career paths for production employees along with an attractive and healthy working environment as we deploy our "Factory 2025" strategy.

# Good working conditions: health and society

### Expansion of health management efforts

Brose conducted a global survey to determine the current status and additional requirements of the occupational health management program. Topics included employee and family services, sports and health-related projects. Recommendations for action were drafted for the Europe, NAFTA and Asia regions based on location size, HR figures and growth projections.

We implemented the following projects during the reporting year:

#### At European locations including Germany

- Intensified preventative healthcare for all employee groups
- Expanded voluntary flu vaccinations
- Company sports events

#### At NAFTA locations

- Family days
- Campaign days to promote health and fitness
- Addition and substance dependence counseling
- Physiotherapy offers for salaried employees and employees in production

#### At Asia region locations

- Health checks for all employee groups
- Additional paternal leave
- New company sports programs

### Ergonomics in the workplace

As a family-owned company, Brose takes the health of its employees very seriously. This is why we further improved ergonomics in our production workplaces around the world during the reporting year. We achieved our plant target for ergonomics in almost every plant. Specifically, we are relieving the burden on our employees by increasing the use of robots and automation for strenuous work. Ideally, these measures will also shorten assembly times and increase efficiency.

We established the "ergonomic check-up" to clearly assess our global locations and the work systems in place there. We evaluate existing and planned work systems using the traffic light method. Now only older plants have "red" workplaces with very strenuous tasks. Targeted selection of employees and job rotation help us alleviate possible negative impacts of these workplaces. One example of these optimization measures is a dramatic improvement in the assembly of our seat structures in our Peking/China plant. Once the 3.2-kilogram backrest has been welded it is no longer removed by a worker. The process uses a robot instead while the employee is free to do other tasks, such as prepare for the next welding operation. This reduces the physical burden by up to 5 t per shift, while simultaneously shortening the process time.

Another successful example of human-machine collaboration can be seen in our heavy rear seat structures: in Querétaro/Mexico we implemented a new concept for assembling the third row of seats. Industrial robots transport the seat structures between different processing stations and ensure the parts remain in the optimal position for each workstep. The position is individually adapted to the respective employee's height.

### Pension plan

Obligations arising from the pension plan for the Brose Group worldwide were 553 million euros (according to IFRS) as at 31 December 2018. The preparations launched during the preceding reporting year to ensure further financing of these essential pension obligations in Germany are complete. A Contractual Trust Arrangement (CTA) was created for this purpose. To ensure we receive the envisaged income and estate tax breaks Brose submitted detailed, binding returns to the tax administration.

# New data protection guidelines

The European General Data Protection Regulation (GDPR) entered into effect in May 2018. To underscore its responsibility as a trusted employer, Brose implemented new data protection provisions for employees and applicants as well as for customer and supplier relationships. These provisions outline how we handle employee and customer data along with business information.

Our data protection guideline covers the responsible contacts within the company along with basic principles for satisfying the requirements set forth by the GDPR. Moreover, it provides a framework for how Brose and its employees accept ownership of these responsibilities. The guidelines are binding for all employees in our European locations. They are always accessible to all employees via the Brose intranet. To ensure compliance with data protection regulations, every employee agrees to take part in a regular e-learning course on the subject of data protection.

1. Employees in 2018





### 2. Employees in 2018



### 3. Employees in 2018



excluding temporary workers, by region

Total

Women

### 4. New entries by age group in 2018

	Total	under 20	20-29	30-39	40-49	50-59	From 60
New entries	3,405	222	1,484	1,087	441	160	11
Share of worforce (%)	14.6						
Share of designated workforce groups (%)		62.2	26.9	13.8	8.6	4.3	1.5

### 5. New entries by gender in 2018

	Total	Male	Female
New entries	3,405	2,354	1,051
Share of worforce (%)	14.6		
Share of designated workforce groups (%)		14.3	15.4

### Total Germany Europe excl. Germany Asia North America South America

### 6. New entries by region in 2018

	Total	Germany	Europa excl. GER	Asia	North America	South America
New entries	3,405	693	874	541	1,219	78
Share of workforce (%)	14.6					
Share of designated workforce groups (%)		8.3	15.0	15.6	23.7	17.8

### 7. Exits by age group\* in 2018

Total	under 20	20-29	30-39	40-49	50-59	From 60
2,642	22	990	868	447	193	122
11.9						
	6.6	18.4	11.7	9.1	5.5	18.0
	Total 2,642 11.9	Total under 20   2,642 22   11.9 6.6	Total under 20 20-29   2,642 22 990   11.9 6.6 18.4	Total under 20 20-29 30-39   2,642 22 990 868   11.9 6.6 18.4 11.7	Total under 20 20-29 30-39 40-49   2,642 22 990 868 447   11.9 6.6 18.4 11.7 9.1	Total under 20 20-29 30-39 40-49 50-59   2,642 22 990 868 447 193   11.9 6.6 18.4 11.7 9.1 5.5

\* excluding joint ventures

### 8. Exits by gender\* in 2018

	Total	Male	Female
Exits	2,642	1,756	886
Share of workforce (%)	11.9		
Share of designated workforce groups (%)		11.2	13.5

\* excluding joint ventures

### 9. Exits by region\* in 2018

	Total	Germany	Europa excl. GER	Asia	North America	South America
Exits	2,642	296	923	439	917	67
Share of workforce (%)	11.9					
Share of designated						
workforce groups (%)		3.6	16.6	13.8	19.0	15.7

\* excluding joint ventures

### 10. Public funding in 2018

in millions of euros, in % of the total payments, by region



### 11. Tax breaks and tax relief in 2018



in millions of euros, in % of the total payments, by region

The quantities given in this section are based on a new data basis and are thus not 100 percent comparable to the 2017 Sustainability Report.

### 1. Material tied to non-reusable and reusable packaging

Tons
1,111.86
34,107.78
189,927.28
7,466.39
144.24
171,877.39
25.13

### 2. Product packaging materials in 2018



#### 3. Composition of non-reusable packaging in 2018

Share of weight in t



4. Composition of reusable packaging in 2018

Share of weight in t



5. Use of materials for products in 2018

Material	Use of materials in tons	Share in percent
Steel	399,055.13	72.56
Filled/reinforced plastics	86,176.91	15.67
Copper/copper alloys	13,937.07	2.53
Plastic	21,399.36	3.89
Aluminum/aluminum alloys	13,812.76	2.51
Other metals	10,645.06	1.94
Elastomers	3,351.70	0.61
Magnesium/magne- sium alloys	569.17	0.10
Zinc/zinc alloys	539.64	0.10
Other	442.96	0.08



### 7. Use of secondary raw materials for products in 2018

Material	Use of materials in tons	Share of second- ary raw materials in tons
Steel	399,055.13	175,584.26
Plastic	107,576.27	32,272.88
Aluminum	13,812.76	8,287.65
Copper	13,937.07	5,992.94
Total	534,381.24	222,137.74

### 10. Share of procurement volume and localization rate



### 3. Consumption in 2018



### 4. Externally consumed energy in 2018



### 5. Energy savings thanks to efficiency measures 2016-2018

	kWh	MJ	$\rm CO_2$ in t
Power	6,751,397	24,305,029	4,051
Gas	809,471	2,914,096	486
District heating	225,000	918,000	153
Total	7,815,868	28,137,125	4,690

6. Scope 1 emissions in 2018



7. Scope 2 emissions in 2018

Ton CO2 equivalent



### 8. Intensity quotient of GHG emissions in 2017

Intensity quotient	Value	Change vs. previous year	Reason
t CO <sub>2</sub> /million euros in turnover	17.65	- 16.6%	Increase in the share of renewable energies for electricity purchases
t CO <sub>2</sub> /employee	4.28	- 16.5%	Increase in share of renewable energies and growing number of employees
t CO <sub>2</sub> /MWh	0.28	- 20.0%	Increase in the share of renewable energies for electricity purchases and rising energy consumption

### 11. Amount of waste types in 2018

in t, by region

60,000 50,000 40,000 30,000 Europe 13,803 20,000 North America 8,183 3,619 780 Latin America 3,355 2,078 10,000 ŝ 2,01 1,08 377 914 Asia 977 1,37 45 10 107 392 0 33 31 ø 0 Africa Scrap for recycling/energy Household/commercial Metal waste (scrap) Special waste recovery refuse

### 12. Documented waste paths in 2018



13. Total water consumption in 2018



14. Water discipline measures implemented in 2018





in m³, by disposal type and region



Level of effluents reintroduced into the ground water

Level of effluents collected in the public sanitary sewer

1. Number of work-related accidents > 3 days in 2018



3. Accident severity in 2018



5. Range of investments in the community in 2018

### 2. TMQ3 in 2018



in thousands of euros 397 1,381 678 Total 13,313 0 0,857 0 Social responsibility Culture Education Sport

4. Investments in the community in 2018

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